UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NICHOLSON MANUFACTURING LTD.,

Petitioner

v.

BID GROUP TECHNOLOGIES LTD.,

Patent Owner

Case PGR2025-00081

US Patent No. 12,163,947

PATENT OWNER'S PRELIMINARY RESPONSE PURSUANT TO 37 C.F.R. §42.207

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Petitioner, Nicholson Manufacturing Ltd., ("Petitioner") has failed to demonstrate that any of the challenged claims of U.S. Patent No. 12,163,947 (hereinafter the "'947 Patent") are "more likely than not" unpatentable. Bid Group Technologies Ltd. ("Patent Owner") respectfully requests that the Board deny the Petition.

I. INTRODUCTION

Petitioner has not carried its burden of demonstrating by a preponderance of the evidence that claims 1-18 of the '947 Patent are unpatentable. Indeed, there is no substantial new question of patentability.

The present is a preliminary response (37 C.F.R. § 42.207) to the Petition for post-grant review of the '947 Patent filed by Petitioner (see 35 U.S.C. § 323). The Petition should be denied and no trial should be instituted because the Petitioner did not demonstrate that "*it is more likely than not that at least one of the claims challenged in the petition is unpatentable*" (see 35 U.S.C. § 324(a) and 37 C.F.R. § 42.208(c)).

Noticeably lacking any anticipatory reference, Petitioner instead challenges claims 1-18 of the '947 Patent on three obviousness grounds under section 35 U.S.C. § 103, one ground under section 35 U.S.C. § 101 and one ground under section 35 U.S.C. § 112(b). Petitioner fails to articulate those grounds in any appreciable detail.

For example, Petitioner's obviousness arguments rely largely on testimonial evidence from someone who is not a person of ordinary skill in the art (hereinafter "POSITA"). Neither this testimonial evidence nor the references themselves disclose the real-time, log-by-log method and system for characterizing an undebarked log as required in challenged claims. For example, Ground 1 relies on art which uses **post-debarking** data to **predict** parameters for the next log. Ground 2 bases debarking parameter based on a species of wood, not on individual logs. Ground 3 merely attempts to combine Grounds 1 and 2 and continues to fail to address the need for real-time, individual log analysis. For all of its obviousness grounds, Petitioner fails to show why a POSITA would have been motivated to combine the asserted prior art. All of Petitioner's obvious grounds (Grounds 1-3) fail.

Petitioner's § 101 ground, Ground 4, also fails as seemingly based on Petitioner's own improper oversimplification of the challenged claims. The claimed method and system are not directed to abstract ideas, laws of nature or any natural phenomenon, thus failing the first part of the two-part *Alice* test. The challenged claims in the '947 Patent are also directed to an important inventive concept – allowing for automated, real-time operation of a debarker to specifically address the individual parameters associated with logs to be debarked, not averaged parameters

or post debarking guesses as done in the prior art. Petitioner's § 101 ground, Ground 4, fails.

Similarly, Petitioner's § 112 indefiniteness arguments for claims 7 and 8 take issue with well-known benchmarking standards where values are compared to predetermined parameters. Acceptable, pre-determined values are well known by a POSITA and Petitioner has failed to show otherwise. No challenged claims are indefinite, and Petitioner's Ground 5 fails.

As all of Petitioner's grounds 1-5 fail to show any challenged claim is more likely than not unpatentable, institution should be denied.

II. TECHNOLOGY BACKGROUND

The invention claimed in the '947 Patent was born out of research into ways of improving the debarking quality of logs when using a debarking machine. The debarking process refers to the removal of bark from any log without excessively removing the healthy underlying wood fibre. Excessive removal of the wood fibre will generate less yield for the wood in which decrease the profitability of a log. The industry aims to increase the debarking efficiency by having to remove all the bark with minimal loss for the wood fibre. However, individual logs may differ significantly with regard to many parameters, such as but not limited to diameter, humidity, and species. As such, prior to development of the present invention, there was no method to obtain good debarking efficiency without individually tuning the

debarking parameters for each log as described and claimed in the '947 Patent. At such time, various methods have been proposed to solve the problem with debarking efficiency including manual control and feedback system as mentioned in one of the prior art references. However, none of them propose a generalized solution to how each log can be debarked individually by adjusting specific parameters of the debarking machine based on that particular log.

As such, '947 Patent discloses a method of analyzing the log characteristics using machine learning system and to determined debarking parameters for a given log to optimize debarking process and to improve debarking efficiency.

III. LEVEL OF SKILL IN THE ART

Petitioner's assertion of a POSITA is that a POSITA "*would have a Bachelor's degree in Mechanical, Electrical, Computer, or Systems engineering, and at least two years of experience in the field of engineering programming. EX-1002 ¶¶ 26-27. Alternatively, a POSITA would have a Master's degree in any of the above fields. Id. The '947 patent is directed to the use of a deep learning AI model, and such a POSITA would have experience in the training and use of such a model. Id.*" Petition at 7.

Patent Owner disputes the asserted level of skill in the art. The Patent Owner submits that the Petitioner erred in establishing a POSITA without requiring any experience in the wood processing machines and in the wood processing industries

in general. While debarkers have been used in the United States for many years, such machines are highly specific to the area of wood processing and are not used in other industries. The knowledge of wood properties and of wood processing techniques are essential to understand the subtilities of processing wood logs and especially to remove bark from logs without scarifying precious fiber of the logs. Notably, Petitioner completely ignores the stated field of the invention. The '947 Patent makes clear the field of the invention is "the field of characterising an undebarked wooden log by deep learning AI models, upstream from a debarking device in order to adjust, in real time, said device and obtain an optimal debarking." Ex. 1001, col. 1:20-24.

As such, the Patent Owner submits that a POSITA would require at least 2 years of experience in the field of wood log processing machines or at least in the wood industry.

IV. THE DECLARATION OF DR. PAZZANI SHOULD BE DISREGARDED

The Petitioner uses their improper definition of a POSITA to rely on a declaration of Dr. Pazzani (hereinafter the "**Declaration**"). The Declaration presents the qualification of Dr. Pazzani and the material he considered. While Dr. Pazzani declares he has "*extensive experience in the areas of search engines, machine, learning, document classification and information retrieval, image classification, deep learning, and explainable artificial intelligence ("AI")*", he does not have any

background in the field mechanical engineering or of industrial machines and appears to have NO experience in the field of machines for wood processing or in the wood industry in general (see par. 8 of the Declaration). To that effect, the understanding of debarking machines only comes from conversations with employees at the Petitioner and from brochures and videos of debarkers in operation (see par. 29 of the Declaration). Such discussions occurred on August 21, 2025, thus only 8 days prior to signing the declaration. Thus, Dr. Pazzani may not be considered an expert in the field of mechanical engineering or of industrial machines, methods or systems for wood processing.

Besides not being a POSITA, the declaration of Dr. Pazzani should also be struck and disregarded because it largely just mirrors the Petitioner's argument without any further technical explanation or any new points of argument. That can also be said for the presentation of the background of the technologies at paragraphs 29-36 (debarkers) and 37-48 (artificial intelligence) which mirror the presentation found in the Petition. For example, Ground 1 (Pet. at 27-28 with Ex. 1002 ¶¶ 104-105), Ground 2 (Pet. at 45-46 with Ex. 1002 ¶ 173, and Pet. at 59-62 with Ex. 1002 ¶¶ 236-244), and Ground 3 (Pet. at 64-65 with Ex. 1002 ¶¶ 260-270, and Pet. at 69-71 with Ex. 1002 ¶¶ 305-312). Dr. Pazzani simply restates verbatim the Petitioner's arguments and conclusory statements that "*a POSITA would find it obvious to combine the prior arts*" without providing any reasoning to explain how such a

combination would be implemented or why a POSITA would have been motivated to combine. Under 37 C.F.R. § 42.65(a) and PTAB precedent, such conclusory and parroting testimony is entitled to little or no weight (see *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 12 (Feb. 10, 2023) "*I determine that the Board was correct in giving little weight to Petitioner's expert because the expert declaration merely offered conclusory assertions without underlying factual support and repeated, verbatim, Petitioner's conclusory arguments. See In re Ethicon, Inc., 844 F.3d 1344, 1348, 1352 (Fed. Cir. 2017) (concluding that the Board properly gave "little weight" to conclusory expert testimony of objective indicia); see also TQ Delta, LLC v. Cisco Sys., 942 F.3d 1352, 1359 (Fed. Cir. 2019) ("This court's opinions have repeatedly recognized that conclusory expert testimony is inadequate to support an obviousness determination on substantial evidence review"). The declaration does not provide any technical detail, explanation, or statements supporting why the expert determines that the feature in question was required or would have been obvious based on the prior art disclosure.*" (Also see *In re Ethicon, Inc.*, 844 F.3d 1344, 1348, 1352 (Fed. Cir. 2017) and *TQ Delta, LLC v. Cisco Sys.*, 942 F.3d 1352, 1359 (Fed. Cir. 2019).)

Furthermore, Dr. Pazzani did not provide rational providing why the POSITA would have been motivated to combine the provided references (see *In re Van Os*, 844 F.3d 1359, 1361–62 (Fed. Cir. 2017)).

As such, the Declaration should be discarded and disregarded from the Petition. Without reliable expert evidence, Petitioner has failed to meet its burden under 35 U.S.C. § 324(a).

V. THE BOARD SHOULD DECLINE TO INSTITUTE REVIEW

In a PGR, the Petitioner bears the burden to show that the information in the petition, if not rebutted, "would demonstrate that it is more likely than not that at least 1 of the claims challenged in the petition is unpatentable." 35 U.S.C. § 324(a). The '947 Patent has two independent claims, claims 1 and 11. Ex. 1001, col. 8:36-49; 9:23-10:13. Petitioner attacks the '947 patent on five different grounds.

The Asserted grounds of challenge are as follows:

No.	Ground	Challenged Claims
1	Gagnon, Kambla, knowledge of one of ordinary skill under § 103	1-4, 7-10
2	Gagnon, Ido, Petruzella under § 103	1-18
3	Gagnon, Kambla, Petruzella under § 103	1-18
4	Unpatentability under § 101	1-18
5	Indefiniteness under § 112	7-8

None of the asserted Grounds raise a substantial new question of patentability. Institution should be denied.

A. Ground 1: Petitioner Fails to Show that Kambla Teaches the "Predictive" Step of the Independent Claim 1, and that a POSITA Would Have Been Motivated to Combine Gagnon or Kambla.

The Petitioner contends that Claims 1-4 and Claims 7-10 of the '947 patent are obvious over International Publication No. WO 2013/188948 A1 to Gagnon et

al. (hereinafter "**Gagnon**") in view of U.S. Patent Publication No. 2019/0003829 A1 to Kambla et al. (hereinafter "**Kambla**") and the knowledge of a POSITA. Petitioner has failed to make a sufficient obviousness claim for Ground 1.

To establish the obviousness of claims 1-4 and 7-10, Gagnon and Kambla in combination must show that a POSITA would have been motivated to combine the post debarking timber volume estimation system of Kambla with the parameter adjustment of Gagnon to create the claimed system. Petitioner has not provided any valid reasons for combining the references, nor has petitioner explained how a POSITA would combine these references to result in the claimed method of analyzing the log characteristics using a machine learning system to adjust debarking parameters for each log before entering the debarking machine.

Gagnon is a feedback-based debarking system using debarking results identified on a log after bark is removed, thus downstream of the debarker. As such, Gagnon is configured to predict debarking parameters of an incoming log based on an already processed log downstream of the debarker. Such method may produce variable results when different types of logs are inputted in the debarker, because the incoming log may have completely different parameters than the log that was analyzed after debarking.

At paragraph [0049], Gagnon discloses the feedback system used to predict the parameters of a later log based on the most recently debarked log:

> Optionally, and as will be explained below in more detail in view of Figs. 25 to 27, the computer software may include a control module using information on fiber loss and residual bark as measured, to provide commands enabling the controller 67 to send through link 72 feedback control signals for the required debarker adjustments providing optimal performance in real time, on the basis of input data related to intrinsic characteristics of each log entering the debarker such as wood species information, mean log diameter, taper shape indicator, and environmentally influenced characteristics such as log surface temperature and moisture content, coming from other sensors or data entry means through link 83 (emphasis added).

As such, the data captured on the log exiting the debarking the system are used to parametrize the debarker for the next logs entering the system.

Kambla is a convolutional neural network (CNN) based system to determine the volume of a stack of logs view from the side or from a section of the logs after they have been debarked to assess the total volume of lumber available. The system comprises acquiring digital images of the stack end with a known reference dimension to determine the total volume of timber in the stack. The volume is determined by image analysis routines and overlying circles substantially coincident with each detected log end on the digital image. Kambla further discloses a programmable hand-held smart device, such as a mobile phone with a mobile operating system having a digital camera and allowing to capture a digital image of a stack of log ends. See FIG. 9 of Kambla, below.

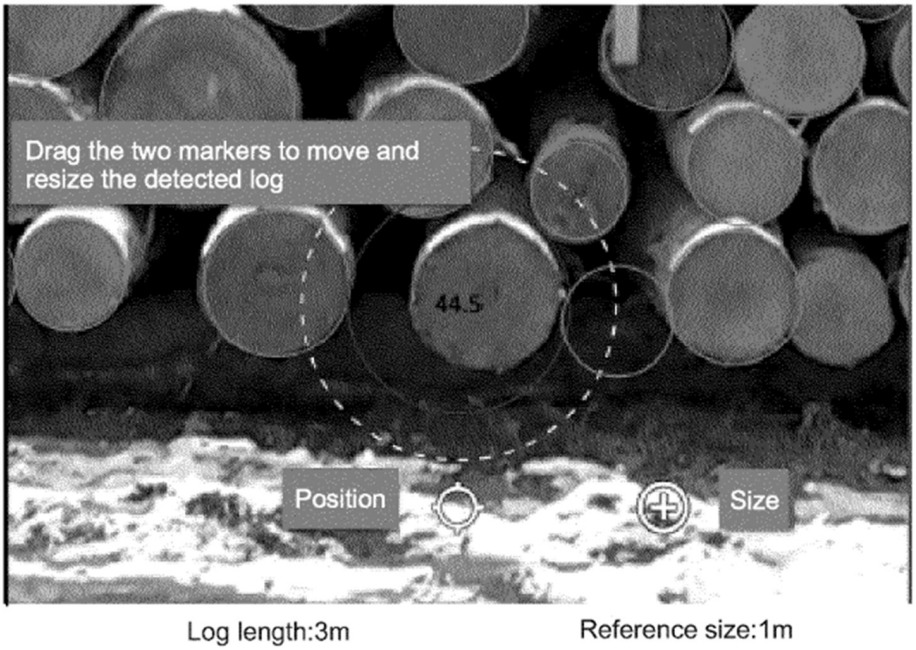


FIG 9

The Petitioner argues that a POSITA would find motivation to combine Kambla's image-based tree identification system and Gagnon's feedback-based debarking system to render Claims 1-4 and Claims 7-10 obvious (see pages 27 and 28 of the Petition) The Patent Owner admits that the debarking system disclosed by Gagnon measures the debarking quality of a debarked log to tune the subsequent logs though a feedback control system. The Patent Owner refers the to the following passage of Gagnon describing the method to optimize the debarking process:

> *i) measuring a three-dimensional profile of at least a portion of the surface of one of the logs to generate corresponding profile image data; ii) processing the profile image data by detecting vertical and horizontal edges of said profile image data with respect to a substantially longitudinal axis of the wooden log to generate data indicative of the texture of said log surface; iii)*

> *analyzing the texture data to generate resulting data on parameters related to the debarking quality of the log surface, said parameters including fiber loss and residual bark; and iv) controlling the debarking process* ***applied to a next one of the logs using the resulting data*** *(emphasis added).*

The invention recited at the claim 1 is a computer-implemented method for characterizing an undebarked log on a log by log basis in real time, identifying characteristics of the undebarked log based on the characterization of the undebarked log using a trained deep learning model, computing operating parameters of a debarker based on the identified characteristics and sending the computed operating parameters to the debarker. As such, a pre-debark CNN machine learning based analysis predicts the optimal parameters of the debarker before the logs enter the machine and applies the said optimized parameters to the log being process and not to the next log being processed.

No references cited by the Petitioner disclose or suggest feed-forward predictions. See *KSR Int'l v. Teleflex*, 550 U.S. 398 (2007) (requiring "articulated reasoning with rational underpinning"). Petitioner does not offer any articulated reasoning as to how a POSITA would obtain feed-forward predictions by combining the system of Gagnon to the log stack volume calculator of Kambla.

While Kambla discloses using images of a tree to detect defects or tree species, Kambla does not disclose nor suggest deriving debarking parameters from

this data. As such, a POSITA would not find any motivation to combine the feedback control system of Gagnon with the static classification system of Kambla.

Combining Kambla's static classification with Gagnon's feedback system would yield redundancy, not the claimed feed-forward control. Indeed, the resulting system would use the tree species identified by the model of Kambla within the feedback loop of Gagnon and as such could use said data to predict parameters for the next log and not for the current processed log.

The Declaration mentions at par. 105 that *"[a]lthough Gagnon discloses a camera at the output end of the debarker, Gagnon'1745, in my opinion, a person of ordinary skill would be able to construct a similar setup including a camera at the input end of the debarker*". A nearly identical assertion is made by the Petitioner at page 28 of the Petition. However, the Petitioner does not provide any reasoning as to why a POSITA would be able to construct a setup contrary to the main purpose of the system disclosed by Gagnon. The Patent Owner submits that motivation to combine demands a concrete rationale. Substituting CNN prediction for Gagnon's feedback loop would abandon the core feedback principal Gagnon teaches—contrary to its purpose of iterative adjustment.

Similarly, Gagnon explicitly relies on feedback after debarking (Ex. 1004 ¶ 16); thus, it *teaches away* from any real-time pre-debark prediction to establish parameters for the log to be debarked. See *In re Gurley*, 27 F.3d 551 (Fed. Cir. 1994).

The judge, in *In re Gurley*, stated the test for teaching away as "*[a] reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant. The degree of teaching away will of course depend on the particular facts; in general, a reference will teach away if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the applicant*." As such, as the line of development of the claim 1 is to determine the parameters of operation of the debarker upstream of to the debarking process and that Gagnon specifically teaches determination of the parameters downstream of the debarking process, as acknowledged by the Petitioner, the result of combining the system of Gagnon with the model of Kambla is very likely a non-productive avenue with regard to the method of optimization as claimed by the Patent Owner. Thus, as Gagnon teaches away the presently claimed invention, the claim 1 is inventive and patentable over Gagnon in view of Kambla.

Based on the principles of claim dependencies, as the claims 2-4 and 7-10 ultimately depend on the claim 1 and add well-defined features (sensor type, model training, parameter categories) that are neither shown nor suggested by Gagnon and Kambla, such claims are also inventive over Gagnon and Kambla.

Hence, the Petitioner has failed to meet its burden of establishing any challenged claim is "more likely than not" obvious in light of the combination of Gagnon and Kambla, and should be denied.

B. Ground 2: Claims 1-18 Are Not Obvious Based on any Combination of Ido, Petruzella and Gagnon.

The Petitioner contends that Claims 1-18 of the '947 patent are obvious over Gagnon combined with Junya ldo et al., *CNN-Based Tree Species Identification on Bark Image*, 10th Int'l Conf. on Graphics and Image Processing 2018 (hereinafter "Ido") and further in view of Frank D. Petruzella, Programmable Logic Controllers, chs. 1, 5, 6 and 15 (5th ed. 2017) (hereinafter "Petruzella"). Petitioner has failed to make a sufficient obviousness claim for Ground 2.

To establish the obviousness of claims 1-18, Gagnon, Ido, and Petruzella in combination must show that a POSITA would have been motivated to combine the post-debarking timber volume estimation system of Kambla with the tree identification system of Ido and the controller of Petruzella to create the claimed system. Petitioner has not provided any valid reasons for combining the references, nor has petitioner explained how a POSITA would combine these references to result in the claimed method of analyzing the log characteristics using a machine learning system to adjust debarking parameters for each log before entering the debarking machine.

Ido broadly discloses a CNN-based tree species identification method from bark image. Ido uses special input bark images in which a colorful tag is stuck on the bark. Ido uses CNN model to extract a ROI excluding the tag.

Petruzella is a general reference book about programmable logic controllers ("PLC") and the used programming languages for PLC.

The Petitioner states that Ido's machine learning tree species classifier could be combined with Gagnon' s debarking control and Petruzella's sensor system to predict debarking parameter prior to the debarking process. The Patent Owner respectfully disagrees.

The CNN-based method disclosed by Ido serves the sole purpose of species identification and it does not output debarking parameter nor give a prediction on the debarking parameter. Ido refers to a static method for identifying trees which in special images having colorful tag on the bark of the trees. Ido does not suggest nor infer using such method in a real-time system and is limited to determining only 6 species of wood. Implementing the method of species identification of Ido in the feedback-based debarking system of Gagnon would require multiple unexplained modifications. Indeed, Ido does not explain nor hint at how a POSITA could use the CNN-based tree species identification method to yield a successful algorithm that can predict the optimal parameters of a debarker. Ido focuses on taxonomy of tree species, which is outside of the field of debarker control. As such, a POSITA would

require ingenuity to first find the Ido reference given that such prior art is non-analogous to debarkers and to wood processing in general. Indeed, Ido is for different purposes (taxonomy of trees) and thus a POSITA would have less or non motivation or occasion to consider such prior art document. (See *In re Clay*, 966 F.2d 656 (Fed. Cir. 1992).) This is further supported by the fact that a POSITA having experience in the wood processing industry would fail to look at a reference discussing identification species of trees using colorful tags on static and living trees. Using colorful tags in an industrial wood process would not be considered a viable option as such tags would be detached from the trees during conveying or would be broken thus becoming unsuitable for identification.

Petruzella discloses the use of PLC in general but lacks any disclosure of AI and machine learning used in combination with a PLC.

None of the references bridges the gap between recognizing species, moisture level or other parameters of a specific incoming log and computing optimal debarker parameters for that specific log and applying the said parameters while debarking that specific log. The Petitioner also fails to show where any reference teaches a trained CNN machine learning system that analyze undebarked logs in real time to predict optimal parameters of the debarker before debarking operation. Indeed, none of Gagnon, Ido and Petruzella disclose or hint at such limitations. The Patent Owner also argues that the invention recited at claim 1 improves significantly the efficiency

of the debarking process and it is non-obviousness recognized in *Graham v. John Deere*, 383 U.S. 1 (1966).

Based on the principles of claim dependencies, as the claims 2-18 ultimately depend on the claim 1 and add well-defined features (sensor type, model training, parameter categories) that are neither shown nor suggested by Gagnon, Ido and/or Petruzella, such claims are also inventive over Gagnon in view of Ido and Petruzella.

As discussed above, the Petitioner has failed to meet its burden of establishing that any claim is "more likely than not" obvious in light of the combination of Gagnon, Ido, and Petruzella, and should be denied.

C. Ground 3: Petitioner Fails to Show Claims 1-18 Are Obvious over the Combination of Gagnon with Kambla and Petruzella.

The Petitioner contends that the claims 1-18 of the '947 patent are obvious over Gagnon in view of Kambla and Petruzella. The Petition namely considers that "*the system of Gagnon may include a "control module" to "provide commands" for debarker adjustment*." As such, the Petitioner considers that the feedback-based debarker of Gagnon may be combined with the static classification system of Kambla using a PLC as disclosed by Petruzella. Petitioner has failed to make a sufficient obviousness claim for Ground 3.

To establish the obviousness of claims 1-4 and 7-10, Gagnon and Kambla in combination must show that a POSITA would have been motivated to combine the post debarking timber volume estimation system of Kambla with the parameter

adjustment of Gagnon and the controller of Petruzello to create the claimed system. Petitioner has not provided any valid reasons for combining the references, nor has petitioner explained how a POSITA would combine these references to result in the claimed method of analyzing the log characteristics using a machine learning system to adjust debarking parameters for each log before entering the debarking machine. In fact, the addition of the controller of Petruzello adds nothing to the analysis above with respect to Ground 1. The Patent Owner refers the Board to the above arguments presented with regard to Ground 1 over Gagnon in view of Kambla. Indeed, the Petitioner is repeating Ground 1 and substitutes Petruzella for POSITA's knowledge asserting that a PLC as disclosed by Petruzella could be programmed to control the system of Gagnon using the static classification system of Kambla. The teaching of Petruzella does not provide any insight on how to modify the feedback-based system of Gagnon to calculate and apply parameters to the debarker based on real time analysis of the log to be processed. Indeed, Gagnon, Kambla and Petruzella still fail to provide an upstream method to optimize the parameters of the debarker based on the log at hand. While Kambla discloses a CNN machine learning system for identifying static volume of wood by taking picture of a cross-section of the log. A POSITA would not be motivated to use technology as it is well-known in the art that the end or cross-section of a log may not be used to identify the defects of the length of the log or identify any changes in diameter over the length of the log. As such, a

POSITA would not be motivated or would not have considered Kambla as the purpose is different (estimating the volume of a stack of wood logs). Furthermore, the analyzed logs are static and not moving within a wood processing line. As such, the Patent Owner submits that the asserted combination reconstructs a feedforward CNN system using hindsight bias only. See *Metalcraft of Mayville v. Torro Co.*, 848 F.3d 1358 (Fed. Cir. 2017) (hereinafter "Metalcraft"). The Judge in Metalcraft states: "*We agree with the district court that Toro provides no explanation or reasoning for concluding that one of skill in the art would have combined these particular references to produce the claimed invention. Without any explanation as to how or why the references would be combined to arrive at the claimed invention, we are left with only hindsight bias that KSR warns against. See KSR, 550 U.S. at 421. And while we understand that "[t]he obviousness analysis cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation," we also recognize that we cannot allow hindsight bias to be the thread that stitches together prior art patches into something that is the claimed invention. See KSR, 550 U.S. at 419, 21. For these reasons, we conclude that the district court did not abuse its discretion in rejecting Toro's obviousness defense and determining that Toro did not raise a substantial question of validity*".

Indeed, the Petitioner does not provide any explanations as to how the combination of the feedback system of Gagnon with the CNN model static analysis

method of Kambla and a PLC controller of Petruzella could be combined to arrive to a feedforward system as recited in the claim 1.

Based on the principles of claim dependencies, as the claims 2-18 ultimately depend on the claim 1 and add well-defined features (sensor type, model training, parameter categories) that are neither shown nor suggested by Gagnon, Kambla and/or Petruzella, such claims are also inventive over Gagnon in view of Kambla and Petruzella.

The Petitioner in Ground 3 offers no additional disclosure beyond Ground 1-2 and still omits the claim-critical feature of pre-debark CNN machine learning predictive model. It therefore fails under 35 U.S.C. § 103.

As discussed above, the Petitioner has failed to meet its burden of establishing any challenged claim is "more likely than not" obvious in light of the combination of Gagnon, Kambla, and Petruzella, and should be denied.

D. Ground 4: Petitioner Fails to Show Claims 1-18 Are Directed to an Abstract Idea and Are Unpatentable Subject Matter Under 35 U.S.C. § 101.

The Petitioner relies on the Supreme Court's ruling in *Alice Corp. v. CLS Bank International, 573 U.S. 208 (2014)* (hereinafter "Alice") to suggest that the Patent Owner only incorporated a generic AI model into the operation of a debarker machine and to consider the claims 1-18 as being directed to an abstract idea and being non-patentable subject matter. The Patent Owner strongly disagrees.

The Petitioner relies on the two-step test from Alice and to the recent decision of *Recentive Analytics, Inc. v. Fox Corp., 134 F.4th 1205, 1212 (Fed. Cir. 2025)* (hereinafter "Recentive"). In such case, the question at stake was "*whether claims that do no more than apply established methods of machine learning to a new data environment are patent eligible*" (Recentive, p. 10). In Recentive, the court mentioned that the patents "*rely on the use of generic machine learning technology in carrying out the claimed methods for generating event schedules and network maps*." As such, Recentive was trying to patent the use of machine learning technology into a software method which was considered abstract. Furthermore, Recentive was considered as disclosing the use of machine learning in a new environment of event scheduling and the creation of network maps.

In the '947 Patent, the use of machine learning is not contended to a new use but, as discussed above, is used to allow real-time calculation of debarking parameters of any incoming log and to apply the said parameters to the debarker which physically remove bark from the processed log. As such, the Patent Owner respectfully submits that such case does not apply to the '947 Patent.

The Patent Owner submits that the presently claimed invention is not directed to an abstract idea as, contrary to the Petitioner pretentions, alter the debarking process by applying specific parameters for every incoming log that is processed by the system. As such, the parameters are modified based on each and every log and

not based on average values of prior logs having been processed by the debarker as described by Gagnon.

Also, the claimed method acquires physical sensor data for characterizing passing logs, applies a trained CNN to such characterization data, and *adjusts machine actuators*—a quintessential industrial process. Unlike pure data manipulation, the output changes the physical state of a machine. See *Diamond v. Diehr*, 450 U.S. 175 (1981).

Furthermore, the Patent Owner respectfully submits that, contrary to the pretentions of the Petitioner, the claims provide the specific improvements to a method and system of optimizing the debarking process. Indeed, the identification of characteristics of the undebarked log based on characterization of the undebarked log using a trained deep learning model is recited and the retrieval of operating parameters associated with the identified characteristics are recited. Such steps, amongst the other claimed steps define the specific improvement of a method using characteristic of the log to be fed to the debarker and the retrieval of specific operation parameters of the debarker to provide removal of the bark specific to the processed log. As such, the claims 1-18 shall be considered as being patentable subject matter.

The Petition further applies the step two of the test and contends that the claims do not transform the nature of the claim into a patent-eligible application. The

Patent Owner respectfully disagrees. In the alternative where the claims shall be considered as being directed to an abstract idea, which is denied by the Patent Owner, the Patent Owner submits that the claims transform the claim into a patent-eligible application.

As submitted by the Petitioner, "*the claim must include an inventive concept sufficient to transform the claimed abstract idea into a patent-eligible application*." Id at 1215 (*Alice* quoting *Trinity, 72 F.4th at 1365 (Fed. Cir. 2023)*. The Patent Owner refers the board to the above argument explaining how the claimed invention includes an inventive concept of optimizing the parameters of operation of the debarker in real-time using machine learning, which was unknown of at the time of filing. The Patent Owner thus submits that the step 2 of the test also hints at patentable subject matter.

The prior art does not offer a method to debark if the given batch of logs is inconsistent. In fact, if the characteristics between the in-coming log is too different from the previous log, the prior system will ultimately produce a worse debarking quality due to the adjustment in debarking parameter. This problem is solved in the current invention where individual log is characterized, and the parameter input is optimized using the CNN machine learning system in real-time. The concept of applying AI to optimize the debarking parameter is not mentioned anywhere in the cited prior arts and it directly improves the debarker and the debarked log quality.

Federal Circuit precedent (*McRO v. Bandai*, 837 F.3d 1299) confirms that claims improving a specific technological process via rule-based or AI models are patent-eligible. The '947 patent is directly analogous.

The claims are narrowly limited to CNN-based prediction for log-debarking equipment, leaving other AI uses unaffected which oppose no risk of preemption.

Claim 2-18 specify particular sensors, CNN architectures and types of parameters, further tethering them to concrete hardware implementation rather than an abstract idea. Hence, the claims 1-18 are patentable.

As discussed above, the Petitioner fails to establish that the subject-matter of claims 1-18 is unpatentable and the Petition should be denied.

E. Ground 5: Petitioner Fails to Show Claims 7 and 8 Are Indefinite under 35 U.S.C. § 112(b).

The Petitioner contends that the claims 7-8 of the '947 patent are indefinite under 35 U.S.C. § 112(b) because the "predetermined value" used for the CNN system is "[w]hat that predetermined value should be".

More specifically, the Petitioner considers that "*claim 7 is indefinite because it recites, "considering the deep learning model trained if the identification score is different from a predetermined value" without providing guidance on what that predetermined value should be.*"

The Patent Owner argues that for a POSITA would know given the context of CNN system and debarking of wood, the exact sets of predetermined value to use

given the specific application and needs. Hence, the exact and absolute value of those predetermined value is not required. (*Nautilus v. Biosig Instruments, 572 U.S. 898 (2014)* at 910).) The Supreme Court mentioned that "*cognizant of the competing concerns, we read §112, ¶2 to require that a patent's claims, viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty. The standard adopted here mandates clarity, while recognizing that absolute precision is unattainable. It also accords with opinions of this Court stating that "the certainty which the law requires in patents is not greater than is reasonable, having regard to their subject-matter. Minerals Separation, Ltd. v. Hyde, 242 U. S. 261, 270. Pp. 8–11.*" As such, as the predetermined value may be different depending on the level of precision or of reliability required by the operator of the debarker. As such, "*if the identification score is different from a predetermined value*" at claim 7 achieves the level of reasonable certainty as a POSITA may use a range of predetermined values based on the different goals to be achieved in term of wood processing.

Accordingly, the Claims 7-8 are definite under § 112(b). As such, the Petitioner fails to establish that the claims 7-8 are indefinite and the Petition should be denied.

VI. CONCLUSION

For at least the reasons discussed above, Patent Owner respectfully requests that the Board decline to institute PGR2025-00081.

Respectfully submitted.

Dated: December 10, 2025

/R. Scott Johnson/
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Reg. No. 45,792

Counsel for Patent Owner Bid Group Technologies Ltd.

CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24 (b)(1), the undersigned hereby certifies that the foregoing Patent Owner's Preliminary Response contains 6,156 words, excluding parts of this Preliminary Response exempted under §42.24(a)(1), as measured by the word-processing system used to prepare this paper.

Dated: December 10, 2025

/R. Scott Johnson/
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CERTIFICATE OF SERVICE

Per agreement of the parties and pursuant to 37 C.F.R. ¶ 42.6(e)(1), the undersigned certifies that a copy of this Patent Owner's Preliminary Response to Petition was served on December 10, 2025, electronically via email on the following:

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