

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TOUGHBUILT INDUSTRIES, INC.,
Petitioner,
v.
MERIDIAN INTERNATIONAL CO., LTD.,
Patent Owner.

Case IPR2025-01461
Patent 11,986,946

**DECLARATION OF GLENN E. VALLEE, Ph.D., P.E. REGARDING THE
“IRWIN COMPANY” MATTER AND SEARCHES**

I, Glenn E. Vallee, Ph.D., P.E., hereby declare as follows:

I. INTRODUCTION

1. I have been retained as an expert witness on behalf of Patent Owner Meridian International Co., Ltd. (“Meridian”) in the above inter partes review (“IPR”).

2. I submitted an expert declaration in this matter on May 20, 2026. (**Exhibit 2012**).

3. I was also deposed in this matter on July 16, 2026. It is my understanding that a transcript of that deposition has been introduced in this matter as **Exhibit 1047**.

4. I have read Petitioner’s July 16, 2026 email to counsel for Meridian (**Exhibit 2023**),¹ Meridian’s July 21, 2026 letter responding to Petitioner’s letter, (**Exhibit 1046**), Petitioner’s Opposition to Patent Owner’s Contingent Motion to Amend (“Opposition,” Paper 29), and the Board’s Preliminary Guidance (Paper 33).

5. I understand that the Board has asked Meridian to provide a statement of the scope of its search for relevant documents concerning what it has referred to as the “Irwin company” matter.

¹ Filed contemporaneously with this Declaration.

6. I have been asked to provide this declaration to accompany Petitioner's Statement and to respond to portions of the Opposition and Preliminary Guidance.

II. THE "IRWIN COMPANY" MATTER

7. My expert declaration disclosed work that I performed years ago as part of a course that I taught for the University of Rhode Island:

As an Assistant then Associate Professor of Mechanical Engineering, I served the university from 2002 to 2025 and taught courses in Mechanical Design, Materials Science, Kinematics, Vibrations, Mechanics of Materials, and a Product Development and Innovation (PDI) course where students design consumer products having commercial potential. Six utility patents have been issued for student inventions developed in the course, and many products developed were related to the DIY and Industrial markets, *including a stackable transportation system for tool storage containers.*

(Exhibit 2012, ¶ 2 (emphasis added).)

8. To clarify, my reference to the "many products developed" in this paragraph refers to student prototypes developed during the course and is not meant to imply that all of these product designs became commercially sold products.

9. This work, which has been referred to as the "Irwin company" matter by the Board in its Preliminary Guidance (Paper 33), was performed in 2012.

10. This, however, is a misnomer. My testimony was that "I believe[d]"

that the project was performed for the Irwin Company (**Exhibit 1048**, at 34:1-3), but that it may have been performed for Lenox, and not Irwin (*id.*, at 38:4-6), and that I would have to go back to my records to see who owned what at the time (*id.*, at 43:7-19). Thus, the project may have been performed for Lenox or Irwin. I have, however, referred to it as the “Irwin company” matter throughout in order to use language consistent with the Board’s decision.

11. During my deposition in IPR2025-01462 on July 14, 2026, counsel for Petitioner asked me a number of questions about this system.

12. I testified that this was a product design developed by students for the Irwin Company, and described it as “a transportation, a wheeled transportation system where the containers can be stacked, they had features on the top and bottom of the container so they could be interlocked so they don't move. And they were all latched together with a system that basically wrapped around them and tightened them. And then locked them onto the wheel system so they could be moved around the worksite without flipping over.” (**Exhibit 1048** at 38:11-20.)

13. In response to questions from counsel for Meridian, I testified that the latches I previously designed or worked with – including the “Irwin company” product design – were not relevant prior art:

Q Okay. Earlier in the day Counsel asked you about -- a number of questions about other latches that you have designed or worked with, correct?

A Correct.

Q And Counsel asked you if those latches were relevant to this case, correct?

A Correct.

Q Would you consider those latches to be relevant to this case in terms of your understanding of the design process for latches generally?

A Yes. I listed a lot of the things, as I recall, of why I thought they were applicable to this case in particular.

Q Would you consider those latches to be relevant to this case in terms of design considerations that one might want to keep in mind for a latch that was going to be used in a consumer product?

A Yes, I would.

Q Would you consider any of those latches to be a relevant prior art to the patent in this case?

A No.

(**Exhibit 1048** at 217:5-218:7.)

14. That is because, as was expressed in **Exhibit 1046**, “the described

system connected containers to each other via a nesting system, but the only latching mechanism disclosed was a strap that wrapped around and connected multiple containers at once to a wheel system, not one that individually connected container to container.”

15. Indeed, the '946 patent does not claim a strap that wraps around multiple containers, but rather claims a specific locking structure, which is why the “Irwin company” design is not relevant prior art to the '946 patent.

16. In addition, although the '946 patent does describe a nesting system in dependent claims 14 and 16, such a nesting system was described in U.S. 2021/0221561 (“Davidian,” **Exhibit 1011**), art cited by Petitioner in this proceeding, and therefore the “Irwin company” product would be – at best – cumulative of this art.

17. I understand that Petitioner’s counsel represented to the Board in its Opposition that Irwin was planning to move forward with the product (Paper 29, p. 24), leading the Board to believe that it was an “apparent new product” (Paper 35, p. 24.) Petitioner’s representation does not accurately reflect my testimony or any other evidence. What I stated during the deposition was:

Again, after we presented it to the company, I don't know if they ever took the idea and ran with it. Because I think the company may have

been sold again afterwards. I'm not sure, but I do know they were very impressed with the design and they informed us that they were going to move forward with it.

So I don't know if they ever did or not.

(Exhibit 1048, at 42:20-43:6.)

18. I am not aware of any written materials that were saved by myself or the university that describe the “Irwin company” design, and believe that if any such materials existed, they would likely be subject to confidentiality provisions, which I recall applying to these types of projects.

19. During my deposition in this matter, I made clear to counsel that, to the extent that documentation regarding the “Irwin company” design ever existed, I was not in possession of such materials:

Q Do you have documentation or a website that describes that?

A I personally don't. It generally was kept. There was a university website that we keep these things but I'm not sure it is even still there. They changed systems and generally they don't keep things over a certain number of years. I don't have it. I don't even know if the university still has it.

(Exhibit 1047, at 36:2-11.)

20. When I referred to a “website,” in the above testimony, I was

referencing a private electronic university document storage system, and not a publicly accessible website.

21. During my deposition in IPR2025-01462, I also notified counsel for both sides that I would not be able to look further into the “Irwin company” matter immediately due to my deposition later that week in this IPR, my travel from the deposition, and additional business travel that was already scheduled for the following week:

MS. HALSEY: So before we go back on, I want to touch base briefly. We talked, during the break, a little bit about the testimony regarding Irwin. And Dr. Vallee doesn't know if there's any sort of confidentiality agreement in place related to those materials.

Out of an abundance of caution, I would like for us to treat that portion of the transcript as confidential while we investigate that.

MS. HAAPALA: That's fine. Ms. Halsey, how long do you think it will take? Because I imagine it will take us some time to get the transcript and the record anyway.

MS. HALSEY: That's a good question. Dr. Vallee is here, you know, through the week. So it will probably take a bit of time once he's able to dig into it.

We'll obviously do everything we can to look into it as quickly as we can.

But, I don't know, probably two weeks-ish, maybe.

THE WITNESS: Because I'm in Chicago all of next week² on a different matter. So at least, at least two weeks.

MS. HALSEY: So it'll take at least two weeks. We'll see. We'll try to get back to you as quickly as we can and escalate it. It's obviously not anything we were expecting and it's subject to everybody's schedules.

(**Exhibit 1048** at 72:7-73:14.)

22. In addition, during my deposition in IPR2025-01462, Petitioner asked me a number of questions about Meridian, including about whether Meridian was associated with the Chinese government. However, I testified early on in that line of questioning that I first heard of Meridian when I got involved in this matter and that I had not heard of Meridian prior to this matter. (**Exhibit 1048**, at 20:5-11.)

23. I have never worked for Meridian prior to my involvement in the present proceeding.

24. Meridian had no involvement in the “Irwin Company” project.

III. MY SEARCHES FOR RELEVANT MATERIAL

25. The first time that I am aware of Petitioner requesting documentation

² My scheduled travel to Chicago was ultimately cancelled at the last minute, shortly before the arbitrary deadline Petitioner imposed on Patent Owner to respond to its document request.

regarding the “Irwin company” matter was on July 14, 2026, during my deposition in IPR2025-01462.

26. I also was provided with a copy of Petitioner’s written request for the information on July 16, 2026, shortly after my deposition in this matter, demanding the provision of materials within three business days.

27. As previously mentioned, I was traveling during that time period for both this matter and IPR2025-01462, and also had planned travel for other matters for which I am engaged as a consultant, and therefore only had a limited amount of time to search for responsive materials.

28. I performed searches related to Irwin, Lenox, and Newell Rubbermaid, as I understand that Newell Rubbermaid acquired both entities.

29. I have searched for relevant materials on the university course website where such materials were stored but learned that it was no longer available, as these materials are only maintained for ten years. I also searched the USPTO database for any patents related to the invention but found none, indicating that the company never sought patent protection which would have been sought prior to commercialization of the invention. This would explain why I could not find the device on any Irwin, Lenox, or Newell Rubbermaid web sites nor through a Wayback Machine database search. Finally, I performed a comprehensive search of

my own private written and digital records and found nothing related to the “Irwin company” matter.

30. As I previously informed counsel for Petitioner, I do not believe any relevant materials exist or have been maintained.

31. Despite my best efforts, I have not been able to identify any materials that provide additional information about the “Irwin company” matter.

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Declaration of Glenn E. Vallee, Ph.D., P.E.

Executed on this 31st day of August, 2026, in Melbourne, Florida.



Glenn E. Vallee, Ph.D., P.E.