

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

UATP IP LLC,
Petitioner,

v.

SLICK SLIDE LLC,
Patent Owner.

PGR2024-00054
Patent 11,998,854 B1

Before KRISTINA M. KALAN, ROBERT L. KINDER, and
BRIAN D. RANGE, *Administrative Patent Judges*.

PER CURIAM.

JUDGMENT
Final Written Decision
Determining Some Challenged Claims Unpatentable
35 U.S.C. § 318(a)

Denying Patent Owner's Motion to Terminate
37 C.F.R. § 42.5

I. INTRODUCTION

We have authority to hear this *inter partes* review under 35 U.S.C. § 6(c). We enter this Final Written Decision pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. We determine that UATP IP LLC (“Petitioner”) has proven by a preponderance of the evidence that claims 22–26 of U.S. Patent No. 11,998,854 B1 (Ex. 1001, “the ’854 patent”) are unpatentable, but has not proven by a preponderance of the evidence that claims 1–17, 27, and 28 are unpatentable. *See* 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d).

A. Background

Petitioner filed a petition for *inter partes* review of claims 1–17 and 22–28 (the “challenged claims”) of the ’854 patent. Paper 2 (“Petition” or “Pet.”) Slick Slide LLC (“Patent Owner”) timely filed a Preliminary Response. Paper 5. On January 9, 2025, based on the record before us at the time, we instituted an *inter partes* review of all challenged claims on all grounds alleged as indicated in the table below. Paper 8 (“Institution Decision” or “Dec.”).

Ground	Claim(s) Challenged	35 U.S.C. ¹	Reference(s)/Basis
1A	1–4, 6, 7	102	Phillips ²
1A	1–4, 6, 7	103	Phillips
1B	1–4, 6, 7, 14–17, 22–28	103	Phillips, WN0400 ³
2A	1–7	103	Phillips, Fallgatter ⁴
2B	1–7, 14–17, 22–28	103	Phillips, Fallgatter, WN0400
3A	8–13	112(a)	Enablement
3B	5, 26	112(b)	Indefiniteness

After we instituted this post-grant review, Patent Owner filed a Patent Owner Response in opposition to the Petition (Paper 20, “PO Resp.”). Petitioner filed a Reply in support of the Petition (Paper 27, “Reply”). Patent Owner filed a Sur-reply responding to the Reply (Paper 32, “Sur-reply”). We heard oral argument on January 21, 2026, and a transcript of the argument has been entered in the record (Paper 41, “Tr.”).

B. Real Parties in Interest

In the Petition, Petitioner identifies UATP IP, LLC, and UATP Management LLC as real parties in interest. Pet. 95. Patent Owner identifies Slick Slide LLC as the real party in interest. Paper 4, 2. Petitioner subsequently filed additional Mandatory Notices regarding real parties in interest. Papers 28, 46, 47. We separately address Patent Owner’s motion to

¹ The Leahy-Smith America Invents Act (“AIA”) included revisions to 35 U.S.C. §§ 102 and 103 that became effective on March 16, 2013. We apply the AIA versions of the statutory bases for unpatentability.

² U.S. Pat. No. US 7,896,779 B1 to Phillips, issued Mar. 1, 2011 (Ex. 1004).

³ WN0400 – *400 Micron Nylon Mesh 45% Open Area*, Industrial Netting product page, archived by Internet Archive Wayback Machine on July 28, 2021 (Ex. 1006).

⁴ US Patent Pub. No. 2023/0129814 A1 to Fallgatter et al., published Apr. 27, 2023 (Ex. 1005).

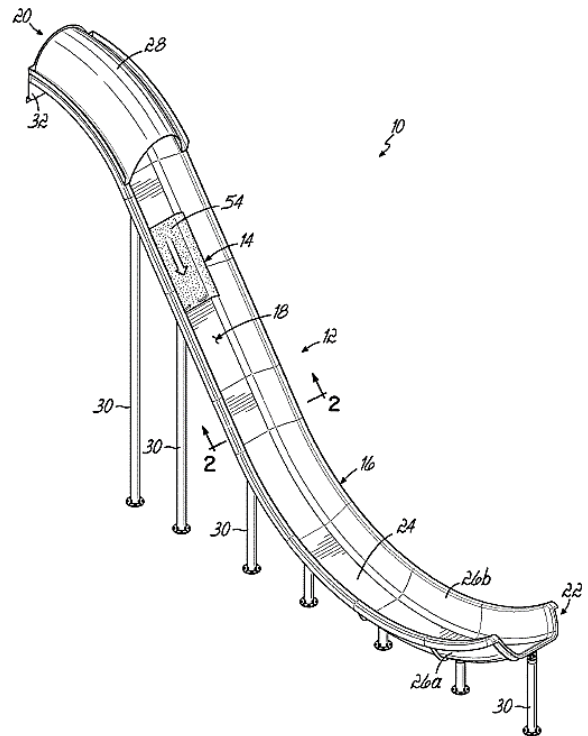
terminate based on Petitioner's identification of real parties in interest herein. *See* Section II.M., *supra*.

C. Related Proceedings

The parties indicate there are no related proceedings at the USPTO or any “pending civil actions.” Pet. 95; Paper 4, 2.

D. The '854 Patent

The '854 patent describes a recreational slide, which includes a slide with a non-wet lubricated slide surface, and a ride vehicle with a fabric layer that forms a top surface configured to contact the rider and a mesh layer that forms a bottom surface. Ex. 1001, codes (54), (57). Figure 1, reproduced right, shows an example of the slide and ride vehicle of the '854 patent. Figure 1 illustrates slide system 10, with slide 12 having slide body 16 and slide surface 18, and ride vehicle 14. *Id.* at 4:47–53. The patent describes that “slide body 16 may be formed of a fiber-reinforced plastic (FRP), such as fiberglass.” *Id.* at 4:53–54. Slide body 16 includes a dry lubricant material to improve the lubricity of slide surface 18. *Id.* at 4:58–61. In addition, “ride vehicle 14 includes a mesh material that cooperates with the slide surface 18 to achieve an improved, i.e., reduced, coefficient of friction therebetween,” which “may be within a range of between about 0.03 to about 0.2.” *Id.* at 5:37–46.



E. The Challenged Claims

Petitioner challenges claims 1–17 and 22–28 of the '854 patent. Pet. 1. Claims 1, 22, and 25 are independent claims. Claim 1, reproduced below with Petitioner's annotations, is illustrative of the subject matter of the challenged claims:

1. [1pre] A recreational slide system, comprising:

[1a-i] a slide

[1a-ii] including a slide body with a non-wet lubricated slide surface that extends between a top entrance of the slide and a bottom exit of the slide; and

[1b-i] a ride vehicle configured to support a rider down the slide,

[1b-ii] the ride vehicle including a top surface configured to contact the rider

[1b-iii] and a mesh layer that forms a bottom surface configured to contact the slide surface;

[1c] wherein a coefficient of friction between the mesh layer of the ride vehicle and the non-wet lubricated slide surface is within a range of between about 0.03 to about 0.2.

Ex. 1001, 12:13–23; Pet. vii (Claim Listing).

II. ANALYSIS

A. The Parties' Arguments

In our Institution Decision, we concluded that the argument and evidence adduced by Petitioner demonstrated a reasonable likelihood that at least one claim was unpatentable. *E.g.*, Dec. 29. We must now determine whether Petitioner has established by a preponderance of the evidence that the specified claims are unpatentable. 35 U.S.C. § 326(e) (2024). As we previously instructed Patent Owner, “any arguments not raised in the [Patent Owner Response] may be deemed waived.” Paper 9, 9; *see also In re*

Nuvasive, Inc., 842 F.3d 1376, 1381 (Fed. Cir. 2016) (holding that patent owner’s failure to proffer argument at trial as instructed in scheduling order constitutes waiver). Additionally, the Board’s Trial Practice Guide states that the Patent Owner Response “should identify all the involved claims that are believed to be patentable and state the basis for that belief.” Patent Trial and Appeal Board Consolidated Trial Practice Guide, 66 (Nov. 2019).⁵ We now consider the totality of the record before us, including the parties’ arguments, evidence, declarations, and testimony.

B. Level of Ordinary Skill

We review the grounds of unpatentability in view of the understanding of a person of ordinary skill in the art at the time of the invention. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). Factors pertinent to a determination of the level of ordinary skill in the art include “(1) the educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of workers active in the field.” *Envtl. Designs, Ltd. v. Union Oil Co. of Cal.*, 713 F.2d 693, 696–697 (Fed. Cir. 1983) (citing *Orthopedic Equip. Co. v. All Orthopedic Appliances, Inc.*, 707 F.2d 1376, 1381–82 (Fed. Cir. 1983)); *Best Medical Int’l, Inc. v. Elekta Inc.*, 46 F.4th 1346, 1353 (Fed. Cir. 2022). Not all such factors may be present in every case, and one or more of these or other factors may predominate in a particular case. *Envtl. Designs*, 713 F.2d at 696–697.

⁵ The current version of the Trial Practice Guide (“TPG”) is available at <https://www.uspto.gov/patents/ptab/trial-practice-guide>.

In our Institution Decision, we applied Patent Owner’s proposal that a person of ordinary skill in the art (“POSITA”) at the time of the invention the art “would have had at least (1) a Bachelor’s degree in engineering, materials science, or a related field, with (2) experience in textile design, engineering, or fiber science,” but we declined to adopt Patent Owner’s proposal requiring “five years of experience in measurement and analysis of coefficient of friction.” Inst. Dec. 7–8. We noted that the “level of skill in the art remains an open issue in this proceeding” and that further “submissions by the parties may include argument and evidence that would assist in the resolution of this issue at the close of trial.” *Id.* at 9.

We summarize the parties’ positions below.

Petitioner argues a person of ordinary skill in the art at the time of the invention “would have had at least (1) a Bachelor’s degree in mechanical engineering, materials science, or a related field, with (2) 1–2 years of experience in manufacturing, product design, or a related field, or equivalent research or professional experience.” Pet. 10 (citing Ex. 1003 ¶¶ 29–48).

In the final record, Patent Owner contends that an ordinarily skilled artisan would have possessed more specific industry experience, especially as it relates to fiber science and measuring a coefficient of friction (“CoF”). PO Resp. 23–24. More specifically, Patent Owner contends that an ordinarily skilled artisan “would have had at least (1) experience in fiber science and (2) 5 years of measurement and analysis experience in the field of CoF.” *Id.* (citing Ex. 2026 ¶¶ 38–45; Ex. 2027 ¶¶ 33–40). We note this differs from Patent Owner’s position taken prior to institution, which we adopted in part in our Institution Decision. Inst Dec. 7–8 (“Patent Owner argues a person of ordinary skill in the art at the time of the invention

“would have had at least (1) a Bachelor’s degree in engineering, materials science, or a related field, with (2) experience in textile design, engineering, or fiber science”; also “at least 5 years of measurement and analysis experience in the field of coefficient of friction.”). Patent Owner also contends that an ordinarily skilled artisan “would have experience in fiber science for understanding the distinctions between mesh and sheeting, and how those interact, differently, with other materials when in contact with them, as well as mechanical properties such as wear.” *Id.* at 24 (citing Ex. 2026 ¶ 44; Ex. 2027 ¶ 40). Patent Owner also argues that specific experience needed with measuring CoF arises because:

the morphology of fabrics has a decisive effect on the frictional resistance occurring in the fabrics, and friction measurements are extremely dependent on the condition of the contacting surfaces on the test specimens. [] A POSITA without this experience would likely misunderstand, and likely misuse, CoF data for which the reported results do not detail the protocol, morphology, and other aspects of the analysis.

Id. at 25 (citing Ex. 2026 ¶ 45).

Petitioner replies that “Dr. Wang more than meets the standard even under PO’s definition, which is inconsistent with the ’854 patent.” Reply 34.

We consider the educational level of the inventor; the types of problems encountered in the art and prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; educational level of active workers in the field; and the patent’s purpose when determining the appropriate level of skill in the art. *Best*, 46 F.4th at 1353. The parties’ declarants do not appear to provide a specific analysis of these factors as they relate to the ’854 patent. *See generally* Exs. 1003, 2026, 2027.

We continue to apply the definition we adopted in the Institution Decision, namely, that a person of ordinary skill in the art at the time of the invention “would have had at least (1) a Bachelor’s degree in engineering, materials science, or a related field, with (2) experience in textile design, engineering, or fiber science,” because this definition is in line with the ’854 patent specification and the prior art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). The requirement of a degree in a relevant field, and experience in textile design, engineering, or fiber science is consistent with the disclosure of the ’854 patent specification, which describes features of a mesh layer in textile and fiber terms. *See* Inst. Dec. 8–9; Ex. 1001, 10:17–11:14, 12:65–13:8, 14:20–24.

We are unpersuaded by the arguments and evidence on record that “at least 5 years of measurement and analysis experience in the field of coefficient of friction” is required to be part of this POSITA definition. We acknowledge Patent Owner’s arguments regarding a POSITA’s purported understanding of “mesh layer” and “coefficient of friction” in connection with its analysis of the Petitioner’s expert testimony (PO Resp. 24–25 (citing Ex. 2029)) but are of the opinion that those arguments are more properly weighed and considered in the context of the merits analysis, below, rather than being subsumed in the definition of a POSITA.

Our ultimate determination, however, would be the same under either party’s proposal. Apart from Patent Owner’s five-year proposal, the levels of skill in the art put forth by Petitioner and Patent Owner are not substantially different. Neither party has persuasively explained on this complete record how their respective proposals regarding the level of ordinary skill would change the ultimate analysis in this case. The Board, sitting as a non-jury

tribunal with administrative expertise, is well-positioned to determine and assign appropriate weight to evidence presented by each declarant in this case. *Gnosis S.P.A. v. S. Ala. Med. Sci. Found.*, IPR2013-00118, Paper 64 at 43 (PTAB June 20, 2014). Accordingly, we evaluate each declarant’s testimony along with the remainder of the evidence before us to reach our conclusions.

C. Legal Standards⁶

To prevail in its challenges to the patentability of the claims, Petitioner must establish unpatentability by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). “[T]he petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1326–27 (Fed. Cir. 2008)) (discussing the burden of proof in *inter partes* review).

A claim may be invalid as anticipated by a prior art reference if “each and every limitation is found either expressly or inherently in a single prior art reference.” *Sanofi–Synthelabo v. Apotex, Inc.*, 470 F.3d 1368, 1375 (Fed. Cir. 2006) (internal quotation marks omitted). A “prior art reference—in order to anticipate under 35 U.S.C. § 102—must not only disclose all

⁶ Legal standards regarding, for example, indefiniteness and enablement and other issues are discussed separately when addressing those topics.

elements of the claim within the four corners of the document but must also disclose those elements ‘arranged as in the claim.’” *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008) (quoting *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548 (Fed. Cir. 1983)). Anticipation under § 102 may be established by showing, as a matter of fact, that all elements arranged as specified in a claim are disclosed within the four corners of a reference, either expressly or inherently, in a manner enabling one skilled in the art to practice an embodiment of the claimed invention without undue experimentation. *See ClearValue, Inc. v. Pearl River Polymers, Inc.*, 668 F.3d 1340, 1344 (Fed. Cir. 2012). A petitioner must, in the petition, “identify ‘with particularity’ the ‘evidence that supports the grounds for the challenge to each claim.’” *Intelligent Bio-Sys., Inc. v. Illumina Cambridge, Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016) (quoting 35 U.S.C. §312(a)(3)).

The Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398 (2007), reaffirmed the framework for determining obviousness; the *KSR* Court summarized the four factual inquiries set forth in *Graham* that we apply in determining whether a claim is unpatentable as obvious under 35 U.S.C. § 103(a) as follows: (1) determining the scope and content of the prior art, (2) ascertaining the differences between the prior art and the claims at issue, (3) resolving the level of ordinary skill in the pertinent art, and (4) when in evidence, considering objective evidence indicating obviousness or nonobviousness. *KSR*, 550 U.S. at 406 (citing *Graham*, 383 U.S. at 17–18).

Petitioner must explain how the proposed combinations of prior art would have rendered the challenged claims unpatentable. An obviousness

analysis “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 550 U.S. at 418; *accord In re Translogic Tech., Inc.*, 504 F.3d 1249, 1259 (Fed. Cir. 2007). However, Petitioner cannot satisfy its burden of proving obviousness by employing “mere conclusory statements,” but “must instead articulate specific reasoning, based on evidence of record” to support an obviousness determination. *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380–81 (Fed. Cir. 2016). Petitioner also must articulate a reason why a person of ordinary skill in the art would have combined the prior art references. *NuVasive*, 842 F.3d at 1382.

At this final stage, we determine whether a preponderance of the evidence of record shows that the challenged claims would have been anticipated or rendered obvious in view of the asserted prior art. We analyze the asserted grounds of unpatentability in accordance with these principles.

D. Claim Interpretation

We interpret claims in the same manner as in a civil action under 35 U.S.C. § 282(b) “including construing the claim in accordance with the ordinary and customary meaning of such 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). When applying that standard, we interpret the claim language as it would be understood by one of ordinary skill in the art in light of the specification. *Wasica Fin. GmbH v. Cont’l Auto. Sys., Inc.*, 853 F.3d 1272, 1279–80 (Fed. Cir. 2017). Thus, we give claim terms their ordinary and customary meaning as understood by an ordinarily skilled artisan. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc).

Only terms that are in controversy need to be construed, and then only to the extent necessary to resolve the controversy. *Nidec Motor Corp. v.*

Zhongshan Broad Ocean Motor Co., 868 F.3d 1013, 1017 (Fed. Cir. 2017).

In our Institution Decision, we determined that we did not need to construe either “mesh layer” or “coefficient of friction” at that stage of the proceeding. Inst. Dec. 10 (“Because our determination that Petitioner demonstrates at least one challenged claim meets the threshold for institution . . . is not based on construing the term ‘mesh layer’ or ‘coefficient of friction,’ we determine we need not construe either claim term at this stage of the proceeding.”). We invited the parties to address the interpretation of these claim terms further during trial. *Id.* at 12, 14.

1. Mesh Layer

Petitioner contends “no formal claim construction is necessary in this proceeding.” Pet. 10.

In our Institution Decision, we noted that the record at that stage supported Patent Owner’s proposed construction that a person of ordinary skill in the art “would understand from the specification that ‘mesh layer’ means a layer of mesh material which is characterized by open spaces between threads,” but “with the caveat that Patent Owner has not addressed whether a person of ordinary skill’s understanding of a ‘mesh layer’ would additionally include the size of the open spaces between the threads.” Inst. Dec. 10–11.

Patent Owner responds that the “specification and claim language demonstrate to a POSITA that ‘mesh layer’ means a layer of mesh material which is characterized by open spaces between threads.” PO Resp. 12. Patent Owner also relies on declarant testimony and dictionary evidence in

support of this definition. *Id.* at 12–14 (citing Ex. 2031 ¶¶ 2–10; Ex. 2030 ¶¶ 2–8; Ex. 2029, 85:1–25; Ex. 2006; Ex. 2004; Ex. 2026 ¶ 92; Ex. 2027 ¶¶ 58, 62).

Petitioner replies that Patent Owner’s construction is improperly narrow, and that the “evidence confirms that ‘mesh layer’ encompasses woven material that is permeable through interstices, regardless of whether adjacent threads (e.g., parallel warp threads) are in physical contact.” Reply 6–7 (citing Ex. 1044 ¶¶ 23–25).

Patent Owner reiterates that the term “mesh layer” should be understood to mean “a layer of material which is characterized by open spaces.” Sur-reply 4. Patent Owner responds to Petitioner’s arguments regarding testimony, definitions, and the ’854 patent specification and embodiments (*id.* at 4–8), arguing finally that a POSITA “understands what is sheeting, which is not characterized by open spaces, and what is a mesh, which is characterized by open spaces.” *Id.* at 7–8 (citing Ex. 2031 ¶¶ 9–10).

On this complete record, we construe “mesh layer” to mean a “woven material that is permeable through interstices.” This construction is derived from Petitioner’s proposed definition but incorporates elements agreed upon by both parties. We determine that Patent Owner has not shown persuasively that we need to narrow the construction of “mesh layer” to include a particular percentage or lower limit of the amount of open space. A person of ordinary skill in the art would not deem such restrictions necessary on the final record before us.

The ’854 patent provides, for example, that warp and weft threads of a mesh material form “a plurality of interstitial openings 74 therebetween.” Ex. 1001, 10:19–25. The specification provides examples of a mesh layer

and discusses a mesh material, but does not appear to require any particular percentage of open space for a material to be considered a “mesh layer.” *See, e.g., id.* at 10:17–50 (discussing “the embodiment shown” in Figure 5). We note that dependent claims 17 and 25 discuss “open area”: “wherein the mesh layer includes a plurality of interstitial openings that define an open area of the mesh layer, wherein the open area of the mesh layer is within a range of between about 35% to about 50%.” These dependent claims indicate that the mesh layer may have interstitial openings, but that as part of a dependent claim, the size of those openings is a narrowing aspect rather than a core feature of the “mesh layer” definition itself. Patent Owner agreed that “throughout the specification mesh is designed to form interstitial openings.” Tr. 47:26–48:5 (Patent Owner also agreeing that “that can be done without saying anything at all about how much open space there is”). Also, we are persuaded that the specification examples provide a range of diameters of threads that would result in a configuration in which “warp threads are arranged side-by-side.” Reply 5–6; Ex. 1044 ¶ 20 (annotating Ex. 1001, Fig. 5 to adjust spacing to illustrate the calculation).

Turning to extrinsic evidence, Petitioner’s expert Dr. Wang asserts that a person of ordinary skill would have understood that a “mesh” fabric includes a woven fabric with holes between the woven threads, and for some fabrics, “the holes formed by the woven threads may be very small in size.” Ex. 1003 ¶ 100 (citing Exs. 1034, 1037, 1038, 1007). Patent Owner’s expert Dr. Rust states that “to be a mesh layer means that the material is characterized by openings,” but also testifies that determining whether a material is a “mesh layer” “means that there is a technical specification that - that indicates the size of the opening or the percent of open area.” PO

Resp. 12; Ex. 1045, 55:19–56:24; *compare* Ex. 1044 ¶ 14 (criticizing “technical specification” approach); Tr. 10:4–26. We disagree that a mesh layer may only be defined by a technical specification indicating the size of the openings; rather, “mesh layer” is a broader term that may have bigger or smaller openings (interstices) that allow for permeability without confining the opening to a particular size. We are not presented with a persuasive argument for employing a “technical specification.” We are not persuaded that the evidence before us requires a particular size of opening or percent of open area in a mesh layer, or demonstrates that a person of ordinary skill’s understanding of a “mesh layer” would necessarily include the specific size of the open spaces between the threads.

Additionally, the ASTM F1918 definition relied upon by Patent Owner and Petitioner (Reply 4) provides that a mesh is a “woven fabric with a permeable network made from interlacing threads or mono filament fibers.” Ex. 2018 (Replacement), 2. No requirement of “open spaces” appears in this definition; the network of threads or fibers only has to be “permeable.”

Thus, a mesh layer can be characterized by interstices but is not necessarily characterized by “open spaces” of a particular size. We are unpersuaded that there is a required lower numerical bound to a size of “open spaces” required for a material to be considered a mesh layer. On this record, a layer having interstices rendering the layer permeable is sufficient to define that layer as a “mesh layer.” Accordingly, we construe “mesh layer” to mean a “woven material that is permeable through interstices.”

2. Coefficient of Friction

As noted above, Petitioner contends “no formal claim construction is necessary in this proceeding.” Pet. 10; Inst. Dec. 13 (“Petitioner argues there is no need to construe ‘coefficient of friction’ and that the ’854 patent specification does not provide a definition of coefficient of friction requiring that it be determined by a specific ASTM standard.”).

In our Institution Decision, we agreed with Petitioner that the ’854 patent specification does not include clear and explicit lexicography or a disclaimer that would support requiring “coefficient of friction” to be determined by a specific ASTM test method. Inst. Dec. 13.

Patent Owner responds that the ’854 patent itself defines the claim term “coefficient of friction,” namely, “[a]s will be understood by a person skilled in the art, the coefficient of friction between the ride vehicle and the slide surface is the ratio of the frictional force between two surfaces to the normal force pressing the surfaces together,” that is, “Coefficient of Friction (p)=Force of Friction (F)/Normal Force (N).” PO Resp. 14 (citing Ex. 1001, 4:38–43). Patent Owner also relies on declarant testimony to assert that a “POSITA would understand from the specification that ‘coefficient of friction’ means the frictional force between two surfaces to the normal force pressing the surfaces together, as determined using the ASTM D1894 test method.” *Id.* at 15 (citing Ex. 2026 ¶¶ 63–66).

Petitioner replies that “coefficient of friction” does not require ASTM D1894. Reply 7. Petitioner relies on the ’854 patent’s explanation of “Coefficient of Friction (p)=Force of Friction (F)/Normal Force (N)” as being “consistent with the conventional definition of CoF.” *Id.* (citing Ex. 1001, 4:38–43).

Patent Owner responds that the '854 patent defines “coefficient of friction” in terms of a specific ASTM standard, D1894. Sur-reply 8.

On this complete record, we agree with Petitioner that no construction of the term “coefficient of friction” in terms of a specific ASTM standard is necessary. We note that the '854 patent sets forth the formula “Coefficient of Friction (p)=Force of Friction (F)/Normal Force (N).” Ex. 1001, 4:42–43. The '854 patent indicates that this is an accepted and conventional use of the term. *Id.* at 4:38–41 (“As will be understood by a person skilled in the art, the coefficient of friction between the ride vehicle and the slide surface is the ratio of the frictional force between two surfaces to the normal force pressing the surfaces together.”). We also note that the language in the '854 patent discussing the ASTM standard is permissive. *See* Ex. 1001, 11:31–38 (“The coefficient of friction between surfaces of the mesh material 46 and the slide surface 18 **may be determined** using the American Society for Testing and Materials International (ASTM) Coefficient of Friction ASTM D1894 standard test method (July, 2023), which **may be used** to determine both kinetic (moving) and static (starting) coefficient of friction of one surface being dragged across another.”) (emphasis added). Thus, it is not necessary to include a specific testing method set forth in the ASTM because there is no lexicography or disavowal in the '854 patent that would require us to narrow the term in that manner. *Luminara Worldwide, LLC v. Liown Elecs. Co.*, 814 F.3d 1343, 1353 (Fed. Cir. 2016) (“Absent lexicography or disavowal, we do not depart from the plain meaning of the claims.”); *In re Am. Acad. Of Sci. Tech Ctr.*, 367 F.3d 1359, 1369 (Fed. Cir. 2004) (“We have cautioned against reading limitations into a claim from the preferred

embodiment described in the specification, even if it is the only embodiment described, absent clear disclaimer in the specification.”).

Accordingly, we decline to formally construe “coefficient of friction” to include the narrowing restrictions proposed by Patent Owner.

E. Objective Indicia

A determination of obviousness “requires consideration of all four *Graham* factors, and it is error to reach a conclusion of obviousness until all those factors are considered.” *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1048 (Fed. Cir. 2016) (en banc). One *Graham* factor is evidence of “objective indicia” (sometimes referred to as “secondary considerations”) of nonobviousness. *Graham*, 383 U.S. at 17–18. Such evidence “may often be the most probative and cogent evidence in the record.” *Apple Inc.*, 839 F.3d at 1052.

1. Parties’ Arguments

Patent Owner argues that Slick Slide’s recreational slide system practices the ’854 patent (PO Resp. 82), that the industry has praised Slick Slide’s systems (*id.* at 91), that the slides met a long-felt but unmet need (*id.*), that the features of the ’854 Patent have created commercial success (*id.*), that others have copied relevant technology (*id.* at 95), that the ’854 patent solves long felt but unsolved need, and that the ’854 patent provides unexpected results (*id.* at 97).

Petitioner argues that Patent Owner’s objective indicia analysis is directed to products that pre-date the possible priority date of the ’854 patent (Reply 24), that alleged commercial products are not “coextensive with” the ’854 patent claims (*id.* at 26), and that evidence of purported objective indicia is not reliable or tied to challenged claims (*id.* at 28).

2. Products and Nexus

We first consider the issue of whether certain evidence relied upon by Patent Owner related to commercial products pre-dates the '854 patent. Evidence related to products that pre-date an invention may help establish the baseline state of technology (the prior art). Evidence regarding how a pre-existing product performed, succeeded, or failed in the market helps define the baseline knowledge of a person of ordinary skill in the art at the time of the invention—but not the unique value added later by the patent itself relevant for secondary considerations. Further, if a pre-dating product solved a long-felt need, it is evidence that the need was already met before the patentee's invention, which actually supports a finding of obviousness. Moreover, because a publicly used product that predates the '854 patent's priority date is prior art, it cannot be the product that “*is the invention disclosed and claimed*” (because of 35 U.S.C. § 102) and thus cannot establish a nexus between objective indicia and patent claims. *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019) (quoting *Demaco Corp. v. F. Von. Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1392 (Fed. Cir. 1988) (emphasis original)).

Here, we are persuaded by Petitioner's argument that Patent Owner's objective indicia arguments are directed to products that pre-date the '854 patent. Patent Owner (Slick Slide) argues that its “flagship Launch slide” is an embodiment of the system illustrated in '854 patent figures. PO Resp. 81. Patent Owner relies on testimony of Dr. Spiegelberg (Ex. 2030) to compare the Slick Slide recreational slide to claims 1, 22, and 25 of the '854 patent. Ex. 2030 ¶¶ 48–65. Dr. Spiegelberg states that his analysis is based on slides “as installed in a Slick City Action Park location in Columbus, Ohio.” *Id.* at

¶ 49 (citing Ex. 2042). Slick City opened its first indoor slide park in 2022. Sur-reply 27 (citing Ex. 2033 ¶ 32). Thus, the evidence before us does not support that the slide Dr. Spiegelberg's analysis relies upon (a 2022 slide) pre-dates the '854 patent's November 1, 2022, priority date.

However, the evidence before us establishes that Slick City Action Park founder and CEO Bron Launsby installed a slide feature at the Sky Zone trampoline park in 2020. Ex. 1050, 2. The slide was built by Slick Slide and "was a fast hit." *Id.* at 3; *see also* Reply 24. Slick Slide's early installation of this slide is well before the earliest possible priority date for the '854 patent. Various exhibits verify the 2020 date. Reply 24–25 (citing Exs. 1050, 1058–1069, 1072, 1073).

Gary Schmidt, founder and CEO of Slick Slide LLC (Ex. 2033 ¶ 1), testifies that core inventive components have been the same for slides made by Slick Slide since introduction:

Since the introduction of Slick Slide's first installations, core inventive components of its recreational slide systems have remained the same: a non-wet lubricated slide surface working in combination with a ride vehicle incorporating a woven mesh bottom surface.

Ex. 2033 ¶ 43 (emphasis added). Importantly, at deposition, Schmidt testified that Slick Slide's slides would not function without the '854 patent's technology:

Q. Okay. So, for example, you were shown -I'll just list them, a Launch, the Scoop, the Bowl, the Race, the Berm, the Long Jump, the Family, and the Hybrid. Do those all incorporate the technology claimed in the '854 patent?

A. **All of Slick Slide's slides do, including those.**

...

Q. Is it the incorporation of that technology claimed in the '854 patent in the Slick Slide products that is the cause of Slick Slide's success?

A. 100 percent.

Q. So it's not the geometry of the slides. It's the fact that the slides create or incorporate the technology claimed in the '854 patent that drives product sales?

[Objection omitted]

WITNESS: The slides would not function without '854.

Q. In other words, it's not the geometry of the slides that drives sales of those products, correct?

A. Correct.

Q. It's the fact that those slides incorporate the technology claimed in the '854 patent?

A. Yes.

Q. Without the technology claimed in the '854 patent having been incorporated into those slides, then the slides would not operate properly?

...

THE WITNESS: **They wouldn't get off the end of the slide.**

Ex. 1047, 163:2–164:24 (emphases added); *see also id.* at 53:9–55:8; 66:23–68:15; 68:12–15). Based on this testimony, a preponderance of the evidence establishes that the “slide feature” that was “built by Slick Slide[s]” and installed at Sky Zone in 2020 “incorporates the technology claimed in the '854 patent.” Because the 2020 Sky Zone slides were “a fast hit,” the preponderance of the evidence also supports that consumers riding the slide were able to “get off the end of the slide” thus further supporting that the '854 patent technology was incorporated into these 2020 slides.

A patent owner cannot tie objective indicia to aspects “that were already present in the prior art.” *Campbell Soup Co. v. Gamon Plus, Inc.*, 10 F.4th 1268, 1277, 1278 (Fed. Cir. 2021). As explained above, Patent Owner attempts to tie the objective indicia to what was already present in the prior art. Patent Owner relies on slides built by Slick Slide to establish objective indicia, and slides built by Slick Slide with substantially the same relevant features of the '854 patent existed well before the '854 patent priority date.

As such, Patent Owner's evidence of objective indicia is entitled to little if any weight.

Also, even if Slick Slide's 2020 slide installation did not undermine Patent Owner's objective indicia arguments as explained above, Patent Owner's evidence is weak as explained below.

3. Industry Praise

Patent Owner's evidence of "industry praise" is based on Schmidt's citation to the compilation of articles at Exhibit 2045, but Schmidt was unfamiliar with that exhibit. PO Resp. 91; Reply 31 (citing Ex. 1047). Exhibit 2045 includes paid placements by public relation firms on behalf of promotional materials. *See* Reply 31 (citing Ex. 2045, 47, Ex. 1047, 101:2–103:3). As such, Patent Owner's evidence of industry praise is weak, because it is unsupported by declarant testimony, and is merely promotional rather than genuine praise by those in the industry.

4. Long-felt Unmet Needs

Patent Owner's only evidence on this factor is a citation to Schmidt's declaration. PO Resp. 91 (citing Ex. 2033 ¶¶ 84–90). Schmidt's declaration, in turn, states that recreational slides for amusement have been a feature in children's playgrounds since at least the 1930s, but that slides did not become a foundation for family entertainment centers until later. Schmidt's declaration itself provides some evidence, but it is only his own testimony, and we are not presented with supporting documentation. Thus, Patent Owner's long-felt unmet needs evidence supports Patent Owner's assertions, but is weak because it is unsubstantiated.

Further, as noted above, the final record supports that Slick Slide's 2020 slide installation (a pre-dating product) had already solved a long-felt

unmet need, which we view as evidence that the need was already met before the patentee's invention.

5. Commercial Success

Patent Owner presents, in the form of Schmidt's declaration, evidence of rapid commercial growth both in terms of dollars and market share. PO Resp. 92 (citing Ex. 2033). Patent Owner, however, did not provide records to support the finances on which Schmidt relies. Reply 32. As Petitioner notes, revenue may have also come from franchise agreements and marketing fees that do not connect to the '854 Patent. *Id.* Also, the evidence shows that Slick City revenue is also attributable to "Air Courts" and food and beverage sales. *Id.* Moreover, some of Slick City's commercial success may be attributable to a liquid oil lubricant: the "slick sauce" or the geometry of slide designs. *Id.* at 28–29. Other evidence before us suggests timing of a post-pandemic bump was a driver in rebounding sales growth. Ex. 1050, p.3 (posting double digit sales in 2022). Thus, the evidence in the complete record before us supports commercial success, but is weak, in that it does not tie commercial success to the '854 patent itself, may be incomplete, and is unsubstantiated by financial records.

6. Copying

Patent Owner argues that Urban Air announced new indoor slides in 2024 and introduced ride vehicles "strikingly similar to Slick Slide's." PO Resp. 95. Patent Owner does not, however, attempt to establish Urban Air (or anyone else) infringes any '854 patent claim and does not attempt to establish that Urban Air (or anyone else) accessed and tried to replicate Patent Owner's technology. Having similar slides is not, by itself, evidence of copying. Because Patent Owner has not persuasively shown access to the

commercial embodiment of the patented invention and efforts to replicate it based on that access, the evidence before us does not support copying of technology claimed by the '854 patent.

7. Unexpected Results

Patent Owner must provide some degree of comparative data showing that the claimed invention possesses superior properties significantly different from what the closest prior art would have predicted. Patent Owner does not cite any evidence to support its unexpected results argument, and Patent Owner does not compare technology practicing the '854 patent claims to any prior art. PO Resp. 97. Thus, the evidence before us does not support unexpected results.

8. Conclusion

In sum, Patent Owner's objective indicia arguments fail because Patent Owner relies upon evidence that, because of its early date, cannot establish a nexus to any '854 patent claim. Alternatively, if even this were not the case, Patent Owner would have only weak evidence of industry praise, unmet and long-felt needs, and commercial success. We have considered this alternative possibility (where early evidence could establish objective indicia) holistically in view of all evidence before us, and we determine that Patent Owner's weak evidence of objective indicia does not substantially impact our analysis or determinations as set forth below. Where we determine a '854 patent claim is obvious, the evidence of obviousness outweighs the objective indicia.

F. Prior Art

1. Phillips

Phillips, titled “Sliding Exercise Apparatus and Recreational Device,” describes “an exercise apparatus and recreational system composed of a plurality of interconnecting parts which include a slide having a low friction, durable top layer upon which a user can traverse in both a wet or dry condition.” Ex.

1004, code (54), 1:13–17. Figure 1, reproduced right, shows a slide embodiment of Phillips. *Id.* at 3:40–41.

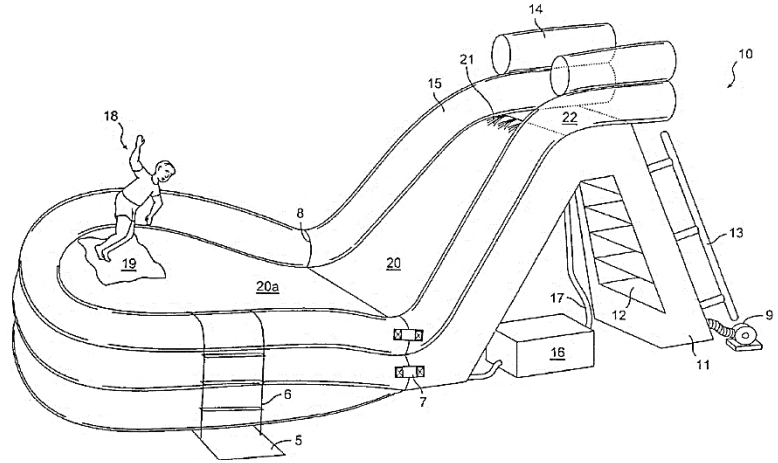


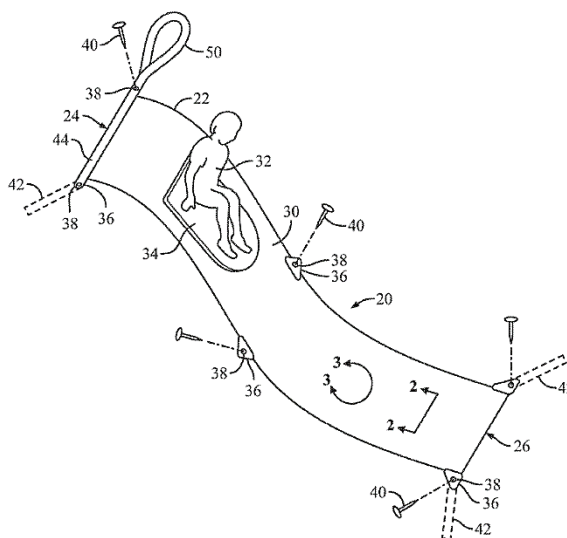
Figure 1 shows slide 10, with top surface 20, and membrane 19. *Id.* at 4:15–46. Phillips describes that the membrane and top surface “can each be composed of low friction high durable material such as a member selected from the group consisting of nylon, Teflon, sailcloth, Dacron, vinyl, artificial turf, synthetic carpet and polyester resins.” *Id.* at 4:43–46.

2. WN0400

WN0400 is a product specification of a “400 Micron Nylon Mesh” with “45% Open Area,” from Industrial Netting. Ex. 1006, 1. The product description lists properties of the mesh such as “Monofilament Nylon 6 fiber 42 threads per inch” and “400 micron hole opening with 45% open area.” *Id.* at 2.

3. Fallgatter

Fallgatter is a patent publication titled “Portable Dry Recreational Slide.” Ex. 1005, (code 54). Fallgatter “discloses aspects of a portable dry recreational slide that can be readily used in a broad range of locations.” *Id.* ¶ 4. Fallgatter’s Figure 1, reproduced right, shows an example of its slide, which includes dry slide 20, with elongated slide body 22, sliding surface



30, rider 32, vehicle 34, anchoring structures 36, grommets 38, flat-top stakes 40, and elongated straps 42. *Id.* ¶¶ 38–39. Fallgatter discloses that its “slide body is made of a low-friction textile, most preferably a textile substrate such as a woven nylon, woven polyester or non-woven polyethylene with a low friction coating such as a silicone coating.” *Id.* ¶ 36. “The coating defines the sliding surface upon which riders may slide, and preferably has a coefficient of friction of about 0.25 or less.” *Id.*

G. Ground 1A - Alleged Anticipation and Obviousness Based on Phillips

Petitioner contends Phillips anticipates claims 1–4, 6, and 7 or renders those claims obvious. Pet. 16–36. Claims 2–4, 6, and 7 depend directly or indirectly from claim 1. Petitioner maps the limitations of claims 1–4, 6, and 7 to the portions of Phillips alleged to disclose the limitations of those claims. *Id.* at 18–36.

Limitation [1c] recites “wherein a coefficient of friction between the mesh layer of the ride vehicle and the non-wet lubricated slide surface is

within a range of between about 0.03 to about 0.2.”⁷ We focus our analysis on this dispositive limitation for this ground.

1. Petition

Petitioner argues that “Phillips expressly advocates for ‘low friction’ between slide and ride vehicle and specifies materials that achieve ‘low friction.’” Pet. 26. Relying on Phillips’s use of Teflon for the slide surface and nylon for the ride vehicle bottom (Ex. 1004, 4:43–46), Petitioner argues that these “materials provide ‘low friction’ within the claimed range,” because the “coefficient of friction between Teflon and nylon is about 0.05.” *Id.* (citing Ex. 1003 ¶¶ 105–107, Ex. 1021, 1; Ex. 1026, 5, 7 (providing coefficients of friction for Teflon/Teflon (0.04) and nylon/nylon (0.15–0.25)). Petitioner argues that the coefficient of friction was “inherent in Phillips system that utilizes a Teflon slide surface and a nylon mesh layer.” *Id.* at 27. Petitioner also argues that the “low coefficient of friction of Phillips’ slide system is confirmed by the fact that the materials described by Phillips are the same as the ’854 patent itself,” which “acknowledges in the Background section that prior ‘typical’ dry slides achieved a coefficient of friction within the claimed range.” *Id.* at 27–28. Petitioner further posits: “Additionally, the ’854 patent’s claimed range of coefficients of friction is so broad as to be meaningless in distinguishing over prior slide systems.” *Id.* at 29 (citing Ex. 1003 ¶¶ 114, 53–57).

⁷ Limitation [1c] requires a coefficient of friction of “about 0.03 to about 0.2,” but the ’854 patent provides that “[a]s used herein relative to the coefficient of friction, ‘about’ is intended to mean +/- 10%.” Ex. 1001, 4:34–36; Ex. 1003 ¶ 229; Pet. 70–71. Therefore, limitation [1c] “would have been understood by a POSITA to be a range from 0.027 to 0.22.” Ex. 1003 ¶ 229.

Regarding obviousness based on Phillips alone, Petitioner argues that “a POSITA would have found it obvious from Phillips’ teachings to select materials for the slide surface coating and ride vehicle from Phillips’ list to achieve low friction below 0.2.” *Id.* at 30. According to Petitioner, “a POSITA would have been prompted to select Teflon and nylon materials that achieve low friction between slide surface and vehicle.” *Id.* at 31.

2. Patent Owner Response

Patent Owner argues, regarding anticipation, that Phillips does not teach the claimed coefficient of friction range of limitation [1c]; that Petitioner’s expert agrees that Phillips does not disclose a coefficient of friction or a particular number or range; and that Petitioner concedes that “Phillips does not expressly define a numeric value for coefficient of friction.” PO Resp. 35–36 (citing Ex. 2029, 55:9–22, 57:20–58:3, Pet. 61). Patent Owner argues that Petitioner’s assertion that Phillips would necessarily have a coefficient of friction within the claimed range lacks support, because (1) Petitioner simply concludes that the CoF values in its cited tables bear on the claimed range, because the materials are the same; (2) CoF is “not merely a property of the interaction between the two surface materials” but rather “CoF is a property that depends on more than just the chemistry of the two surfaces and further depends upon the morphology of the surfaces and how the CoF testing is performed” (citing Ex. 2026 ¶¶ 170–173; Ex. 2029, 109:21–110:23 (there are at least ten (10) different factors that influence CoF data)); (3) Petitioner’s references “do not disclose or specify the specified normal force, specified area of materials, morphology, or test conditions” and, in any event, “the lowest CoF for any nylon mesh that Petitioner has presented” is 0.26. *Id.* at 36–40.

Regarding obviousness of limitation [1c] based on Phillips alone, Patent Owner argues that “the lowest CoF for a mesh is 0.26.” *Id.* at 50 (citing Ex. 1009,⁸ Table 2, Fabric No. 15). Patent Owner alleges that “Petitioner’s purported modifications to Phillips would result in, at best, a CoF that is outside and worse than the range claimed in the ’854 patent.” *Id.* at 50–51. Patent Owner also criticizes Petitioner’s assumptions as not accounting for testing conditions, namely, those set forth in ASTM D1894, and assuming that CoF data “can be imported wholesale so long as it involves the same material.” *Id.* at 51–52.

3. Petitioner Reply

Petitioner replies that “Phillips anticipates Element [1c] because (1) Phillips’ expressly discloses ‘low friction’ sheeting materials that would result in the CoF falling within the broad range claimed in the ’854 patent,” and “(2) inherent properties of these sheeting materials establish that the CoF between the slide surface and the ride vehicle would be *at the low end of the claimed range*.” Reply 16. Petitioner also argues that “a POSITA would have been motivated to implement Phillips’ Teflon slide surface and nylon ride vehicle to have a CoF within the claimed range.” *Id.* at 16–17.

4. Patent Owner Sur-Reply

Patent Owner responds that Petitioner’s expert admits that “Phillips’ disclosure of a low friction, durable sheeting material is not understood by a POSITA to disclose a CoF of a particular number or range.” Sur-reply 21. Patent Owner also argues that Petitioner’s contention that “inherent

⁸ V.K. Kothari et al., *Assessment of frictional properties of some woven fabrics*, Indian Journal of Fibre and Textile Research Vol. 19 (September 1994) 151–155 (Ex. 1009).

properties of these sheeting materials establish that the CoF... would be at the low end of the claimed range” (Reply 16) “lacks any supporting analysis” and “is also wrong.” *Id.*

5. Analysis

On this complete record, we determine that Petitioner’s arguments do not sufficiently demonstrate that Phillips expressly or inherently discloses the coefficient of friction required by limitation [1c], nor does Phillips alone render limitation [1c] obvious.

Regarding anticipation, Petitioner fails to demonstrate that Phillips’s list of materials that may be used would be arranged in a manner that would necessarily result in the coefficient of friction required by limitation [1c]. Although Phillips generally identifies certain materials such as nylon and Teflon for the slide body and the slide surface that Petitioner argues would attain the coefficient of friction required by limitation [1c], Petitioner fails to identify the express arrangement of those materials in Phillips in the manner identified in the ’854 patent to attain the range of coefficients of friction claimed. We are also unpersuaded that the arrangement Petitioner proposes, whether Teflon/nylon, Teflon/Teflon, or nylon/nylon, expressly or inherently possesses the coefficient of friction identified in limitation [1c]. We credit Patent Owner’s assertions that not only is Phillips lacking in express disclosure that would meet limitation [1c], but that Petitioner fails to show that the missing matter is “necessarily present” in Phillips, rather than just probable or possible. *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999). The general listing of materials in Phillips notwithstanding, the arrangement of those materials is insufficiently clear as to necessarily result in the claimed configuration. Even if the materials were arranged as

Petitioner proposes, Phillips fails to expressly identify any coefficient of friction. And, even if the materials were arranged as Petitioner proposes, we credit Patent Owner's assertion that other factors can bear on the ultimate coefficient of friction, undermining Petitioner's assertion of inherency of the coefficient of friction in Phillips. The standard for anticipation is a high bar, and Petitioner has not demonstrated on this record that Phillips expressly or inherently discloses limitation [1c]. Because this shortcoming pervades each of the challenged dependent claims that depend from claim 1, we reach the same conclusion as to those challenged dependent claims 2–4, 6, and 7.

Regarding obviousness, Petitioner's reliance on Phillips as a stand-alone obviousness reference does not adequately establish that a person of ordinary skill in the art would have had a reasonable expectation of success in reaching the friction recitation of limitation [1c]. We credit Patent Owner's arguments that the coefficient of friction data Petitioner derives from Phillips's general disclosures about nylon and Teflon cannot simply "be imported wholesale so long as it involves the same material." PO Resp. 52. Petitioner points to the '854 patent's general statement that the coefficient of friction between a rider or ride vehicle and the slide surface of a "typical" dry slide is often within a range of between 0.15 to 0.3, but this is insufficiently tied to Phillips's disclosure to meet the Petitioner's burden of demonstrating obviousness. Pet. 30.

As persuasively argued by Patent Owner, coefficient of friction data may ultimately depend on many factors. PO Resp. 52; Sur-reply 21–22; Tr. 39:22–23; Ex. 2029, 109:21–110:23 (Petitioner's expert agreeing that there are at least ten (10) different factors that influence CoF data) (citing Ex. 1027)). Patent Owner notes that Petitioner's expert agrees that CoF

measurements can depend upon the condition of the contacting surfaces, the chemistry of the contacting surfaces, and the testing setup (Ex. 2029, 67:23–68:1–4, 68:10–16), and that the morphology of the contacting surfaces would also affect CoF measurements (*id.* at 68:5–9; 71:23-72:5). PO Resp. 25–26. Finally, as Patent Owner notes, the “lowest CoF for a mesh is 0.26. EX1009, Table 2, Fabric No. 15. In fact, the only evidence of CoF data for mesh is found in EX1009, Table 2.” PO Resp. 50. Even if we were to agree with Petitioner that one of ordinary skill in the art would have been motivated to select a nylon mesh (not specified in Phillips’s list) for the bottom of the ride vehicle, the lowest CoF for a *mesh* identified by Petitioner is outside of the range identified in limitation [1c]. The record before us does not adequately establish that a person having ordinary skill in the art would have had reason to create a mesh ride vehicle bottom that would have a reasonable expectation of success in reaching claim 1’s recitation of a CoF of “about 0.03 to 0.2.”

Thus, Petitioner’s argument based on Phillips’s disclosure of some form of nylon and some form of Teflon (and possible combinations thereof) having the specific coefficient of friction range given in limitation [1c] breaks down, because the building blocks of the obviousness argument are not sufficiently identified in Phillips alone, nor in the supporting testimony. Accordingly, we determine that Petitioner’s arguments and evidence fail to show that Phillips renders the challenged claims obvious.

6. Conclusion

Based on the foregoing, we determine that Petitioner has not established by a preponderance of the evidence that claims 1–4, 6, and 7 would have been anticipated by or obvious in view of Phillips.

H. Ground 1B - Alleged Obviousness Based on Phillips and WN0400

Petitioner contends the combination of Phillips and WN0400 renders claims 1–4, 6, 7, 14–17, and 22–28 obvious. Pet. 36–56. Claims 1, 22, and 25 are independent. Claims 2–4, 6, 7, and 14–17 depend directly or indirectly from claim 1; claims 23, 24, and 26⁹–28 depend directly or indirectly from claim 22.

Claim 1, limitation [1b-iii] recites a recreational slide system and requires a ride vehicle including “a mesh layer that forms a bottom surface configured to contact the slide surface.” Claim 1, limitation [1c] recites “wherein a coefficient of friction between the mesh layer of the ride vehicle and the non-wet lubricated slide surface is within a range of between about 0.03 to about 0.2.”

Claim 22 is directed to a “woven mesh layer” wherein the mesh layer “includes a plurality of interstitial openings that define an open area of the mesh layer, wherein the open area of the mesh layer is within a range of between about 35% to about 50%.” We focus our analysis on these disputed limitations for this ground. Important to our analysis below, claim 22 does not recite the coefficient of friction limitation required by claim 1. Claims 27 and 28 depend from claim 22, but these claims require “a coefficient of friction” similar to claim 1, limitation [1c]. Accordingly, we reach different outcomes based on these distinctions.

⁹ As discussed *infra* Section II.L.2., we find claim 26 unpatentable as indefinite under 35 U.S.C. § 112. Petitioner does not explain in the Petition how its position that claim 26 is indefinite reconciles with its position that claim 26 would have been obvious. *See, e.g.*, Pet. 54–55, 85, 90–91. In view of our finding below regarding indefiniteness, we do not address the alleged obviousness of claim 26.

1. Mesh layer (required by all challenged claims)

The parties dispute whether the Phillips-WN0400 combination discloses a mesh layer as the bottom surface of a ride vehicle, and whether a person of ordinary skill would have been motivated to use a mesh layer. As discussed above, we construe “mesh layer” as a “woven material that is permeable through interstices.”

Petitioner argues Phillips discloses the bottom surface of a ride vehicle formed from a low-friction sheeting material such as “nylon, Teflon, sailcloth, Dacron, [and] vinyl.” Pet. 42 (referring to Pet. § II (citing Ex. 1004, 4:43–46, 5:27–35, 7:7–23, 8:40–43, 8:49–61, 9:9–13)). Petitioner further argues that “Phillips describes that the membrane forming the bottom surface of the ride vehicle is made of a “nylon” (Ex. 1004, 4:43–46; Ex. 1003 ¶ 142) and in the combination of Phillips and WN0400, “the low-friction bottom is formed from a nylon mesh, in accordance with the suggestions of WN0400 (“400 Micron Nylon Mesh”) (Ex. 1006, 1). Pet. 43 (also referring to Petitioner’s Ground 1A arguments for claim 1 and claims 2–4, 6, and 7).

Petitioner’s proposed combination of Phillips and WN0400 is based on Phillips’s teaching of a low friction slide system with a “low friction bottom formed from nylon mesh having the characteristics taught by WN0400, to achieve known benefits.” *Id.* at 37 (citing Ex. 1003 ¶¶ 130–140). Petitioner argues a person of ordinary skill in the art would have been motivated to use WN0400’s 400-micron nylon mesh as the low friction bottom surface of Phillips’s ride vehicle, for multiple reasons. *Id.* at 37–42. Petitioner argues a person of ordinary skill would have recognized WN0400’s nylon mesh as providing low friction because Phillips describes

using nylon, which was a known durable and low friction material. *Id.* at 38–39 (citing Ex. 1011, 5). Petitioner argues mesh fabrics with relatively larger apertures between strands were known to have an advantageously lower coefficient of friction compared to more tightly woven fabrics (*id.* at 40, citing Ex. 1010) and a person of ordinary skill would have understood the advantage of sliding with a more open weave fabric. *Id.* Petitioner further argues that monofilament mesh fabrics were known to provide an advantage in sliding over surfaces, and a person of ordinary skill would have been motivated to use WN0400’s monofilament mesh for this advantage. *Id.* at 41 (citing Ex. 1007, 1). Petitioner further argues a person of ordinary skill would have understood a variety of suitable nylon meshes could be used as a bottom surface and would have sought a mesh that had large apertures between threads, such as WN0400. *Id.* at 41–42. Finally, Petitioner argues a person of ordinary skill would have applied known techniques (WN0400’s nylon mesh) to a known device (Phillips’s slide system) to yield predictable results with a reasonable expectation of success because Phillips already disclosed such a material was appropriate for such a system. *Id.* at 42. Petitioner provides an element-by-element analysis of claims 1–4, 6, 7, 14–17, and 22–28 identifying where in the references Petitioner believes each element can be found. *Id.* at 42–56 (citing Ex. 1003 ¶¶ 141–192).

For claim 14, which requires that the “the mesh layer of the ride vehicle comprises a weave of threads formed of monofilament synthetic fibers,” Petitioner also indicates that “WN0400 expressly describes a thread count per inch, confirming the mesh structure.” Pet. 44; Ex. 1006, 2; Ex. 1003 ¶ 45. Petitioner provides mapping to WN0400 for the additional fiber and weave limitations of claims 15–17. Pet. 44–47.

For claim 22, which requires that the “mesh layer includes a plurality of interstitial openings that define an open area of the mesh layer, wherein the open area of the mesh layer is within a range of between about 35% to about 50%,” Petitioner argues that “POSITA would have understood that WN0400’s description of a 45% open area mesh with 400 micron hole opening is a mesh with interstitial openings defining a mesh with 45% open area.” Pet. 52; Ex. 1006, 1–2; Ex. 1003 ¶¶ 155–157, 170–171.

Patent Owner argues Petitioner fails to demonstrate a person of ordinary skill would have been motivated to incorporate a mesh layer, and specifically WN0400, into the bottom of Phillips’s ride vehicle with a reasonable expectation of success. PO Resp. 52–53. More particularly, Patent Owner argues (1) Phillips consistently teaches “sheeting material,” not mesh, and expressly distinguishes it from “nylon netting”; (2) “in light of the undisputed fact that Phillips discloses low friction based on sheeting material, WN0400 does not provide any benefit to Phillips;” (3) a POSITA would know that sheeting is more durable than a mesh; (4) a “POSITA would not be motivated to combine the mesh layer disclosed by WN0400 with Phillips, because doing so would require extensive and additional manufacturing steps, only to achieve worse results;” and (5) a “POSITA would know from Phillips that adhesive would need to be utilized to adhere WN0400 to the bottom of the ride vehicle” and “the adhesive would permeate through WN0400 and destroy any benefits possibly stemming from the combination.” PO Resp. 52–57.

Patent Owner also argues that Petitioner has not established that using WN0400 constitutes a “known technique” applicable to recreational slide systems. *Id.* at 57. More particularly, Patent Owner argues: “There is no

teaching or suggestion in the record that WN0400 nylon mesh has ever been used to improve slide systems or any analogous devices, and therefore a POSITA would not have recognized it as providing an improvement in the claimed context.” *Id.* at 58. Additionally, Patent Owner argues that Petitioner fails to demonstrate how to implement the bottom of Phillips’s ride vehicle with a mesh, and that Petitioner has failed to address morphology, durability, affixing to the bottom of the ride vehicle, and Phillips’s disclosure of adhesive as the mechanism of affixing to the bottom of the ride vehicle. *Id.* at 58–59. Finally, Patent Owner argues that Petitioner has not provided evidence of a reasonable expectation of success in adhering WN0400 to the bottom of Phillips’s ride vehicle. *Id.* at 59–64.

Petitioner replies, first, that it is uncontroverted that “a POSITA would have been motivated to implement Phillips’ ‘nylon’ bottom surface in accordance with WN0400 to *facilitate sourcing* by utilizing a material commercially available from nylon mesh suppliers.” Reply 8 (citing Pet. 40). Petitioner argues (1) a POSITA would have been motivated to implement Phillips’ nylon as mesh, because “Phillips already recites woven materials and selecting a more open weave would have been obvious to a POSITA because open weaves were known to slide with lower friction over a surface;” (2) Phillips does not teach away from mesh, because sheeting and mesh are not mutually exclusive, and a POSITA would not have understood Phillips’s “sheeting” as prohibiting a “mesh” layer; (3) nylon mesh was known to be durable, and a POSITA would have used nylon mesh to “promote a low CoF and sourcing;” and (4) attaching the mesh layer to the ride vehicle was routine for a POSITA, using any number of known techniques. *Id.* at 8–14.

Patent Owner responds that it has “demonstrated numerous reasons why a POSITA would not be motivated to implement WN0400, including that Phillips discloses sheeting as both low-friction and durable.” Sur-reply 13. Patent Owner also responds that a POSITA would not look to looser weaves and “would not disregard sheeting and turn to mesh fabrics characterized by open spaces.” *Id.* at 14.

After considering the evidence and arguments presented by both parties, we determine that Petitioner supports, by a preponderance of evidence, its position that a person of ordinary skill in the art would have been motivated to combine the teachings of Phillips and WN0400 to arrive at the claimed subject matter with a reasonable expectation of success. We address Patent Owner’s arguments below.

Although Patent Owner argues a person of ordinary skill would not have been motivated to implement the bottom of Phillips’s ride vehicle with a mesh, we disagree. PO Resp. 42. The passage of Phillips describing *attaching* sliding elements using, *inter alia*, nylon netting (Ex. 1004, 9:50–55 (“Attachment can be by any well-recognized means such as through the use of Velcro hook and loop connectors, snaps, zippers, ropes, springs, *nylon netting* and similar expedients.”) (emphasis added)) does not obviate Phillips’s inclusion of nylon in its list of membrane materials or sheeting. *Id.* at 4:40–46 (“membrane 19 in the form of low friction durable sheeting material” can be “composed of low friction high durable material such as a member selected from the group consisting of *nylon*, Teflon, sailcloth, Dacron, vinyl, artificial turn, synthetic carpet and polyester resins”). In our view, Phillips’s description of attaching various sliding elements is part of a specific embodiment for creating larger slides (Ex. 1004, 9:50–55) and

unrelated to its list of example materials for the slide and ride vehicle surfaces (*id.* at 4:45–46). Also, as noted above, we have construed “mesh layer” to mean a “woven material that is permeable through interstices.” *See supra* Section II.D.1. Phillips’s characterization of its “low friction, durable membrane” that can be “sheeting material” (Ex. 1001, 1:23–25), or “nylon” or “sailcloth,” is consistent with our construction of “mesh layer.” The absence of nylon netting specifically from the list of examples of sheeting material (Ex. 1004, 4:45–46) does not teach away from using mesh material for the bottom of the ride vehicle. *See In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004) (prior art did not “teach away” because such disclosure did not criticize, discredit, or otherwise discourage the solution claimed).

We also determine that a person having ordinary skill in the art would have recognized that WN0400 benefits Phillips. PO Resp. 53, 55. Petitioner, noting that “Phillips already recites woven materials,” identifies reasons that one of ordinary skill in the art would have been motivated to select a more open weave that would slide with lower friction over a surface. Pet. 40–42; Reply 9; Ex. 1044 ¶¶ 36–37; Ex. 1009, 3–5 (“Variation of mesh size in monofilament fabrics affects the frictional resistance of these fabrics.”). We agree with Petitioner that “a POSITA would have thus looked to mesh such as WN0400 to advance Phillips’ express objectives of ‘low friction’ vehicle bottom made of ‘nylon.’” Reply 9. We are persuaded by Petitioner’s testimony that a person of ordinary skill would have been familiar with properties of nylon, including durability and sliding ability, and would have been able to find commercially available nylon mesh such as the one described in WN0400. Ex. 1003 ¶ 137; *see In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (“[A] prior art reference must be ‘considered together

with the knowledge of one of ordinary skill in the pertinent art.”). Regarding the durability of WN0400 (PO Resp. 55), we disagree with Patent Owner’s characterization of Phillips’s material as “sheeting” to the exclusion of “mesh.” *See supra* Section II.D.1.¹⁰ Phillips discloses use of “nylon” as one of the materials for its base, and together with Petitioner’s arguments and our claim construction, these demonstrate that WN0400’s nylon mesh is a suitable nylon for Phillips’s base. Petitioner identifies reasoning (“to promote a low CoF and sourcing,” Reply 13) that would motivate one of ordinary skill in the art to use WN0400’s nylon mesh in Phillips’s system, and we are not presented with persuasive countervailing evidence of WN0400’s unsuitability as a mesh layer.

Regarding Patent Owner’s assertion of “extensive and additional manufacturing steps” (PO Resp. 55) that would destroy the benefits of the combination, we are unpersuaded that one of ordinary skill in the art would not be motivated to, or not be able to, attach WN0400’s mesh to Phillips’s slide. Reply 13–14. As noted by Petitioner, Phillips allows for the low friction membrane to be “appended” to a ride vehicle, and does not require it to be adhered. *Id.* (citing Ex. 1004, 3:19–22, 10:18–20). We agree that one

¹⁰ Although Patent Owner consistently refers to Phillips’s material as “sheeting” in what appears to be an attempt to distinguish it from “mesh,” Phillips just as equally refers to these same materials as a “membrane.” Ex. 1004, 1:23–25 (“low friction, durable membrane” that can be “sheeting material”), 3:27–28 (“highly durable low friction membrane which acts as a sheeting layer”); 3:32–33 (“This membrane, in addition to being used as a stand-alone flexible sheet . . .”); 4:40–41 (“membrane 19 in the form of low friction durable sheeting material”); 9:48–49 (“sheet or membrane of highly durable low friction material”); *see also* PO Resp. 18 (“Phillips consistently describes the materials used in the sliding vehicles as membranes or sheeting materials.”).

of ordinary skill in the art “would have understood how to attach a mesh layer to a ride bottom” to avoid potential problems with adhesive, using any number of known techniques. Reply 13–14; Ex. 1045, 73:2–19; 71:12–1, 68:10–70:14.

Regarding Patent Owner’s assertions that there would be no reasonable expectation of success, we note that obviousness requires an expectation of success only to be reasonable, not absolute. *See Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1364 (Fed. Cir. 2007). We are persuaded by Petitioner’s argument, testimony and evidence on this record (Pet. 42; Ex. 1003 ¶¶ 134–140; Ex. 1009, 4) that an ordinarily skilled artisan would have understood that the components identified by Petitioner would have been able to be assembled as proposed in Petitioner’s Phillips-WN0400 combination with a reasonable expectation of success.

2. Coefficient of friction (Claims 1–4, 6, 7, 14–17, 27, 28)

Petitioner argues the materials Phillips describes for its slide surface and ride vehicle bottom provide a coefficient of friction within the claimed range, and that even though Phillips does not expressly quantify a range of coefficients of friction, it states its slide system achieves “low friction.” Pet. 26–27. According to Petitioner, a person of ordinary skill in the art would have recognized Phillips’s description of materials for the contacting surfaces of the slide and ride vehicle, e.g., nylon, Teflon, and sailcloth, as disclosing frictional coefficients within the claimed range. *Id.* (citing Exs. 1021, 1026, 1027). Petitioner asserts that the materials described by Phillips are the same as those in the ’854 patent specification, i.e., a Teflon slide surface and nylon ride vehicle bottom; Petitioner argues that this establishes a prima facie case of anticipation or obviousness. *Id.* at 28 (citing

In re Best, 562 F.2d 1252, 1255 (CCPA 1977)). Petitioner also asserts the background section of the '854 patent specification acknowledges that prior art dry slides achieved a frictional coefficient overlapping the claimed range: “The coefficient of friction between a rider (or ride vehicle) and the slide surface of a typical dry slide is often within a range of between 0.15 to 0.3, and is typically about 0.25.” Ex. 1001, 1:48–51; Pet. 28–29.

Patent Owner argues that the combination of Phillips and WN0400 does not teach the claimed coefficient of friction range of between about 0.03 to about 0.2. PO Resp. 64. Patent Owner argues that a “POSITA understands that CoF data is dependent upon” a number of “factors, including material, morphology, and testing conditions.” *Id.* at 65.

Petitioner replies that the Phillips-WN0400 combination provides the coefficient of friction required by limitation 1[c], discussing the '854 patent itself, the CoF of the proposed combination, and Dr. Wang’s testimony. Reply 14–16.

Patent Owner responds that the combination does not teach a “mesh layer” with the claimed CoF range. Sur-reply 11. Patent Owner faults Petitioner’s reliance on Ex. 1009, Table 2, arguing that “none of the CoF data can be relied upon” because the categories in that table “do not have comparable friction characteristics to the circumstances presented here.” *Id.* (citing Ex. 2029, 113:1–116:19). Patent Owner also faults Petitioner for failing “to acknowledge that Petitioner’s expert admits that the associated CoF values do not bear on the claimed CoF range because CoF is not merely a property of the materials of the surfaces interacting with each other.” *Id.* at 12.

As discussed above, we do not construe “coefficient of friction” as requiring that it be measured by a specific ASTM test method. To the extent Patent Owner’s arguments are based on its own proposed construction, which we have not adopted, we do not find them persuasive. We focus our discussion on the other disputed aspects of Petitioner’s arguments.

Claim 1 requires that the coefficient of friction between the mesh layer of the ride vehicle and the non-wet lubricated slide surface is within a range of between about 0.03 to about 0.2. To demonstrate that the proposed combination meets this limitation, Petitioner relies on Phillips’s suggestion of “low friction” between slide and ride vehicle, and Phillips’s materials that purportedly attain “low friction.” Pet. 26. The Petition, however, does not point to any number or range of numbers in Phillips to meet limitation [1c]. *Id.*; *see also supra* Section G (determining Phillips alone does not disclose or suggest the coefficient of friction of limitation [1c]).

The Petition also states, for its Ground 1B argument relying on the combination of Phillips and WN0400 with respect to limitation [1c], “*See* [1c] (Ground 1A).” Pet. 43. Although Ground 1B overall is premised on a combination of Phillips and WN0400, as to limitation [1c] itself, the Petition refers back to its Ground 1A arguments, which rely on Phillips alone. *Id.* The Petition provides no other discernible support for its assertion that the combination of Phillips and WN0400 would have a coefficient of friction within the claimed range.

Although we acknowledge that absolute predictability is not the standard for reasonable expectation of success, the question here is whether the proposed combination would reasonably have been expected to have a particular property (CoF) required by the claims. Petitioner has not met its

burden of proof in this regard. As discussed above, we are not persuaded that Petitioner has shown that limitation [1c] would have been obvious based on Phillips alone. *Supra* Section G. Petitioner in Ground 1B provides no persuasive analysis showing that WN0400's nylon mesh, if and when substituted for the layer of Phillips, would have resulted in a slide system having a coefficient of friction within the claimed range. We cannot independently determine, from the evidence before us, what the expected coefficient of friction of the combination would be, and whether it would fall into the range of limitation [1c]. 35 U.S.C. § 312(a)(3) (a Petition is required to identify "with particularity[] the grounds on which the challenge to each claim is based, and the evidence that supports the grounds for the challenge."); *DeSilva v. DiLeonardi*, 18 F.3d 865, 866–67 (7th Cir. 1999) ("A brief must make all arguments accessible to the judges, rather than ask them to play archeologist with the record."); 37 C.F.R. § 42.22(a)(2) (the "petition . . . must include . . . [a] full statement of the reasons for the relief requested").

On the full record now before us, Petitioner has not articulated or provided sufficient citations to evidence to support how the cited references teach or suggest the coefficient of friction of challenged claims 1–4, 6, 7, 14–17, 27, and 28. Thus, for the reasons expressed herein, we determine that the obviousness ground based on Phillips and WN0400 does not teach or suggest the claimed coefficient of friction by a preponderance of the evidence before us. For all the claims challenged under this ground that contain a coefficient of friction limitation, we determine that none of the remaining arguments relating to the dependent claims cure the deficiency identified herein. Thus, we determine that Petitioner has not established by a

preponderance of the evidence that claims 1–4, 6, 7, 14–17, 27, and 28 would have been obvious over the combination of Phillips and WN0400.

3. Open area (Claims 22–25)

Claims 22–25 do not recite a coefficient of friction limitation. Those claims do require a mesh layer (“a woven mesh layer that forms a bottom surface of the ride vehicle”); we address woven mesh layer above.

Independent claim 22 additionally requires that the “mesh layer includes a plurality of interstitial openings that define an open area of the mesh layer, wherein the open area of the mesh layer is within a range of between about 35% to about 50%.” Petitioner argues that “WN0400 describes a ‘400 Micron Nylon Mesh 45% Open Area’ formed from ‘Monofilament Nylon 6 fiber 42 threads per inch.’” Pet. 52 (citing Ex. 1006, 1–2). According to Petitioner, a “POSITA would have understood that WN0400’s description of a 45% open area mesh with 400 micron hole opening is a mesh with interstitial openings defining a mesh with 45% open area.” *Id.* (citing Ex. 1003 ¶¶ 155–157).

Independent claim 25 additionally requires that the mesh layer includes “a plurality of weft threads each having a thread diameter within a range of between 0.1 mm to 0.6 mm” and “a plurality of warp threads each having a thread diameter within a range of between about 0.1 mm to about 0.6 mm.” Petitioner argues that “WN0400 describes a ‘400 Micron Nylon Mesh 45% Open Area’ formed from ‘Monofilament Nylon 6 fiber 42 threads per inch.’” Pet. 54 (citing Ex. 1006, 1–2). According to Petitioner, a “POSITA would have understood from these teachings that the WN0400’s “nylon 6 threads have a diameter of about 0.2mm.” *Id.* (citing Ex. 1003 ¶¶ 149–154, 180).

As discussed above, Petitioner identifies multiple reasons that “would have prompted a POSITA to implement Phillips’ ‘low friction’ slide system” with a “low friction bottom formed from nylon mesh having the characteristics taught by WN0400, to achieve known benefits.” *Id.* at 37–42.

Patent Owner’s arguments regarding claims 22–25 are generally coextensive with the “mesh layer” obviousness arguments Patent Owner makes for claim 1, which we have discussed above. *See* PO Resp. 52–64. Patent Owner does not present separate persuasive arguments directed to WN0400’s disclosure of the open area or thread diameter of the mesh layer.

As discussed above, we are persuaded that Petitioner prevails in its arguments that the combination of Phillips and WN0400 discloses the mesh layer. Accordingly, we determine that Petitioner prevails in its arguments by a preponderance of the evidence that the combination of Phillips and WN0400 would have rendered obvious claims 22–25.

4. Conclusion

Based on the foregoing, and considering the remainder of Petitioner’s persuasive evidence and argument that has not been challenged by the Patent Owner, we determine that Petitioner has established by a preponderance of the evidence that claims 22–25 would have been unpatentable as obvious based on the combination of Phillips and WN0400. Petitioner has not established by a preponderance of the evidence that claims 1–4, 6, 7, 14–17, 27, and 28 would have been obvious based on this combination.

I. Ground 2A - Alleged Obviousness Based on Phillips and Fallgatter

Petitioner argues that the combination of Phillips and Fallgatter renders claims 1–7 obvious. Pet. 56–75. Petitioner’s proposed combination is based on Phillips’s and Fallgatter’s teachings of a dry, low friction slide

for use with a fabric bottom ride vehicle. *Id.* at 58–59. Petitioner argues that multiple reasons would have prompted a POSITA to implement Phillips’s “low friction” slide system with a kinetic coefficient of friction value and woven fabric vehicle bottom (as suggested by Fallgatter), to achieve known benefits. *Id.* at 58–64 (citing Ex. 1003 ¶¶ 196–211). Petitioner asserts motivations to combine (1) “to provide a recreational slide with a low numerical coefficient of friction between the slide and the ride vehicle” “to enhance system performance by providing a fast and fun ride experience to users;” (2) “to achieve Phillips’ directive to provide a durable, low-friction layer on each of the slide and ride vehicle,” understanding that “various combinations of the materials that Phillips’ teaches can be used for the slide and vehicle would achieve coefficients of friction in the range taught by Fallgatter” (citing Ex. 1003 ¶¶ 203–205); (3) “to utilize a material for the ride vehicle bottom that promotes low friction with the slide surface;” (4) to “allow for simple upkeep and maintenance” and “allow for customization of the coefficient of friction between the ride vehicle and the sliding surface in different areas of the slide;” (5) to “achieve cost savings and economical manufacturing;” and (6) to apply known techniques (“Fallgatter’s teaching of an appropriate CoF for a low friction coating and a ride vehicle”) to a known device (“Phillips’ recreational slide system”) to yield predictable results. *Id.*

Petitioner provides an element-by-element analysis of claims 1–7 identifying where in the references Petitioner believes each element can be found. *Id.* at 64–75 (citing Ex. 1003 ¶¶ 212–241). With respect to limitation [1b-iii] Petitioner refers to its earlier arguments (Section VI.A.2.; Ex. 1004, 4:43–46; 7:10–12) to argue that Phillips expressly describes a mesh layer,

and “Fallgatter’s suggestions” of a “woven textile” such as “nylon, polyester and polyethelyene,” would lead a POSITA to implement the bottom of the vehicle with a “‘woven textile’ mesh “in accordance with Fallgatter’s suggestions.” *Id.* at 67 (citing Ex. 1005 ¶ 6). With respect to limitation [1c], Petitioner argues that “Phillips-Fallgatter is implemented with the slide surface and ride vehicle bottom formed from materials selected from Phillips’ list to achieve a coefficient of friction between the materials of less than 0.21, as Fallgatter teaches is appropriate for a recreational slide.” *Id.* at 68 (citing Ex. 1005 ¶¶ 42, 12; Ex. 1003 ¶¶ 221–230 (arguing that 0.21 is an upper limit of the coefficient of friction between Fallgatter’s slide surface and ride vehicle)). Petitioner also argues that the ’854 patent defines that “[a]s used herein relative to the coefficient of friction, ‘about’ is intended to mean +/- 10%.” Ex. 1003 ¶ 229 (citing Ex. 1001, 2:34–36). Thus, “the claimed range with the +/- 10% that the ’854 patent intends the word ‘about’ to indicate would have been understood by a POSITA to be a range from 0.027 to 0.22.” *Id.*

Patent Owner argues, first, that the combination of Phillips and Fallgatter does not teach the claimed “mesh layer.” *Id.* at 66. According to Patent Owner, “Fallgatter does not disclose that the low friction surface is a nylon mesh layer, but rather a low CoF material on top of a nylon textile or alternatively, a nonwoven textile.” *Id.* at 67. Second, Patent Owner argues that the combination of Phillips and Fallgatter does not teach the claimed coefficient of friction range. *Id.* at 67–69. “Petitioner relies on Fallgatter solely for its disclosed CoF values – values that apply to Fallgatter’s silicon-coated slide system, not to Phillips’ slide system;” “Fallgatter makes clear it is the coating - not the substrate - that produces the reported CoF values,”

and that the CoF of a system without such a coating, like Phillips's, "must therefore exceed 0.25." *Id.* at 67–68. Patent Owner also argues that Petitioner's alleged motivation to combine is conclusory and contradictory. *Id.* at 69.

Petitioner replies that Patent Owner "never specifically addressed the Petition's motivations to implement Phillips' slide using Fallgatter's suggestion to achieve a low numerical CoF and a woven fabric vehicle bottom," but "disputes only that Fallgatter provides the claimed mesh layer and CoF range." Reply 17–18. Petitioner faults the Response for "relying on an improperly narrowed interpretation" of mesh layer. *Id.* at 18 (discussing limitation [1b-iii]). Petitioner also argues that "Fallgatter provides a straightforward suggestion of numerical coefficient of friction values between the slide and vehicle in a slide system that a POSITA would have recognized as desirable to be below," and faults the Response for focusing "on a composition of Fallgatter's slide surface, but that is not the combination." *Id.* at 18–19 (discussing limitation [1c]).

Patent Owner responds that the Reply "effectively concedes that Fallgatter does not cure Phillips' failure to disclose or suggest a mesh layer." Sur-reply 22. Patent Owner further responds that "Petitioner has failed to demonstrate that the Phillips system could or would achieve Fallgatter's CoF values because it is not Fallgatter's system, but a different system altogether," and, even if the two references were combined, "the lowest CoF for a mesh is 0.26." *Id.* at 23.

Regarding the coefficient of friction, we are not persuaded by Petitioner's arguments and evidence that the combined Phillips-Fallgatter system would have a coefficient of friction that would have rendered

obvious limitation [1c]. As argued by Petitioner, “Phillips-Fallgatter is implemented with the slide surface and ride vehicle bottom formed from materials selected from Phillips’ list to achieve a coefficient of friction between the materials of less than 0.21, as Fallgatter teaches is appropriate for a recreational slide.” Pet. 68. Thus, Petitioner continues to rely on Phillips’s materials to disclose the slide surface and the ride vehicle bottom, rather than turning to Fallgatter’s materials. As we have determined above, Phillips’s materials do not provide the coefficient of friction of limitation [1c]. *See supra* Section II.G. As persuasively argued by Patent Owner, coefficient of friction data depends on a number of factors. PO Resp. 52; Sur-reply 21–22; Ex. 2029, 109:21–110:23 (Petitioner’s expert agreeing that there are at least ten (10) different factors that influence CoF data) (citing Ex. 1027)). As Patent Owner notes, and as Petitioner has not persuasively rebutted, the “lowest CoF for a mesh is 0.26. EX1009, Table 2, Fabric No. 15. In fact, the only evidence of CoF data for mesh is found in EX1009, Table 2.” PO Resp. 50. Thus, even if a person of skill in the art would have been motivated to select a nylon mesh for the bottom of the slide surface, the lowest CoF for a mesh identified by Petitioner is outside of the range identified in limitation [1c]. Ex. 1009, Table 2, Fabric No. 15.

Additionally, Petitioner states that it relies on Phillips’s materials (rather than Fallgatter’s materials) for the combination, and that it relies on Fallgatter for its teaching of a coefficient of friction. Pet. 68. This reliance, however, does not reconcile with the disclosure of Fallgatter itself, which requires a distinct silicon coating on its slide body material in order to achieve Fallgatter’s stated coefficient of friction. Ex. 1005 ¶¶ 6 (the “coating defines the sliding surface upon which riders may slide”), 16 (the slide body

comprises “a flexible textile substrate” and “a friction-reducing coating deposited on the textile substrate;” the “friction-reducing coating comprises a silicone compound and having a dry coefficient of friction less than a coefficient of friction of the textile substrate”). Petitioner does not explain the disconnect between using the materials of Phillips, which have their own defined or definable coefficient of friction, and then imputing to them a coefficient of friction disclosed in a different system (Fallgatter) using a different set of materials including a silicon coating. Coefficient of friction data depends on properties of the materials involved, and can vary depending on, *inter alia*, a multitude of factors having to do with those specific materials. Ex. 2026 ¶¶ 170–173; Ex. 2029, 109:21–110:23. If the slide surface and the slide body of Phillips do not have the coefficient of friction required by limitation [1c] (*see* Section II.G), then looking to Fallgatter for an aspirational coefficient of friction when Fallgatter uses different materials or coatings does not make Petitioner’s case.

Accordingly, Petitioner has not sufficiently established by a preponderance of the evidence that claims 1–7 would have been unpatentable based on the combination of Phillips and Fallgatter.

J. Ground 2B - Alleged Obviousness Based on Phillips, Fallgatter, and WN0400

Petitioner contends the combination of Phillips, Fallgatter, and WN0400 renders claims 1–7, 14–17, and 22–28 obvious. Pet. 75–86.

Petitioner argues a person of ordinary skill would have been motivated to implement a combination of Phillips, Fallgatter, and WN0400 for generally the same reasons discussed above for the Phillips-WN0400 combination. Pet. 75–80. More particularly, Petitioner argues that “a POSITA would have been aware that various materials described by

Fallgatter and Phillips are conventionally woven or sometimes woven: for example: nylon, Dacron, sailcloth, etc.,” and “a POSITA would have been motivated to choose nylon because it is described by both Phillips and Fallgatter as an appropriate material and well-known to be a durable low-friction material.” *Id.* at 75–76. Additionally, Petitioner argues that a POSITA, “motivated to select a woven nylon fabric for the ride vehicle bottom surface, would have looked to references that describe various nylon fabrics to select an appropriate fabric, and would have found WN0400 as one suitable nylon mesh for use as the ride vehicle bottom surface.” *Id.* at 76. According to Petitioner, a POSITA would have (1) “understood that implementing the ride vehicle of Phillips-Fallgatter with a nylon mesh bottom as taught by WN0400 would have achieved the ‘low friction’ requirement of Phillips;” (2) “found the commercially available mesh material described in WN0400 (or any number of others like it)” was “a suitable option for providing a woven textile low-friction bottom for the ride vehicle;” (3) “understood that WN0400 is a mesh having a weave that includes holes of 0.016 inches and 45% open area and would have further understood that this mesh would be a suitable option for use as the bottom surface of the ride vehicle;” (4) “been motivated to use the WN0400 which is formed from monofilament threads to achieve the[] advantages” of smooth surface and minimal flow restriction and surface loading of particles; (5) selected “a nylon mesh including WN0400 – 400 Micron Nylon Mesh 45% Open Area mesh as a suitable option;” and (6) “been prompted to combine Phillips, Fallgatter, and WN0400 because doing so was the application of known techniques (WN0400’s commercially available nylon mesh) to a known device (the Phillips-Fallgatter recreational slide system)

ready for improvement to yield predictable results.” *Id.* at 76–80. Petitioner relies on the disclosures of Phillips, Fallgatter, and WN0400 described above as teaching a mesh layer on the bottom surface of a ride vehicle (limitation [1b-iii]). *Id.* at 80–81. Petitioner relies on the disclosures of Phillips and Fallgatter described above as teaching a coefficient of friction between the mesh layer and slide surface within the claimed range (limitation [1c]). *Id.* at 82.

Patent Owner argues Petitioner fails to demonstrate a person of ordinary skill would have been motivated to combine Phillips and Fallgatter, and Phillips and WN0400, partly for the reasons discussed in Patent Owner’s previous sections of the Response. PO Resp. 69–72. More particularly, Patent Owner argues that this ground relies on impermissible hindsight and fails for lack of motivation to combine WN0400 with Phillips and Fallgatter. *Id.* at 70. Patent Owner reiterates its concerns with Phillips’s alleged teaching of “sheeting, not mesh” (*id.* at 71) and expresses concerns with Fallgatter’s teachings that “reinforce the use of surface coatings to achieve low CoF” but allegedly “do not suggest altering the underlying textile substrate to a mesh.” *Id.*

Petitioner replies that Patent Owner is “repeating arguments raised in the context of Ground 1B” but that Fallgatter “provides additional express teachings of numeric CoF values to attain, and use of a ‘woven textile,’” to teach the limitations of [1c]. Reply 19.

Patent Owner responds that the combination requires a “mesh layer” and “there is no evidence that the claimed CoF range could or would be achieved.” Sur-reply 24.

As discussed above, we determined that Petitioner has not shown that claims 1–4, 6, 7, 14–17, 27, and 28 would have been obvious based on Phillips and WN0400 (Ground 1B), but has shown that claims 22–25 would have been obvious based on Phillips and WN0400 (also Ground 1B). We also determined that Petitioner has not shown that claims 1–7 would have been obvious over Phillips and Fallgatter (Ground 2A). For largely the same reasons given in Grounds 1B and 2A, we determine that Petitioner, on this record, has not shown by a preponderance of the evidence that claims 1–7, 14–17, 27, and 28 would have been obvious. The three-reference combination in this Ground 2B does not rectify the shortcomings identified above in the combinations proposed for Grounds 1B and 2A.

With respect to claims 22–25,¹¹ we are persuaded for largely the reasons given in Ground 1B that the combination proposed in this Ground 2B meet Petitioner’s burden to demonstrate by a preponderance of the evidence that the proposed combination meets the limitations of those claims. Petitioner refers back in substantial part to its Ground 1B arguments for these claims. Pet. 82–85. The addition of Fallgatter to this Ground 2B does not diminish the effectiveness of Petitioner’s reliance on WN0400 to disclose a mesh layer with the required dimensions. *See supra* Section II.H.3. Petitioner provides sufficient reasons to combine the relied-upon references with a reasonable expectation of success. Pet. 75–80 (citing Ex. 1003 ¶¶ 242–256). We acknowledge Patent Owner’s arguments regarding alleged hindsight (PO Resp. 69–72) but find the proposed combination sufficiently supported on this record.

¹¹ *See supra* n.9 regarding claim 26.

Based on the foregoing, we determine that Petitioner has not established that claims 1–7, 14–17, 27, and 28 would have been unpatentable based on the combination of Phillips, WN0400, and Fallgatter, but has established that claims 22–25 would have been unpatentable based on the combination of Phillips, WN0400, and Fallgatter.

K. Alleged Lack of Enablement of Claims 8–13 (Ground 3A)

Claim 8 recites “[t]he recreational slide system of claim 3, wherein the dry lubricant material includes a resin, a lubricant, a thermal conductor, and a hardener.” Ex. 1001, 12:41–43. Claim 3 depends from claim 1, and claim 1 recites “wherein a coefficient of friction between the mesh layer of the ride vehicle and the non-wet lubricated slide surface is within a range of between about 0.03 to about 0.2.” *Id.* at 12:21–23. Claims 9–13 depend from claim 8 (directly or indirectly). *Id.* at 12:44–58.

Petitioner argues that claim 1’s range of coefficients of friction (0.3 to 0.2) are not enabled by systems that include the dry lubricant material of claim 8. Pet. 87. In particular, Petitioner argues that the low region of the claimed range (between about 0.03 and 0.06) is not enabled in the context of claims 8 and 13. Petitioner argues that it is “*not possible*” to practice the low range of claim 1’s coefficient of friction with claims 8–13 because those claims require the dry lubricant to include additional and high-friction materials such as epoxy.” *Id.* at 88.

Patent Owner argues that a person of ordinary skill in the art would be able to achieve coefficient of friction values between 0.03 and 0.06 and would view the ’854 patent specification as enabling this range and argues that a person of ordinary skill in the art would view the ’854 patent

specification as enabling this range including “with resin, thermal conductor, hardener, and lubricant compositions that reduce CoF.” PO Resp. 73.

The enablement requirement of 35 U.S.C. § 112(a) mandates that a patent specification describe the invention in such full, clear, concise, and exact terms as to enable any person skilled in the art to make and use the claimed invention. The Supreme Court, in *Amgen Inc. v. Sanofi*, 598 U.S. 594, 610 (2023), emphasizes “the specification must enable the full scope of the invention as defined by its claims.” The Federal Circuit has similarly long held that a patent’s specification must enable a person having ordinary skill in the art to practice the invention across the entire range recited in the claims without undue experimentation. *See In re Wright*, 999 F.2d 1557, 1561 (Fed. Cir. 1993) (holding that enablement requirement is not satisfied when the specification provides enablement only for a narrow subset of the claimed range without undue experimentation).

The Federal Circuit’s decision in *In re Wands*, 858 F.2d 731 (Fed. Cir. 1988), established a framework for evaluating whether a specification requires “undue experimentation” to practice the claimed invention. The court identified eight factors to guide the inquiry: (1) the quantity of experimentation necessary; (2) the amount of direction or guidance presented in the specification; (3) the presence or absence of working examples; (4) the nature of the invention; (5) the state of the prior art; (6) the relative skill of those in the art; (7) the predictability or unpredictability of the art; and (8) the breadth of the claims. *Id.* at 737. No single factor is dispositive; rather, they are weighed collectively to determine whether the experimentation needed to practice the full scope of the claims crosses the line from routine to undue. In post-grant review proceedings, a petitioner

bears the burden of establishing by a preponderance of the evidence that the specification, as of the effective filing date, fails to enable the claimed invention across its full scope when evaluated under these factors.

Both Petitioner and Patent Owner present various evidence regarding enablement. Pet. 86–89; PO Resp. 72–78; Reply 20–22; Sur-reply 24–26. We find the following, based upon a preponderance of the evidence, after weighing all the evidence before us:

1. Petitioner’s witness, Dr. Wang, states that it is not possible to practice the invention of claims 8–13 which requires high-friction materials such as epoxy. Ex. 1003 ¶ 287. Dr. Wang also testifies that the addition of lubricants is wildly unpredictable at the low end of the CoF range. Reply 20 (citing Ex. 1043 ¶¶ 1–31).
2. Patent Owner’s witness, Dr. Spiegelberg, states that a person having ordinary skill in the art would know how to reach the low end of the claimed CoF range (0.03). Ex. 2026 ¶ 251. Dr. Spiegelberg also states that a person having ordinary skill in the art:

would know that the dry lubricant material compositions disclosed in the ’854 patent result in such a low coefficient of friction, and a POSITA would know to use the dry lubricant material (including materials other than lubricant materials) to achieve these low frictional coefficient of friction values.

Id. at ¶ 254. Dr. Spielberg also states that the ’854 patent discloses adding lubricant to resin to increase the amount of lubricant in the coating material and that “it would be a simple and routine matter for a POSITA to determine how much additional lubricant should be added to obtain a mixture that would have a coefficient of friction with a mesh ride vehicle between 0.03–0.06.” *Id.* at ¶ 256 (citing Ex.

- 7:46–48). Dr. Spielberg also notes that the '854 patent teaches that inclusion of copper may further reduce friction. *Id.* at ¶ 257 (citing Ex. 1001, 7:65–8:2).
3. A 2024 online “Friction Coefficients and Calculator” reports that most materials have a sliding (kinetic) coefficient of friction at 0.1 or well above. Ex. 1026. The document reports that clean ice at 0° Celsius and brass has a coefficient of friction of 0.02. *Id.* at 3. Clean ice samples at 0° Celsius have a coefficient of friction of 0.02. Two samples of polytetrafluoroethylene (PTFE) have a coefficient of friction of 0.04 whether dry or with grease. *Id.* at 7. Snow and PTFE have a standing coefficient of friction of 0.02. *Id.* at 7.
 4. An undated “Appendix: Static and Kinetic Friction Coefficients for Selected Materials” provides data similar to the Friction Coefficients and Calculator. Ex. 1027. The Appendix also reports coefficient of friction for “Nylon 6/6” samples as 0.06 (static) and 0.07 (kinetic). *Id.* at 4. It also reports coefficient of friction for Teflon (PTFE) samples as low as¹² 0.04 (static). *Id.*
 5. Nam P. Suh et al., *The Minimum Coefficient of Friction: What Is It?*, 43 Annals of the CIRP 491 (1994) (Ex. 1028) reports CoF as low as 0.05 “when mechanical interactions are limited” and “based on a hypothetical model of an ideal surface for low friction.” *Id.* at 491. The paper is based on model experiments “using a hard smooth surface coated with a sub-micron thick elastomer layer.” *Id.*

¹² This paper provides data with different testing geometries. *Id.* at 6.

6. The document titled “6.2 Friction – University Physics Volume 1 | OpenStax” provides similar data. Ex. 1008. The document indicates: a steel on steel (oiled) CoF of 0.05 (static) or 0.03 (kinetic); Teflon (in other words, PTFE) on steel CoF of 0.04 (whether static or kinetic); bone lubricated by synovial fluid CoF of 0.016 (static) or 0.015 (kinetic); shoes on ice CoF of 0.1 (static) to 0.05 (kinetic); ice on ice CoF of 0.1 (static) and 0.03 (kinetic); steel on ice CoF of 0.04 (static) and 0.02 (kinetic). *Id.* at 4–5.
7. Liu et al., 14 Preparation and Tribological Properties of Modified MoS₂/SiC/Epoxy Composites, Materials 1731, 2021 (Ex. 1039) is an academic paper that describes the results of a study in which epoxy composites are prepared with different amounts of surface-modified filler silicon carbide (SiC) particles and molybdenum disulfide (MoS₂) powder. The reference indicates that CoF decreases with 4% MoS₂, but may increase with more MoS₂. *Id.* at 1, 8.
8. Brostow, et al., Modified epoxy coatings on mild steel: Tribology and surface energy, European Polymer Journal 46, 2181–2189 (2010) (Ex. 1040) reports on the effects of curing temperature, curing agent, and particle shape-effects on dynamic friction.
9. Kumar, et al., Tribological studies of epoxy composites with solid and liquid fillers, Tribology International 105, 27–36, 2017 (Ex. 1041) reports that “epoxy filled with graphene and SN150 lubricant provided the lowest coefficient of friction of 0.09.” *Id.* at 1.
10. Vazirisereshk, et al., Solid lubrication with MoS₂: A Review, Lubricants, 7, 57, 2019 (Ex. 2023) teaches that molybdenum disulfide can achieve ultra-low friction levels on the order of 0.0001. *Id.* at 8.

11. Berman, et al., Graphene: a new emerging lubricant, *Materials Today*, 17, 1, 31, 2003 (Ex. 2024) reports, diamond-like carbon as a solid lubricant reported values from 0.001-0.05. *Id.* at 36. It also reports coefficient of friction for MoS₂ and WS₂ of 0.02–0.06 in dry conditions. *Id.*

12. The '854 patent describes various commercial epoxies but does not state that the epoxies would reach a CoF of 0.03 to 0.06. Ex. 1001, 7:13–35; *see also* Ex. 1043 ¶¶ 13–14. Dr. Wang testifies that he was unable to find documentation indicating the CoF for epoxies mentioned in the '854 patent. Ex. 1043 ¶ 15. Dr. Wang testifies that a person having ordinary skill in the art would not have expected these materials to reach a CoF of 0.03–0.06 based on available literature. Ex. 1043 ¶ 16; *see also* Ex. 1003 ¶ 285.

We rely on these facts and evidence using the framework of *In re Wands* below.

1. Quantity of experimentation necessary

Petitioner's witness, Dr. Wang, states reaching 0.03–0.06 coefficient of friction is impossible because the dry lubricant includes “additional and high-friction materials such as epoxy.” Ex. 1003 ¶ 287. Patent Owner's witness, Dr. Spiegelberg, states that a person having ordinary skill in the art would know how to reach the low end of the claimed CoF range (0.03) using materials disclosed in the specification. Ex. 2026 ¶ 251. Thus, according to the witnesses, quantity of experimentation necessary is either “infinite” or “zero” depending on which witness is more credible.

Dr. Wang's position is overstated. Claim 8 does not require any particular amount of resin, lubricant, thermal conductor, and hardener.

Dr. Wang provides no persuasive evidence that even extremely *de minimus* amounts of, for example, epoxy would necessarily make it impossible to reach a CoF of 0.03–0.06.¹³ While perhaps not a good solution as a practical matter, the evidence supports that molybdenum disulfide or graphene could be used as a primary material to reach low CoF. *See* Exs. 2023, 2024. Thus, as between Dr. Wang and Dr. Spiegelberg’s very different positions, Dr. Spiegelberg’s position is more credible. This factor favors Patent Owner.

2. Amount of direction or guidance in the specification

The specification does not provide particular guidance to reach particular friction coefficients. The specification does, however, provide extensive guidance as to how a person having ordinary skill in the art can achieve more or less friction. For example, the ’854 patent describes dry lubricant coating, various commercial epoxies providing low friction properties, lubricant mixed into the resin, and inclusion of thermal conductors to transfer heat and further reduce friction. Ex. 1001, 7:10–8:14. This guidance favors Patent Owner.

3. The presence or absence of working examples

The ’854 patent does not include any particular examples measuring a particular coefficient of friction. Ex. 1001, *passim*. The record before us also does not include, from either party, particular examples measuring CoF on a slide using different dry lubricants. This factor favors Petitioner.

¹³ Claim 9 adds percentage constraints for the dry lubricant’s composition. Petitioner, however, does not address enablement of claim 9 separately. Moreover, the record is devoid of evidence as to how these percentages in particular would affect CoF. As such, our analysis of claim 9 is substantially the same for claim 8.

4. The nature of the invention

The invention of claim 8 is a recreational slide having the claimed dry lubricant characteristics, claimed ride vehicle, and claimed coefficient of friction when in use. While the slide itself is rather simple in nature, the underlying consideration of how various factors will affect coefficient of friction is complicated (as established by the references above). This factor is neutral.

5. The state of the prior art

The prior art explained above establishes it is possible for dry lubricants to enable a CoF at or near 0.03–0.06. *See* Exs. 2023, 2024. Exhibit 1026 indicates two samples of PTFE have a coefficient of 0.04 even without addition of a dry lubricant. Exhibit 1027 similarly establishes coefficient of friction for nylon and PTFE at 0.04–0.07 without additional dry lubricant. Exhibit 1008 indicates CoF from 0.02 to 0.05 for various materials again without added lubricant. Exhibit 1039 would have provided a person having ordinary skill in the art guidance as to adjusting dry lubricant composition.

While Exhibit 1028 (a reference with a much earlier date than other references here) reports a hypothetical minimum CoF of 0.05, this was based on a hypothetical model and does not address additional dry lubricants. *Id.* at 491. A person of ordinary skill in the art would not have weighed Exhibit 1028's model heavily in view of the other references discussed above.

Because the prior art establishes the possibility of a CoF at or near 0.03–0.06 with dry lubricant material and also provides further guidance as to how to achieve such a CoF, this factor favors Patent Owner.

6. The relative skill of those in the art

We address the skill level of a person having ordinary skill in the art in Section II(B), *supra*. This skill level is sufficient to try different dry lubricants as suggested by the '854 patent and the art above and determine which has the lowest friction (i.e. is the most slippery) on the slide. This factor favors Patent Owner.

We again emphasize that our ultimate determination here would be the same even under Patent Owner's proposed level of ordinary skill.

7. The predictability or unpredictability of the art

Both the art and the '854 patent establish that many factors can influence coefficient of friction (as we explain above), and how the CoF changes is not easily predictable without experimentation. This factor favors Petitioner.

8. The breadth of the claims

Claim 8 is somewhat broad in the sense that it extends to a wide range of materials and extends to a low CoF. The claim is also broad in the sense that, as we discuss in Section II(C)(2), *supra*, the claims do not require any particular method of testing coefficient of friction. This factor is weights in favor of Petitioner.

9. Other analysis

The *Wands* factors alone are not dispositive. Rather, the Section 112 statute itself must be dispositive. *Amgen Inc.*, 598 U.S. at 611 (explaining enablement analysis while emphasizing statutory language and rejecting any rigid or formulaic approach). "Judges may no more subtract from the requirements for obtaining a patent from Congress has prescribed than they may add to them." *Id.* at 612.

As referenced above when discussing “amount of direction or guidance in the specification,” the ’854 patent specification discusses various commercially available epoxies, including silicon or PTFE based materials, as possible dry lubricants. Ex. 1001, 7:10–35. Petitioner’s witness admits he was unable to find documentation indicating the CoF for these materials. Ex. 1043 ¶ 15. While Dr. Wang testifies that a person having ordinary skill in the art would not have expected these materials to reach a CoF of 0.03–0.06 based on available literature (Ex. 1043 ¶ 16), he does not provide any positive evidence regarding coefficient of friction for these particular materials. Meanwhile, the evidence before us suggests PTFE or Teflon materials generally can achieve very low CoF (around 0.04). *See* Exs. 1008, 1026, 1027. As such, Dr. Wang’s testimony is not well supported in this regard.

10. Conclusion

For the reasons above and after considering all of the evidence as a whole, the evidence better supports Patent Owner. Also, Petitioner bears the burden of proving lack of enablement, and Petitioner’s failure to present specific evidence regarding CoF achievable by the specific materials suggested by the ’854 patent is a critical failure of proof. For the reasons above, we determine that Petitioner has not established by a preponderance of the evidence that claims 8–13 fail to satisfy the enablement requirement of 35 U.S.C. § 112.

L. Alleged Indefiniteness of Claims 5 and 26 (Ground 3B)

Petitioner argues that both claims 5 and 26 are indefinite under 35 U.S.C. § 112(b). Pet. 11. Patent Owner disagrees. PO Resp. 77.

Under 35 U.S.C. § 112(b), a patent claim must “particularly point[] out and distinctly claim[] the subject matter which the inventor or a joint inventor regards as the invention.” The Supreme Court has explained that “a patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). A claim is indefinite if its language “might mean several different things and no informed and confident choice is available among the contending definitions.” *Id.* at 910. A petitioner bears the burden of establishing indefiniteness by a preponderance of the evidence. *See* 35 U.S.C. § 326(e).

We address these standards applied to claims 5 and 26 below.

1. Claim 5

Claim 5 recites “[t]he recreational slide system of claim 4, wherein the dry lubricant coating *includes* a thickness that is within a range of between about 1 micron to about 5 micron.” Ex. 1001, 12:31–33 (emphasis added). As explained below, we do not determine that this claim is indefinite.

Petitioner argues that the use of the word “includes” makes claim 5 unclear because the claim could be understood to (1) require some regions to have the claimed thickness, (2) require that the entirety of the coating have the claimed thickness, or (3) allow a coating thickness of more than 5 micron because a thicker coating would also include a thinner coating. Pet. 89–90.

Patent Owner argues that Petitioner's argument is not reasonable. PO Resp. 77. Patent Owner argues that the claim language itself does not suggest that a coating greater than five microns falls within its scope. *Id.*

We agree with Patent Owner that claim 5 does not fail to adequately inform a person of ordinary skill in the art about the scope of the claim. Petitioner's argument that the claim could be directed at a coating greater than 5 microns is not persuasive; if the claim encompassed, for example, a coating with a uniform 15 micron thickness, this would improperly eviscerate any limiting scope of claim 5 entirely.

Claim 5 also cannot reasonably be read to require that the entire dry lubricant coating has a thickness between 1 micron and 5 microns. Rather, the language of claim 5 explicitly states that the coating "includes" such a thickness. Thus, if the coating thickness is between 1 micron and 5 microns at any point, this meets the claim.

Petitioner also argues that one applying the coating "would either overapply or reapply or strip down," and that claim 5 is unclear which of these possibilities is encompassed. Reply 22 (emphasis removed). This does not make claim 5 unclear. Rather, claim 5 does not speak to method of manufacture and thus is open to different possibilities. "Breadth is not indefiniteness." *In re Gardner*, 427 F.2d 786, 788 (C.C.P.A. 1970); *see also SmithKline Beecham Corp. v. Apotex Corp.*, 403 F.3d 1331, 1341 (Fed. Cir. 2005) (claim breadth does not render a claim indefinite).

Thus, Petitioner has *not* established by a preponderance of the evidence that claim 5 is indefinite.

2. Claim 26

Claim 26 recites “[t]he ride vehicle of claim 22, wherein the central core is surrounded by a fabric liner that is positioned between the central core and *the fabric layer* and the woven mesh layer.” Ex. 1001, 14:24–27 (emphasis added). As we explain below, this claim is unclear and indefinite.

Petitioner argues that the scope and meaning of claim 22 is unclear because “the fabric layer” lacks an antecedent basis. Pet. 90. In other words, neither claim 22 nor claim 26 recite “a fabric layer” so, according to Petitioner, it is unclear what layer “the fabric layer” references. *Id.*

Patent Owner argues that the “fabric layer” is described in the specification such that a person having ordinary skill in the art would understand from the claim language that “fabric liner is positioned between the central core, and the fabric liner, and the woven mesh layer.” PO Resp. 78–79 (citing Ex. 2026 ¶¶ 272–279, Ex. 2027 ¶¶ 221–229, 278).

The ’854 patent describes that “the body 48 of the ride vehicle 14 is defined by a flexible central core 60 that is sandwiched between an outer fabric layer 62 and a mesh layer 64 formed of the mesh material.” Ex. 1001, 9:63–66; *see also* Figs. 3, 4. The ’854 patent also explains that “[t]he fabric layer 62 and the mesh layer 64 may be coupled together at a seam that extends around a sidewall 66 of the ride vehicle 14.” *Id.* at 10:4–6. Also, the central core “may be enclosed or surrounded with a fabric liner 68 ... positioned between the central core 60 and the fabric layer 62 and the mesh layer 64.” *Id.* at 10:9–16. Based on this language, Patent Owner takes the position that “the central core is surrounded by a fabric liner, and the fabric liner is positioned between the central core, and the fabric liner, and the woven mesh layer.” Ex. 2026, ¶ 275. In other words, “the fabric liner is

positioned between the central core, and the fabric liner, and the woven mesh layer.” *Id.*

We acknowledge that incorrect antecedent basis does not necessarily render a claim indefinite. *Energizer Holdings, Inc. v. Int’l Trade Comm’n*, 435 F.3d 1366, 1370–71 (Fed. Cir. 2006) (holding that the absence of explicit antecedent basis does not necessarily render a claim indefinite where the claim scope remains reasonably ascertainable). Here, however, we agree with Petitioner that the scope of claim 26 is unclear. Patent Owner argues that claim 26 should be interpreted such that “the fabric layer” is essentially replaced with the words “the fabric liner.” PO Resp. 79; Ex. 2026, ¶ 275. The specification, however, does not equate “fabric layer” and “fabric liner” in this manner. Rather, the specification treats “fabric layer” and “fabric liner” as different terms with different meanings and different reference numbers (i.e. “fabric liner 68” vs. “fabric layer 62”). Nor is it clear from the context here that this is a typographical error. Rather, the specification indicates that the “fabric layer 62 forms the top surface 54.” Ex. 1001, 9:66–10:1; *see also* code (57) (abstract) (“The ride vehicle includes a fabric layer that forms a top surface....”); Fig. 3. The fabric layer is a surface layer rather than being positioned between other layers. Thus, Patent Owner’s explanation of claim 26 makes discerning the claim scope more confusing, not less. A person of skill in the art cannot reasonably discern where claim 26’s recited “fabric layer” must be located in view of the specification.

Also, even if the “fabric layer” were “the fabric liner” as Patent Owner appears to argue, it is unclear how the “fabric liner” can be “positioned between the central core and the fabric [liner] and the woven mesh layer.” In other words, it is unclear how the fabric layer/fabric liner

could be positioned between other layers and itself. Thus, we determine that claim 26 is unpatentable as indefinite under 35 U.S.C. § 112.

M. Patent Owner’s Motion to Terminate

With our authorization, Patent Owner filed a motion to terminate this proceeding as time-barred and for failure to identify all real parties in interest. Paper 48 (“PO Mot.”).¹⁴ Petitioner responded. Paper 50 (“Pet. Resp.”). We address the parties’ arguments below.

1. Legal Standard

Under 35 U.S.C. § 322(a)(2),¹⁵ a petition for post grant review “may only be considered if—the petition identifies all real parties in interest.” We generally accept a petitioner’s initial identification of RPIs, unless the patent owner presents some evidence to support its argument that an unnamed party should also be included. *See Worlds Inc. v. Bungie, Inc.*, 903 F.3d 1237, 1242 (Fed. Cir. 2018) (explaining that “an IPR petitioner’s initial identification of the real parties in interest should be accepted unless and until disputed by a patent owner”). “[A] patent owner must produce some evidence to support its argument that a particular third party should be named a real party in interest.” *Id.* After a patent owner has done so, “it is Petitioner’s burden to bring forth evidence or arguments demonstrating that it had named all RPIs.” *Tianma Microelectronics Co. v. LG Display Co.*,

¹⁴ We also permitted the parties to obtain discovery regarding the real party in interest issue. Paper 42.

¹⁵ Patent Owner cites 35 U.S.C. § 312(a)(2) as the basis for the relief it seeks, but that section of the statute defines the requirements of a petition for *inter partes* review, not post grant review. *See* Mot. 1. We understand Patent Owner to have intended to cite 35 U.S.C. § 322(a)(2), which defines the requirements for a petition for post grant review such as the Petition here.

IPR2025-01579, Paper 12, at 9–10 (March 18, 2026) (“*Tianma*”) (precedential). The ultimate burden of proof always remains with the petitioner to establish that it has complied with the statutory requirement of 35 U.S.C. § 322(a)(2) to identify all RPIs. *Yangtze Memory v. Micron Technology*, IPR2025-00098, Paper 38, 8 (Jan. 15, 2026) (informative). We evaluate this issue based on a preponderance of the evidence. 35 U.S.C. § 326(e); 37 C.F.R. § 42.1(d).

Whether a non-party is an RPI is a “highly fact-dependent question” with no “bright line test.” *Applications in Internet Time, LLC v. RPX Corp.*, 897 F.3d 1336, 1342 (Fed. Cir. 2018) (“*AIT*”). “[T]he two questions lying at [the] heart [of the RPI inquiry] are whether a non-party ‘desires review of the patent’ and whether a petition has been filed at a nonparty’s ‘behest.’” *Id.* at 1351 (quoting TPG, 77 Fed. Reg. at 48,759).

The Supreme Court in *Taylor v. Sturgell*, 553 U.S. 880 (2008) (“*Taylor*”) sets forth factors relevant to the question of whether a non-party is “real party in interest.” 533 U.S. at 893–95. Although “rarely will one fact, standing alone, be determinative of the inquiry,” “[a] common consideration is whether the non-party exercised or could have exercised control over a party’s participation in a proceeding.” TPG § I.D.1. Other considerations may include whether a non-party “funds and directs and controls” an IPR petition or proceeding; the non-party’s relationship with the petitioner; the non-party’s relationship to the petition itself, including the nature and/or degree of involvement in the filing; and the nature of the entity filing the petition. *Id.* “We also may consider whether Petitioner’s actions ‘have blurred sufficiently the lines of corporate separation with [an unnamed related entity], such that [the entity] could have controlled the filing and

participation of the IPRs.” *Corning Optical Commc’ns RF, LLC v. PPC Broadband, Inc.*, IPR2014-00440, Paper 68, at 15 (PTAB Aug. 18, 2015) (precedential except § II.E.1) (“*Corning*”) (quoting *Zoll Lifecor Corp. v. Philips Elec. N. Am. Corp.*, IPR2013-00606, Paper 13, at 10 (PTAB Mar. 20, 2014)).

The analysis considers how courts generally have used the term “real party in interest” to “describe relationships and considerations sufficient to justify applying conventional principles of estoppel and preclusion.” *Id.* In general, a real party in interest is “the party that desires review of the patent,” and “may be the petitioner itself, and/or it may be the party or parties at whose behest the petition has been filed.” *Id.*

2. Correctness of the Petition’s Identification of Real Parties in Interest

Patent Owner argues that the Petition does not properly identify all real parties in interest. PO Mot. 10. In particular, Patent Owner argues that UA Attractions, LLC, UASUA, LLC, Ridgmar Urban Air, LLC, Manchester Urban Air, LLC, Brockton Urban Air, LLC, UA Holdings, LLC, Leviathan Intermediate Holdings, LLC, Unleashed Brands LLC¹⁶, Unleashed Services, and Forth Worth UA are all real parties in interest not named in the Petition. PO Mot. *passim*. Petitioner responds by arguing that the Petition correctly identified all real parties in interest: UATP IP, LLC and UATP Management LLC. Pet. Resp. 2. We address each of the twelve alleged real parties in interest below.

¹⁶ Petitioner’s November 26, 2025, updated mandatory notices refers to “Unleashed Brands, LLC.” Paper 28, 1. Patent Owner’s motion refers to “Unleashed Brands.” PO Mot. 2, 12. We understand both of these references as being to Unleashed Brands LLC.

a. UATP IP, LLC and UATP Management LLC

The Petition identifies UATP IP, LLC and UATP Management LLC as real parties in interest. Pet. 95. Petitioner argues that UATP Management exclusively funded this proceeding. Pet. Resp. 2–3. Petitioner argues that UATP IP and UATP Management “exclusively and entirely” control and had opportunity to control this PGR. *Id.* at 3–6. Petitioner provides declarations of Stephen Polozola to evidence these positions. Ex. 1071 ¶¶ 2–4; Ex. 1083 ¶¶ 1–7.

Patent Owner does not dispute that UATP IP, LLC and UATP Management LLC are real parties in interest. PO Mot. *passim*.

Based on a preponderance of the evidence, we determine that UATP IP, LLC and UATP Management LLC are real parties in interest for this PGR.

b. Unleashed Services

Patent Owner argues that Polozola is employed by Unleashed Services and argues that Unleashed Services provides legal services to UATP Management LLC. PO Mot. 2–5. Patent Owner provides a prior declaration of Polozola from a different proceeding to support this position. *Id.* (citing Ex. 2054 ¶ 2). Patent Owner calls Polozola’s credibility into question by noting that, inconsistent with the prior declaration, Polozola testified in this proceeding that Unleashed Services, LLC does not provide legal services to UATP Management, LLC. *Id.* at 3.

The preponderance of the evidence supports that Unleashed Services is *not* a real party in interest. Rather, evidence supports that UATP IP and UATP Management exclusively control this PGR, as we analyze below. Ex. 1083 ¶¶ 1–7.

Even if we were to accept Patent Owner's contention that Unleashed Services provides legal services to UATP Management LLC, this would not make Unleashed Services a real party in interest. *See generally* Restatement (Second) of Judgments § 39 cmt. c (1982) (merely supplying counsel to party is not sufficient to establish control of litigation); *Taylor v. Sturgell*, 553 U.S. 880, 893–95 (2008) (discussing the limited circumstances under which non-parties may be bound). The key is ability to control this proceeding or a “substantive legal relationship.” *AIT* at 1362 (Fed. Cir. 2018) (citing *Taylor*). Examples of a substantive legal relationship includes “preceding and succeeding owners of property, bailee and bailor, and assignee and assignor.” *Id.* (quoting *Taylor* at 894). “Mutual legal obligations and commonality of interest” may also show a “substantive legal relationship.” *Id.* The *AIT* court further recognized the relationships of “patentee and licensee,” “insurer and insured,” and “attorney-client relationship” as relevant to the inquiry. *Id.* at 1362–1363. *AIT* counseled, however, that “one of these forms of legal relationships alone does not necessarily establish privity.” *Id.*

Here, the preponderance of the evidence (in particular, the Exhibit 2054 Polozola declaration) supports that Unleashed Services has an attorney-client relationship with UATP Management LLC. The evidence does not, however, show that Unleashed Services necessarily provided any legal services *with respect to this proceeding*. The evidence also does not show that Unleashed Services exercised or could exercise control over this proceeding and does not show any additional substantial legal relationship. The evidence also does not establish mutual legal obligations and

commonality of interest other than the interest a legal services provider may have in doing work for a client.

Also, even if Patent Owner's evidence were to weigh against Polozola's credibility, Patent Owner offers no evidence that Unleashed Services actually controls this PGR or obtains a benefit that would justify Unleashed Services being considered a real party in interest. We agree with Patent Owner that Polozola provides some legal services for this proceeding. Paper 37, 1. We also agree that Polozola may have provided some legal services to UATP Management, LLC while under the Unleashed Services umbrella in other circumstances. But the evidence before us indicates that it was UATP Management, LLC that paid for legal services and that legal service invoices (from outside counsel) were provided to UATP IP, LLC. *See* Exs. 1081–1083. The record lacks evidence that Unleashed Services is involved in the present proceeding and also lacks evidence that, while working under the Unleashed Services umbrella, Polozola provided services for this proceeding.

Thus, based on a preponderance of the evidence, we determine that Unleashed Services is not a real party in interest for this post grant review proceeding.

c. Unleashed Brands, LLC

Patent Owner argues that Unleashed Brands, LLC is a real party in interest because “it is the sole member of and sole controlling force behind” UATP Management and UATP IP. PO Mot. 3–4. Similar evidence presented in *Corning*, however, was insufficient to establish that Corning Inc. should have been named a real party in interest: “Corning Inc. being the ultimate parent of Petitioner is not sufficient evidence, by itself, that Corning Inc.

exerts control of these proceedings.” *Corning* at 22. Nonetheless, the *Corning* decision held that Corning, Inc. was a real party in interest because it “not only had an opportunity to control, but actually exerted control, over the proceedings.” *Id.* For example, Corning Inc.’s in-house attorneys provided direction to outside counsel related to that IPR. *Id.* at 21. Also, Corning Inc. reviewed and paid invoices related to that IPR. *Id.* at 20–21. In contrast, there is no evidence here that Unleashed Brands, LLC actually asserted control over this proceeding. There is no evidence Unleashed Brands, LLC paid for this post grant review proceeding or has exercised any control of this post grant review proceeding. The current fact scenario lacks any of the corporate blurring that was important to the *Corning* decision. *Id.* at 18. Thus, here, we apply the holdings of the law, including *Corning*, that a parent company with no involvement at all in a proceeding will generally not be a real party in interest.¹⁷

Patent Owner also argues that Petitioner untimely identified Unleashed Brands, LLC as an additional real party in interest. PO Mot. 3–4; *see also* Paper 28, 1; *see also* Ex. 1078, 10:10–12 (Judge Weatherly noting that these entities were named as real parties in interest). Petitioner, however, has withdrawn that identification and “reiterates that UATP IP, LLC and UATP Management LLC are the only real parties-in-interest.” Paper 47, 1.¹⁸

¹⁷ A decision to the contrary would effectively hold that *any* parent company and *any* sole shareholder must necessarily be a real party in interest. The Court of Appeals for the Federal Circuit and the Patent Office Trial Practice Guide have both cautioned against any such bright line test. *AIT* at 1342 (quoting TPG, 77 Fed. Reg. at 48,759).

¹⁸ We further address Petitioner’s identifications in Section II(M)(3), *infra*.

Patent Owner further argues that Polozola is counsel for Unleashed Brands and that Browning (“technically Polozola’s boss”) is the CEO of both Unleashed Services and Unleashed Brands. PO Mot. 3–4, 6. While the evidence before us establishes that Polozola exercised some control over the legal direction of this proceeding (Ex. 1083 ¶ 2), it does not establish that Polozola *in his capacity as CLO of Unleashed Brands* controls this proceeding. To the contrary, the evidence indicates that UATP Management, LLC and UATP IP, LLC manage this proceeding through Polozola. *Id.* Also, no persuasive evidence before us indicates that Unleashed Brands, LLC controls this proceeding through Browning.

Thus, based on a preponderance of the evidence, we determine that Unleashed Brands, LLC is not a real party in interest for this post grant review.

d. UA Attractions LLC

Patent Owner argues that UA Attractions LLC resells equipment used in UA action parks. PO Mot. 5 (citing Ex. 2055, 49:6–51:17 (Polozola deposition)). Patent Owner argues that, for example, UA Attractions LLC purchases slides and resells them to UA franchisees. *Id.* Polozola asserted privilege as to whether or not UA Attractions LLC would benefit from this PGR. Ex. 2055, 46:21–22.

No evidence before us indicates UA Attractions LLC has any control over this proceeding. Rather, as we explain above, the evidence shows that UATP IP, LLC and UATP Management LLC control this post grant review proceeding. The evidence also does not show that UA Attractions LLC would benefit from this proceeding. No evidence indicates a connection between UA Attractions LLC and the ’845 patent claims. Pet. Resp. 11–12.

Thus, based on a preponderance of the evidence, we determine that UA Attractions LLC is not a real party in interest for this post grant review proceeding.

e. UASUA, LLC and Forth Worth UA

Patent Owner argues that UASUA and Forth Worth UA both use competing slides in their action parks and thus would benefit if the '854 patent were found unpatentable.

No evidence before us suggests that these entities have any control of this post grant review proceeding. As we explain above, the evidence shows that UATP IP, LLC and UATP Management LLC control this proceeding. Also, no evidence connects these entities to the '854 patent in manner that would establish benefit from this proceeding.

Thus, based on a preponderance of the evidence, we determine that UA Attractions LLC is not a real party in interest for this post grant review proceeding.

f. Ridgmar Urban Air, LLC, Manchester Urban Air, LLC, Brockton Urban Air, LLC, UA Holdings, LLC, and Leviathan Intermediate Holdings, LLC

Patent Owner alleges that these entities are real parties in interest because Petitioner's November 26, 2025, updated mandatory notices listed them as "additional real parties-in-interest." PO Mot. 12; Paper 28. Petitioner, however, has withdrawn that identification and "reiterates that UATP IP, LLC and UATP Management LLC are the only real parties-in-interest." Paper 47, 1.

No evidence before us suggests that these entities have any control of this post grant review proceeding. Also, no evidence connects these entities to the '854 patent.

Thus, based on a preponderance of the evidence, we find that Ridgmar Urban Air, LLC, Manchester Urban Air, LLC, Brockton Urban Air, LLC, UA Holdings, LLC, and Leviathan Intermediate Holdings, LLC are not real parties in interest for this post grant review proceeding.

In sum, Petitioner has provided evidence that UATP Management, LLC and UATP IP, LLC exclusively exercised control of this proceeding. *See, e.g.*, Pet. Resp. 2–6, Ex. 1071 ¶¶ 2–3; Ex. 1083 ¶¶ 1–7. No evidence to the contrary outweighs this showing to establish additional real parties in interest. We thus determine, based on the evidence before us, that Petitioner correctly named UATP IP, LLC and UATP Management LLC in this proceeding’s Petition.

3. Effect of Petitioner’s November 26, 2025, Mandatory Notice on Filing Date

Patent Owner argues that Petitioner’s updated mandatory notices require that we accord the Petition a filing date of November 26, 2025, and then dismiss the Petition for failure to comply with 35 U.S.C. § 321 (requiring that a PGR petition be filed within 9 months of patent grant). PO Mot. 6–10. We disagree.

Corning holds that the Board may consider a petition only if it identifies *all* real parties in interest. *Corning* 37. C.F.R. 42.8. As we explain in Section II(M)(2), *supra*, the Petition here identifies all real parties in interest. *Corning* at 24–25. Thus, under *Corning*, the Petition is complete and may be considered.

Patent Owner emphasizes *Corning*’s language that “even if Petitioner [i.e., the petitioner in the *Corning* matter] amended its Petitions, those Petitions [i.e., Petitioner’s multiple petitions at issue] would receive a new filing date.” *Corning* at 24. *Corning* also states that “any Petition *corrected*

to disclose additional RPIs must be given a new filing date.” *Id.* at 23 (emphasis added). *Corning*’s language makes sense with respect to the petitioner in that case. There, the original petitions did not name all real parties in interest. Thus, in *Corning*, a new amendment that correctly named all real parties in interest would have presented “proper” petitions for consideration for the first time. The present facts are distinguishable. Petitioner’s original Petition correctly named the real parties in interest. Because the original Petition was correct, and there is no later correction necessary, the original filing date stands.

Aylo Freesites v. Dish Techs., IPR2024-00940, Paper 75 (PTAB Feb. 3, 2026), presents a scenario similar to *Corning*. In *Aylo*, “the Board determined that Petitioner should have identified 9219-1468 Quebec Inc.” as a real party in interest. *Id.* at 2. *Aylo* confirmed that, per the reasoning of *Corning*, “Petitioner’s **correction** [via mandatory notices] to disclose additional RPIs requires according the Petition a new filing date.” *Id.* at 3 (emphasis added). Again, the instant post grant review proceeding is different because the Petition correctly identifies all real parties in interest in the Petition. Petitioner’s later mandatory notice, which listed additional real parties in interest (now withdrawn) did not correct anything and, thus, did not trigger a new filing date.

Patent Owner also argues that the Petition should be dismissed due to Petitioner’s gamesmanship. We disagree. Even if Polozola’s testimony was, at times, inconsistent, we do not discern anything in his testimony that rises to the level of bad faith or deliberate deception. We recognize that Petitioner’s November 26, 2025, updated mandatory notices (Paper 28) have added confusion and difficulty to the proceedings. That filing, however, is

now superseded and withdrawn by Petitioner's March 23, 2026, mandatory notices (which emphasize that only the real parties in interest named in the original Petition are real parties in interest). To the extent Petitioner's two updated mandatory notices reflect Petitioner's uncertainty, the uncertainty is understandable given that real party in interest law is both complex and constantly evolving. As examples of legal evolution that occurred during the course of this proceeding, *Corning* was designated precedential in October, 2025, and *Proppant Express Invests., LLC v. Oren Techs., LLC*, IPR2017-01917, Paper 86 (PTAB Feb. 13, 2019), was de-designated in February, 2026.

In sum, the evidence before us supports that the Petition as filed correctly identified real parties in interest in the first instance. We are not aware of any law, precedent, or directive that requires termination of a proceeding under the circumstances before us in this proceeding. We therefore deny Patent Owner's motion to terminate.

III. CONCLUSION¹⁹

In summary,

Claim(s)	35 U.S.C. §	Reference(s)/ Basis	Claim(s) Shown Unpatentable	Claim(s) Not Shown Unpatentable
1–4, 6, 7	102/103	Phillips		1–4, 6, 7
1–4, 6, 7, 14–17, 22–28	103	Phillips, WN0400	22–25 ²⁰	1–4, 6, 7, 14–17, 27, 28
1–7	103	Phillips, Fallgatter		1–7
1–7, 14–17, 22–28	103	Phillips, Fallgatter, WN0400	22–25 ²¹	1–7, 14–17, 27, 28
8–13	112(a)			8–13
5, 26	112(b)		26	5
Overall Outcome			22–26	1–17, 27, 28

¹⁹ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner’s attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. §§ 42.8(a)(3), (b)(2).

²⁰ See *supra* n.9 regarding claim 26.

²¹ See *supra* n.9 regarding claim 26.

IV. ORDER

For the reasons given, it is:

ORDERED, based on a preponderance of evidence, that claims 22–26 of U.S. Patent 11,998,854 B1 are unpatentable;

FURTHER ORDERED that claims 1–17, 27, and 28 of U.S. Patent 11,998,854 B1 have not been shown to be unpatentable;

FURTHER ORDERED that Patent Owner’s motion to terminate is denied; and

FURTHER ORDERED because this is a final written decision, the parties to this proceeding seeking judicial review of our Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

PGR2024-00054
Patent 11,998,854 B1

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