

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 No. PGR2025-00081

Patent No. 12,163,947

**DECLARATION OF ALAIN GINGRAS IN SUPPORT OF BID
GROUP TECHNOLOGIES LTD.'S RESPONSE TO THE
PETITION FOR POST GRANT REVIEW**

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I, Alain Gingras, being over the age of 18 and competent to make the statements herein, hereby declare the following:

1. I am a citizen of Canada and reside in Levis, Quebec.
2. I have been retained by BID Group Technologies Ltd. (“BID Group”) to provide my opinion as an industry expert on the implementation, use, and effects of the technology described in U.S. Patent No. 12,163,947 (“the ‘947 Patent”) to provide my independent expert opinions in this matter.
3. I understand that the U.S. Patent Trial and Appeal Board (the “Board”) has instituted post-grant review (“PGR”) of claims 1 to 18 (the “Challenged Claims”) of the ‘947 Patent.
4. I make this declaration in support of BID Group’s Response to Nicholson Manufacturing Ltd.’s (“Nicholson”) Petition based on my personal knowledge, education, experience, and training.
5. I am being compensated for my time at \$150 per hour. I have no business interest in Nicholson or in BID Group, which I understand to be the owner of the ‘947 patent.
6. I am competent to make this declaration and, if called to testify, could and would do so.

I. BACKGROUND

7. I summarize my educational background and career history in the following paragraphs.
8. I hold a Bachelor in Mechanical Engineering (BsA) from Université Laval, obtained in 1984. In 1992, I completed professional training at Concordia University focused on set-up reduction and preventive maintenance. Additionally, I have completed graduate-level coursework (6 credits) in Industrial Engineering at Université Laval.
9. I have over 40 years of practical experience in the wood transformation industry, with specialization in sawmill equipment and operation, mechanical systems, and cutting tools.
10. Since 2020, I have operated as a Self-Employed Consultant, providing technical expertise in machining, plant modeling, and the modernization of equipment and material handling systems.
11. From 1996 to 2019, I served as a Sawmill Technical Advisor for FPIInnovations. During these 23 years, I provided on-site technical support to mills owned by members of FPIInnovations, specializing in mechanical analysis and the optimization of sawmill

systems and cutting tools. My work involved promotion and development of technologies to improve mill efficiencies.

12. Early in my career, I held several key engineering positions that provided me with direct, hands-on experience with industrial machinery. In 1996, I served as a Project Engineer designing material handling systems at Maxi-Tour Incorporated. From 1994 to 1995, I managed sawmill and planning mill projects for Gérard Crête et Fils Inc. From 1989 to 1994, I was a Plant Engineer for Donat Flamand Inc. responsible for new-plant start-ups, including the design and installation of mechanical systems related to wood processing. From 1984 to 1989, I served as a Project Engineer in the Sawmill Division of Donohue St-Félicien Incorporated.

II. SCOPE OF OPINION

13. I have been retained for this matter due to my practical knowledge of the physical and mechanical requirements of wood processing machines, including debarking machines.
14. In forming my opinions, I have reviewed the '947 Patent, Nicholson's Petition, and BID Group's Response. However, these opinions primarily are formed based upon first-hand observation of BID Group's machine, the Bark Scanner, which practices the invention of the '947 Patent. I have also spoken with the operators of the Bark Scanner.
15. I have been asked only to provide my independent opinions and analysis of the issues I specifically discuss in this declaration. I note that the Petition, including the evidence it cites, appears to refer to other issues regarding which I have not been asked to provide my opinions.
16. I am not an attorney, and I have not independently researched the law on patentability.

III. PERSON OF ORDINARY SKILL IN THE ART

17. I understand that Nicholson alleges a person of skill in the art would have a Bachelors Degree in Engineering alone and no experience in wood processing is necessary. I disagree. A bachelors in engineering alone would not provide an individual with enough knowledge to accurately engage in the design of a debarking machine, as it is critical to understand the complexities associated with the identification of wood species and the impact of species, log characteristics, and environment on the debarking process. As a result, I agree with Dr. Rubin Shmulsky definition of a person of ordinary skill in the art.

IV. THE DEBARKING PROCESS

18. Debarking is a key industrial process consisting of removing the outer layer of a log, specifically the bark (inner and outer) and a portion of the cambium layer.
19. The primary objective is to produce debarked logs for lumber manufacturing and by-products. Woodchips, resulting from the debarking process, are a by-product essential for most mill profitability and the bark proportion in wood chips is strongly assessed.
20. The efficiency of this debarking process directly influences a sawmill's profitability:
 - a. Bark contains high levels of silica, which quickly deteriorates saw blades if not removed before primary breakdown. If excess bark remains after debarking, the tools within the mill will deteriorate more rapidly, requiring excess repairs and potentially creating downtime at the mill.
 - b. An optimal debarking process must minimize fiber loss. Removing too much healthy wood fiber, which is under the bark, reduces volume yields and results in significant financial loss.
 - c. If the bark remains after the debarking process, it may contaminate the final lumber products and woodchips/sawdust products. If the level of bark in the woodchips/sawdust is higher than 1 to 5 percent, the entire shipment is likely to be rejected by the purchaser, resulting in significant financial loss.
21. Critical Variables (Intrinsic and Environmental) : Debarking is a complex task because bark adhesion strength varies based on several intrinsic and environmental variables:
 - a. **Moisture Level.** Moisture content is considered the most important factor in adhesion strength. Increased moisture generally provides for greater ease or less force in debarking.
 - b. **Species.** Different wood species have unique characteristics; for instance, black spruce is generally easier to debark than balsam fir in winter conditions.
 - c. **Thermal State.** Frozen logs require significantly greater debarking force than thawed logs.
 - d. **Physical Attributes.** The diameter, taper, curvature, and knots on the log affect the mechanical interaction of the log with the machine.
22. When sawmills receive logs, they sometimes contain a variety of mismatched characteristics, such as different species, humidity levels, and sizes. Previously, sawmills

had to manually sort wood logs upstream of the debarker, which was demanding, costly, and time consuming.” ’947 Patent at 1:67-2:6. Many sawmills were “pushed to their operational limits” because “log characterizing and debarking is required to be as fast as possible while simultaneously maintaining an acceptable debarking quality for operational and financial benefits and requirements.” *Id.* at 2:6-11.

23. There are multiple categories of debarking machines which are used dependent upon the production requirements:

- a. A rotary ring debarker, such as the Nicholson A5B, is the most common type. Logs are fed through a rotating ring equipped with pivoting knife arms which removes the bark.
- b. Drum debarkers involves a large rotating drum and is used for processing logs in batches through the use of friction.
- c. Rosserhead debarkers employ a rotating cutter head that moves along the length of a spinning log.

24. The ring debarker is the most popular type in sawmills as it allows for high throughputs. These sophisticated machines must be very robust yet as gentle as possible to avoid breaking the logs, even slightly.

25. Innovations within the debarking field have revolved around handling systems—centering the logs prior to processing or providing a more robust grip without breakage—to improve efficiency, around new materials for knives and rotating arms to improve durability and precision, or around more adaptable controls such as pressure control which compensate for impacts.

26. However, innovation within the debarking field is limited and not much has changed overall in the past decade or two.

27. The Bark Scanner solved a long-felt but previously unmet need of reducing the need for strategies like the pre-sorting of logs by characteristics and then reprogramming the debarker for each group based upon the characteristics. Rather, the Bark Scanner characterizes and selects the ideal debarking settings for each individual log removing any need for pre-sorting and the potential for human error in the sorting process.

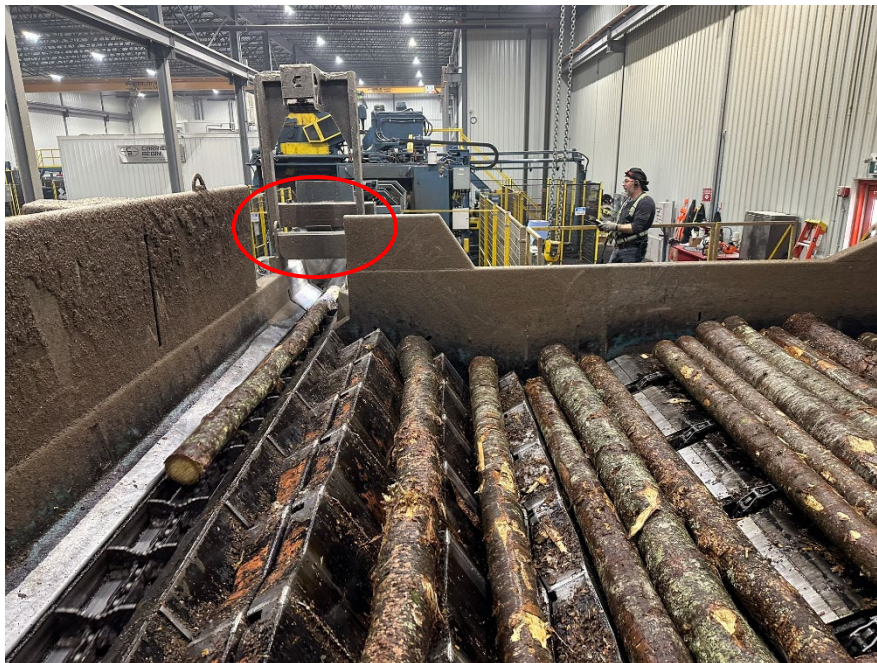
V. DEVELOPMENT OF BID GROUP’S AI PRODUCTS

28. I spoke with Pierre Faucher and Francis Clement regarding BID Group's development of artificial intelligence products and the reduction to practice of the '947 Patent.
29. BID Group designed the SpecPro product in 2019, which used color images and AI to identify the wood fiber on the flat surfaces of clean-cut boards. The boards are moved through a scanner with multiple cameras using a transverse scanning software. The Spec Pro uses the images to generate the species of the wood as a classification criterion. *See* Ex. 2036.
30. The SpecPro could not be used to evaluate debarked logs. The SpecPro faced significantly fewer issues scanning and identifying boards in a trimmer—flat, clean, cut to their fibers, and in a stable environment— than debarked logs.
31. BID Group began to discuss the creation of a similar scanner for use on debarked logs, but the problems faced were significantly more challenging. When a log arrives to the mill, the logging process has often abraded, sliced, or dirtied the bark on the log changing the physical appearance from the original tree. Further, the log may be wet, covered in snow, or iced. Further, the cameras would need to analyze not a flat surface, but the rounded, uneven surface of a log. Mr. Clement informed me that he did not have much optimism for success originally.
32. The first prototype of the Bark Scanner, which practices the '947 Patent, was developed in the fourth quarter of 2020.
33. The Bark Scanner uses linear scanning to produce color images of the rounded surfaces of logs. These color images are then processed through artificial intelligence to assess the ease of debarking by providing information on the tree species and the freshness of the wood. This information is then used to identify and immediately adjust to the proper operating parameters for the bark removal process.
34. The benefit of the system is that each log can be debarked optimally according to various conditions. The Bark Scanner greatly alleviates the task of maximizing bark removal while minimizing fiber loss. This is a pivotal element in maintaining profitability for many sawmills.

VI. INSPECTION OF THE BARK SCANNER

35. I understand from my discussion with Francis Clement that three sites currently have a Bark Scanner in operation.

36. I personally inspected a Bark Scanner in use at Carrier Bégin Inc (“Client”) facility located at 484 Rte Grand Shenley, Saint-Honoré-de-Shenley, QC Canada on April 17, 2026. The Client has used the Bark Scanner since 2023. A representative of the Client, Frédéric Quirion, informed me as to how the Bark Scanner is used in Client’s sawmill.
37. The following images were taken with my personal camera throughout the inspection. The red circle added to the images indicates the position of the Bark Scanner.
38. Logs that are ready to begin processing are mechanically placed one at a time onto a conveyor belt:

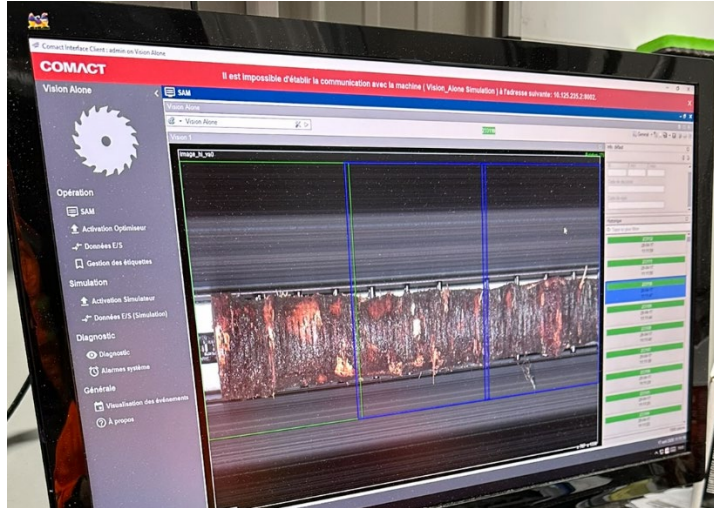


39. The conveyor belt passes under the Bark Scanner machine.



40. The Bark Scanner collects three images using linear scanning along the surface of the log.





41. The artificial intelligence algorithm has been trained to detect the wood characteristics, including the species, based upon each of the three photos individually. The results of the three photos are compared by the system and, if at least two out of three results appropriately match, the system identifies the species.
42. This Client processes a mix of Spruce, Pine, and Fir trees. After identification has occurred by the Bark Scanner, a light indicative of the species detected is illuminated above the control panel to allow for human validation of the results, if needed. For example, if the Bark Scanner determines the tree to be a Fir tree, the green light would illuminate. Relatedly, if the system could not identify the species, the red light would illuminate indicating an error to the human operators being present.

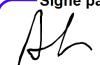


43. Beyond species alone, the Bark Scanner is able to determine moisture content from the images along with any abrupt changes in shape which may pose a risk to the machinery or debarking quality of the machine.
44. After the moisture and species has been detected, the Bark Scanner selects debarking parameters from an index table which match the detected characteristics. Through the programmable logic controller, the parameters are communicated to the debarking machine prior to the analyzed log entering the debarker.
45. The Client reports that the Bark Scanner has been approximately 96% accurate in identifying spruce, fir, and pine samples.
46. Identification of the species has been specifically helpful for this Client, who processes a wide and non-homogenous population of wood. As an example, white spruce in spring (non-frozen) temperatures can create long, stringy bark that often jams the debarker. By assessing the presence of white spruce in the conveyor belt and selecting a specific set of parameters for this stringy spruce, the Client has faced less downtimes and repairs of the debarking machine.
47. As the penalties for excess bark content in wood chips greatly reduces a sawmill's bottom line, maintaining targeted contents of bark in chips in extreme low temperatures is what all sawmills aim for. Due to the species-specific approach, the client is able to sell more chips with less bark content, increasing profitability.
48. No other product in the prior art, based upon my years of experience working within the lumber and forestry industry, had the ability to detect wood characteristics such as wood species and select ideal operating parameters *prior to* debarking. In fact, to this day, I am unaware of any other product on the market which has this combination of features.
49. The combination of these features has significantly improved debarking quality of log, increasing profitability of chip sales and reducing labor requirements to run a sawmill.

VII. CONCLUSION

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Dated: 5/13/2026

Signé par :


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Alain Gingras