

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ROOFR, INC.,
Petitioner,

v.

PICTOMETRY INTERNATIONAL CORP.,
Patent Owner

IPR2023-00436
Patent 9,183,538 B2

Before STACEY G. WHITE, GARTHD. BAER, and RUSSELL E. CASS,
Administrative Patent Judges.

BAER, *Administrative Patent Judge.*

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

A. Background

Roofer Inc. (“Petitioner”) filed a Petition requesting an *inter partes* review of claims 1–18 (the “challenged claims”) of U.S. Patent No. 9,183,538 B2 (Ex. 1001, “the ’538 patent”). Paper 5, 1 (“Pet.”). Pictometry International Corp. (“Patent Owner”) filed a Preliminary Response. Paper 11 (“Prelim. Resp.”). With our authorization, Petitioner filed a Reply to Patent Owner’s Preliminary Response (Paper 12, “Pet. Reply.”) and Patent Owner filed a sur-Reply (Paper 13, “PO Sur-reply”).

Under 35 U.S.C. § 314, an *inter partes* review may not be instituted “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” Upon consideration of the Petition in view of the present record and for the reasons explained below, we determine that Petitioner has shown a reasonable likelihood of prevailing with respect to at least one of the challenged claims. Accordingly, we institute an *inter partes* review on all grounds set forth in the Petition.

B. Related Proceedings

The parties identify the following related matters: *Pictometry International Corp. v. Roofer, Inc.*, 1:21-cv-01852 (D. Del). Pet. 88; Paper 3, 2.

C. The ’538 Patent (Ex. 1001)

The ’538 patent is directed to determining an estimated roofing area based on the predominant pitch and the footprint of the roof. Ex. 1001, code (57). Figure 6 is reproduced below.

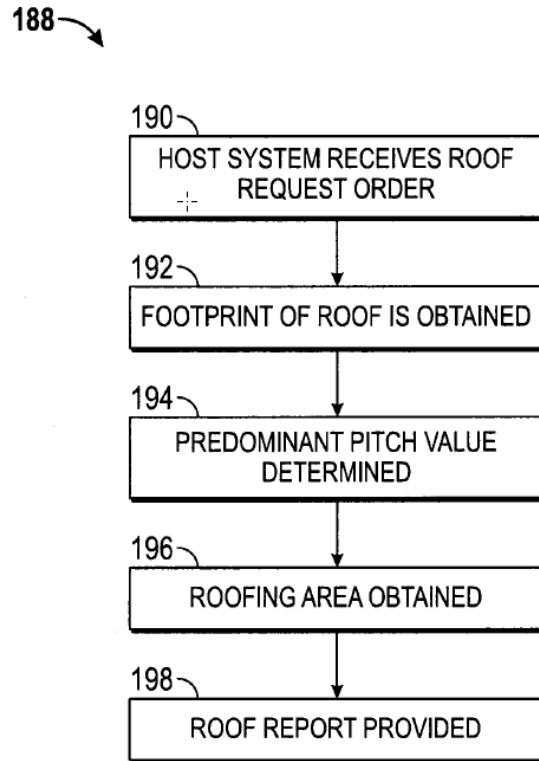


FIG. 6

Figure 6 is an “exemplary embodiment of a program logic.” *Id.* at 1:56–57.

D. Illustrative Claim

Challenged claims 1, 13, and 14 are independent. Claim 1 is illustrative and is reproduced below.

1. One or more non-transitory computer readable medium storing a set of computer executable instructions for running on one or more computer systems that when executed cause the one or more computer systems to: identify a geographic location of a roof; determine a footprint and predominant pitch of the roof by analyzing one or more image showing the roof; determine an estimated roofing area of the roof based on the predominant pitch and the footprint of the roof; and generate a roof report for determination of an amount of materials needed for a construction project, wherein the roof report includes at least one image showing the roof and the estimated roofing area of the roof.

Ex. 1001, 15:21–32.

E. Asserted Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability. Pet. vii.

Claims Challenged	35 U.S.C. §	References/Basis
1–5, 8–13	103(a) ¹	Pershing-789 ² , Bailey ³
6, 7, 14–18	103(a)	Pershing-789, Bailey, Abhyanker ⁴
1–5, 8–13	103(a)	Kennedy ⁵ , Bailey
6, 7, 14–18	103(a)	Kennedy, Bailey, Abhyanker

Petitioner submits a declaration from Tony Cummings. Ex. 1003.

II. DISCUSSION

A. Discretion under 35 U.S.C. § 325(d)

Patent Owner contends we should deny institution under 35 U.S.C. § 325(d) because the same or substantially the same prior art or arguments previously were presented to the Office. Prelim. Resp. 11. Specifically, Patent Owner explains, two of the asserted references, Pershing-789 and Kennedy, were cited in the prosecution history and the other two references, Bailey and Abhyanker, are cumulative of references the examiner

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), included revisions to 35 U.S.C. § 103 that became effective after the filing of the application that led to the challenged patent. Therefore, we apply the pre-AIA version of 35 U.S.C. § 103.

² US 2008/0262789 A1, Pub. Oct. 23, 2008 (Ex. 1004).

³ *Roofers: Steep Roofing Inventory Procedures And Inspection And Distress Manual for Asphalt Shingle Roofs*, David M. Bailey, U.S. Army Corps of Engineers, CERL Tech. Rept. (December 1999) (Ex. 1010).

⁴ US 2007/0220174 A1, Pub. Sep. 20, 2007 (Ex. 1005).

⁵ US 2009/0304227 A1, Pub. Dec. 10, 2009 (Ex. 1009).

considered during prosecution. *See* Prelim. Resp. 12–20. For the reasons given below, we are not persuaded to exercise our discretion to deny the Petition based on § 325(d).

In evaluating arguments under § 325(d), we use a two-part framework: (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and (2) if either condition of the first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims. *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential).

In the examiner’s notice of allowance, the examiner explained that the claims were allowable because the prior art of record did not disclose the claimed “predominant pitch.” Ex. 2002, 2448. Here, Petitioner relies on Bailey, a reference that was not before the examiner, for teaching this “predominant pitch” feature. Pet. Reply 1. Patent Owner argues that Bailey’s “predominant pitch” disclosure is cumulative of an EagleView Guide that was before the examiner and, much like Bailey, expressly discloses “Predominant Pitch” as an entry on a report. Prelim. Resp. 15; PO Sur-reply 3–4; *see* Ex. 2002, 2515. Further, Patent Owner asserts, “[b]y determining the ‘predominant pitch’ limitation was missing from the prior art, the Examiner indicated that he did not consider a simple recitation of the words ‘predominant pitch,’ without more, to be sufficient to meet the claim limitation under his interpretation thereof.” PO Sur-reply 3–4.

On this record, we need not decide whether part 1 of the *Advanced Bionics* framework is met because Petitioner has sufficiently shown under part 2 that the Office materially erred when it allowed the challenged claims. *See* Pet. Reply 2. Because the examiner did not substantively discuss the EagleView Guide, it is unclear whether the examiner simply overlooked its “Predominant Pitch” teaching, or whether the examiner considered that teaching, but found it insufficient, as Patent Owner contends. *See* Ex. 2002, 2448; PO Sur-reply 3–4. It ultimately does not matter because whichever was the cause, we agree with Petitioner that the examiner materially erred in concluding that the EagleView Guide failed to teach the “predominant pitch” feature. *See* Pet. Reply 2. For this reason, we decline to exercise our discretion to deny institution under § 325(d).

B. Claim Construction

In an *inter partes* review proceeding, we construe patent claims using the same standard used in a civil action under 35 U.S.C. § 282(b), including construing the claim in accordance with the ordinary and customary meaning of the claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. 37 C.F.R. § 42.100(b). Neither party proposes an express construction for any claim terms. Pet. 2; *see generally* Prelim. Resp. We agree that no claim terms require express construction for purposes of this Decision.

C. Level of Ordinary Skill in the Art and Petitioner’s Expert

Petitioner contends “a person of ordinary skill in the art at the time of the alleged invention would have bachelor’s degree in architecture or an equivalent with at least five years of experience performing roof estimation,”

and that “more experience would compensate for less formal education, and vice versa.” Pet. 2 (citing Ex. 1003 ¶¶ 1–7).

Patent Owner does not challenge Petitioner’s definition, but contends that we should give no weight to Mr. Cummings’s opinions because they “repeat *verbatim* Petitioner’s conclusory arguments presented in the Petition.” Prelim. Resp. 34.

On this record, we disagree with Petitioner’s definition because it does not reflect that one skilled in the art would also have computer-related experience, even though the challenged patent and the asserted prior art deal extensively with computer modeling. Instead, we find that one skilled in the art would have a Bachelor’s Degree in an academic area emphasizing the design of electrical, computer, or software technologies, or a similar discipline, and at least two years of experience related to computerized image analysis and three-dimensional modeling. In addition, experience may compensate for formal education, and vice versa.⁶

In addition, we do not find it problematic that the Petition repeats Mr. Cummings’s testimony as that does not undermine the testimony’s persuasiveness or its status as evidence, nor does it mean Petitioner’s arguments are conclusory, as Patent Owner suggests. *See* Prelim. Resp. 34–35.

D. Description of Prior Art References

1. Pershing-789 (Ex. 1004)

Pershing-789 teaches “[a] system that allows the remote measurement of the size, geometry, pitch and orientation of the roof sections of a building

⁶ This definition is the same as in related IPR2023-00435.

and then uses the information to provide an estimate to repair or replace the roof.” Ex. 1004, code (57).

2. *Bailey (Ex. 1010)*

Bailey teaches methods for estimating area of a roof. Ex. 1010, 136–137. Bailey’s method uses “the total projected horizontal areas” and “convert[s] to actual areas with the aid of” a table that indicates slope and an “Area/Rake Factor.” *Id.* at 137. Bailey also teaches methods for collecting data about a roof, including the “predominant slope.” *Id.* at 17.

3. *Kennedy (Ex. 1009)*

Kennedy teaches “[a] roof estimating software program [that] receives location information of a building in the selected region and then presents the aerial image files showing roof sections of building.” Ex. 1009, code (57). Kennedy further teaches “a sizing tool for determining the size, geometry, and pitch of the roof sections of a building being displayed.” *Id.*

4. *Abhyanker (Ex. 1005)*

Abhyanker teaches “marker placement in a mapping environment.” Ex. 1005, code (57). Abhyanker teaches that “the method may include applying a drag and drop algorithm that enables the user to sequentially and/or concurrently relocate markers in the mapping environment, iteratively performing additional verifications.” *Id.* ¶ 11.

E. Obviousness Analysis

1. *Ground 1: Obviousness based on Pershing-789 and Bailey*

In its first unpatentability ground, Petitioner contends that claims 1–5 and 8–13 would have been obvious over Pershing-789 and Bailey. Pet. 20–54. Based on the present record and for the reasons explained below, we determine that Petitioner has demonstrated a reasonable likelihood of

success in proving that claims 1–5 and 8–13 would have been obvious over Pershing-789 and Bailey.

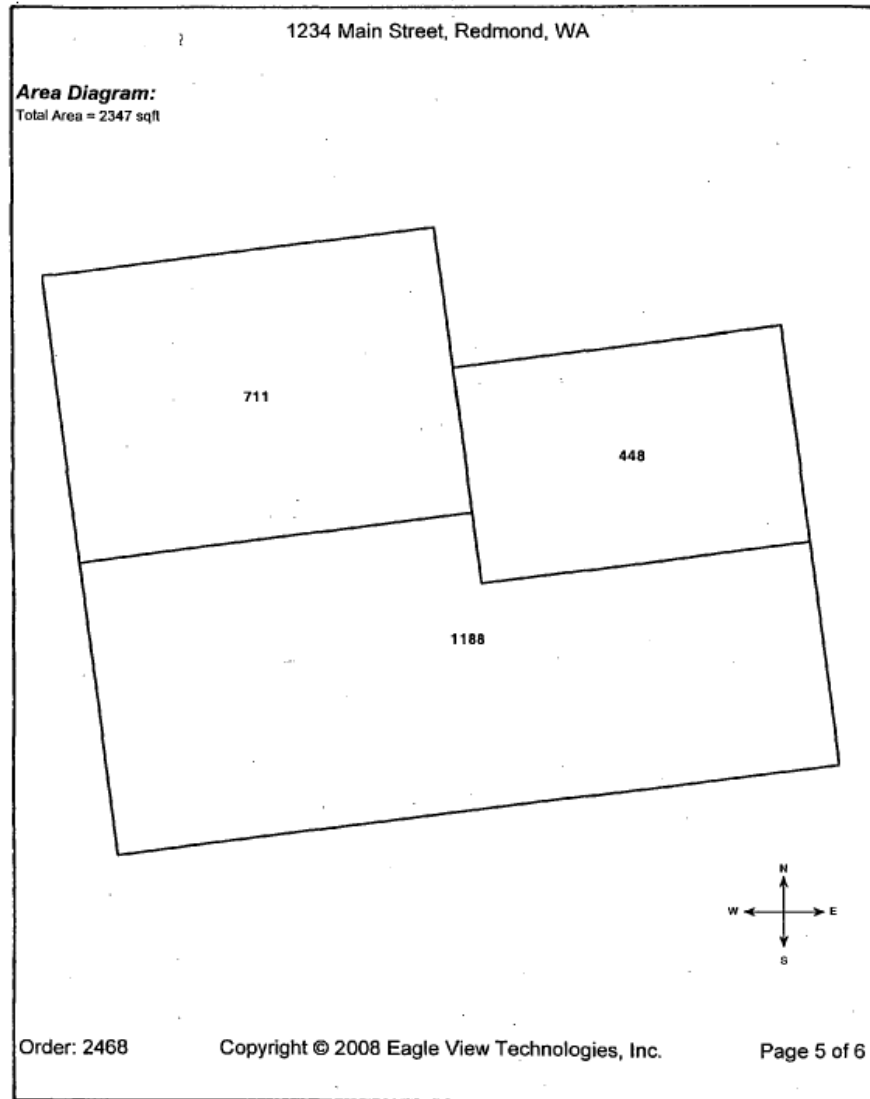
a) Petitioner’s Proposed Combination of Pershing-789 and Bailey

Petitioner relies on Pershing-789 for analyzing a roof’s image to identify the roof’s footprint and pitch and generating an estimate report. Pet. 6–8; *see id.* at 25–36. Petitioner relies on Bailey for teaching the claimed “predominant pitch” and for determining a roof’s area based on its footprint and predominant pitch. *See id.* at 31–34. Petitioner argues that one of ordinary skill would have been motivated to modify Pershing-789’s teachings with Bailey’s because “[i]ncluding Bailey’s predominant pitch would allow Pershing-789’s system to estimate roof area accurately with simplified calculations.” *Id.* at 21–22. Further, like Pershing-789, Bailey teaches a known, alternative way “to assess ‘needed level of repair’ of a roof.” *Id.* at 22 (quoting Ex. 1010, 1, 10).

Patent Owner challenges several aspects of Petitioner’s asserted combination. Prelim. Resp. 35–38. We address those issues below.

b) Footprint

Independent claims 1, 13, and 14 require determining a roof’s “footprint.” Ex. 1001, 15:25–27, 16:46–47, 16:62–67. According to Petitioner, “Pershing-789 teaches determining the claimed ‘*footprint*’ of the roof by drawing two-dimensional boundaries/outlines of roof sections,” as shown in Pershing-789’s Figure 5E. Pet. 28. Figure 5E is reproduced below:



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FIG. 5E

Figure 5E is an illustration from a report “showing the square footage of each roof section along with the total square foot area value.” Ex. 1004 ¶ 28.

Patent Owner argues that Pershing-789’s Figure 5E is not a footprint because “Figure 5E shows the total surface area of the example roof. But because the roof is pitched, the roof’s total surface area is not the same as and does not indicate the roof’s footprint, which is the roof’s outline or boundary projected on the ground.” Prelim. Resp. 26–27 (citation omitted).

On this record, we agree with Petitioner that Pershing-789's Figure 5E teaches the claimed footprint. As Petitioner notes, "the '538 patent teaches that the 'footprint may provide a two-dimensional boundary and/or outline of the roof.'" Pet. 28 (quoting Ex. 1001, 12:8–9). Figure 5E shows just that—a two-dimensional boundary and/or outline of the roof. Although we agree with Patent Owner that the roof's surface area and its footprint are distinct, that does not mean that Figure 5E is not a footprint simply because it includes corresponding surface area values. On this record, we agree with Petitioner that Pershing-789's Figure 5E teaches the claimed footprint. *See* Pet. 28–30.

c) Predominant Pitch

Independent claims 1, 13, and 14 require using a roof's "predominant pitch" in estimating the roof's area. Ex. 1001, 15:25–28, 16:46–49, 16:62–67. Petitioner asserts that Bailey teaches determining "predominant pitch" because Bailey "expressly teaches calculating the '*predominant slope*' of the roof" and explains "that '*slope*' and '*pitch*' are *equivalents*" as both describe the "'degree of incline' of a roof." Pet. 31 (quoting Ex. 1010, 17, 134).

Patent Owner asserts that Bailey's "predominant pitch" teaching is insufficient because it does not expressly teach "computing a weighted average of roof pitch values." Prelim. Resp. 31–33. We disagree with this argument because it is not commensurate in scope with the claims. Nothing in the claims' plain language limits predominant pitch to a weighted average. While the specification suggests that a weighted average is sufficient to teach the claimed predominant pitch, it does not clearly indicate that predominant pitch is limited to only a weighted average. *See* Ex. 1001,

12:11–39 (noting that “[t]he predominant pitch *may* be a weighted average of individual pitch factors” (emphasis added)). In addition, even if Patent Owner were correct that the claimed predominant pitch requires a weighted average, on this record Petitioner has explained why Bailey’s disclosure is sufficient. In particular, Petitioner presents evidence, unrebutted at this stage, that “[a] POSITA would understand that [Bailey’s] broad reference to a pitch calculation would include pitch weighted averages typically used in estimation.” *See* Ex. 1003 ¶ 43; *see also* Pet. 51–52 (citing Exs. 1003, 1013).

Patent Owner further contests Bailey’s “predominant pitch” teaching “because Bailey does not expressly teach performing a *calculation* to determine a predominant slope.” Prelim. Resp. 33. We disagree with this argument because it too is not commensurate in scope with the claims. The claims require “determin[ing]” a roof’s footprint, not calculating one. Ex. 1001, 15:25, 16:46, 16:65–67. Thus, it does not matter whether Bailey teaches calculating predominant slope. Given the Petition’s analysis, *see* Pet. 31–34, and for the reasons outlined above, we agree with Petitioner that Bailey teaches determining “predominant pitch.”

d) Ground 1 Summary

Other than as outlined above, Patent Owner does not additionally challenge Petitioner’s obviousness analysis at this stage. We have reviewed Petitioner’s arguments and the underlying evidence cited in support and are persuaded that, at this stage, Petitioner sufficiently demonstrates a reasonable likelihood of succeeding in its obviousness challenge to claims 1–5 and 8–13 based on Pershing-789 and Bailey.

2. *Ground 2: Obviousness based on Kennedy and Bailey*

a) *Petitioner's Proposed Combination of Kennedy and Bailey*

In an alternative unpatentability ground, Petitioner contends that claims 1–5 and 8–13 would have been obvious over Kennedy and Bailey. Pet. 61–89. Here, Petitioner relies on Kennedy for analyzing a roof's image to identify the roof's footprint and pitch, and on Bailey for teaching “predominant pitch,” determining a roof's area based on its footprint, and generating a report. *See id.* at 61–72. Petitioner's rationale for combining the references' mirrors its first ground. *Id.* at 61. Petitioner also explains that a skilled artisan would have included Bailey's report as a known way “to generate a report” reflecting the collected roof attribute data. *Id.* at 62.

b) *Footprint*

The only additional challenge Patent Owner raises for this ground is whether Kennedy teaches the claimed “footprint.” Prelim. Resp. 28. Petitioner corresponds Kennedy's ““sizing tool' that is superimposed on an aerial image” to the claimed footprint. Pet. 64. Figure 12 is reproduced below:

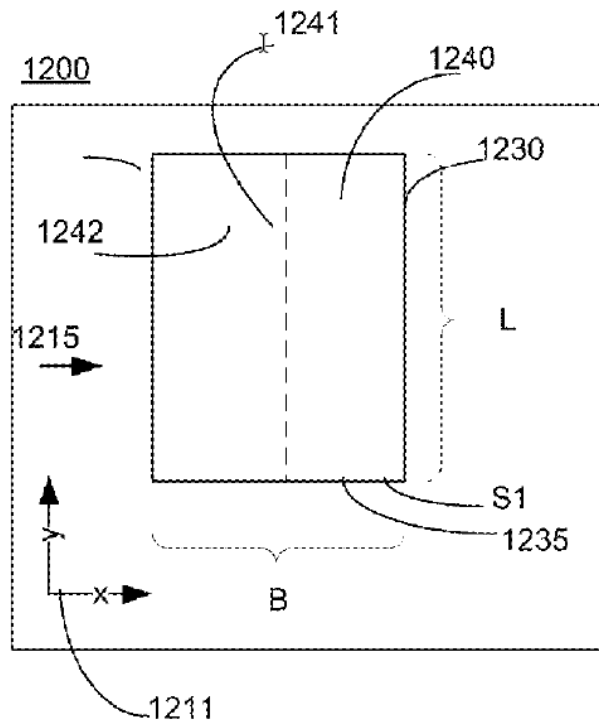


FIG. 12

Figure 12 is “a viewport displaying a top plan view of the measuring tool.”

Ex. 1009 ¶ 21. Patent Owner argues that Kennedy’s disclosure is insufficient because “as shown in Figure 12, the length (L) and width/base (B) are merely two sides of the example roof shown in Figure 12, and two sides alone do not define the boundary or outline of a roof.” Prelim.

Resp. 28. In addition, according to Patent Owner, “the claims require *determining* the footprint of the roof, not merely taking measurements that might be used to determine a footprint.” *Id.*

We disagree with Patent Owner’s argument because for a rectangular roof section like that shown in Figure 12, the two sides do define the outline or boundary (i.e., footprint) of the roof. In addition, Petitioner does not rely on “merely taking measurements,” as Patent Owner asserts. *Id.* Rather, as noted above, Petitioner relies on Kennedy’s sizing tool that is superimposed

on an aerial image. Pet. 64. On this record, for the reasons outlined in the Petition, we agree with Petitioner that Kennedy’s superimposed sizing tool teaches the claimed footprint. *See id.* at 64–66.

c) Ground 2 Summary

Other than as outlined above, Patent Owner does not additionally challenge Petitioner’s obviousness analysis at this stage. We have reviewed Petitioner’s arguments and the underlying evidence cited in support and are persuaded that, at this stage, Petitioner sufficiently demonstrates a reasonable likelihood of succeeding in its obviousness challenge to claims 1–5 and 8–13 based on Kennedy and Bailey.

3. Additional Obviousness Grounds

In its two additional obviousness grounds, Petitioner adds Abhyanker to its earlier grounds “to address the additional limitations of claims 6–7 and 14–18” including “allow[ing] users . . . to specifically designate the geographic position of a roof to be analyzed, and to include a subsequent user confirmation option to ensure that the correct roof is being analyzed.” Pet. 54–55, *see id.* at 83. Petitioner explains that one skilled in the art would have been motivated to add Abhyanker’s user inputs to promote the system’s accuracy and add convenience. *Id.* at 55–56, 84–85.

Other than as outlined above, Patent Owner does not additionally challenge Petitioner’s two obviousness grounds involving Abhyanker. We have reviewed Petitioner’s arguments and the underlying evidence cited in support and are persuaded that, at this stage, Petitioner sufficiently demonstrates a reasonable likelihood of succeeding in its challenges to claims 6, 7, and 14–18 based on Pershing-789, Bailey, and Abhyanker, and to those same claims based on Kennedy, Bailey, and Abhyanker.

III. CONCLUSION

After considering the evidence and arguments presented in the current record, we determine that Petitioner has demonstrated a reasonable likelihood of success in proving that at least one of the challenged claims of the '538 patent is unpatentable. We therefore institute trial on all challenged claims and grounds raised in the Petition. At this stage of the proceeding, we have not made a final determination as to the patentability of any challenged claim or as to the construction of any claim term. Any final determination will be based on the record developed during trial. We place Patent Owner on express notice that any argument not asserted in a timely-filed Response to the Petition, or in another manner permitted during trial, shall be deemed waived, even if that argument was presented in the Preliminary Response.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–18 of the '538 patent is instituted with respect to all grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the '538 patent shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

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