

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of:	Gary Schmit	
U.S. Patent No.:	11,998,854	Attorney Docket No.: 58544-0002PS1
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Appl. Serial No.:	18/349,347	
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Title:	LOW-FRICTION RECREATIONAL SLIDE SYSTEM	

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**PETITION FOR POST GRANT REVIEW OF UNITED STATES PATENT
NO. 11,998,854 PURSUANT TO 35 U.S.C. §§ 321-326, 37 C.F.R. § 42**

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EXHIBITS

UATP-1001	U.S. Patent No. 11,998,854 to Schmit (“the ’854 patent”)
UATP-1002	Excerpts from the Prosecution History of the ’854 Patent (“the Prosecution History”)
UATP-1003	Declaration of Dr. Youjiang Wang
UATP-1004	U.S. Patent No. 7,896,779 to Phillips (“Phillips”)
UATP-1005	U.S. Patent Publication No. 2023/0129814 to Fallgatter (“Fallgatter”)
UATP-1006	<i>WN0400 – 400 Micron Nylon Mesh 45% Open Area</i> , Industrial Netting product page, archived by Internet Archive Wayback Machine on July 28, 2021 (https://web.archive.org/web/20210728222259/https://www.industrialnetting.com/wn0400-400-micron-nylon-woven-mesh.html) (“WN0400”)
UATP-1007	<i>Woven Mesh: Nylon, Polyester or Polypropylene Plastic Mesh</i> , Industrial Netting, archived by Internet Archive Wayback machine on June 21, 2021 (https://web.archive.org/web/20210621025620/https://www.industrialnetting.com/woven-mesh.html)
UATP-1008	<i>6.2 Friction</i> , University Physics Volume 1, openstax (retrieved from https://openstax.org/books/university-physics-volume-1/pages/6-2-friction)
UATP-1009	V.K. Kothari et al., <i>Assessment of frictional properties of some woven fabrics</i> , Indian Journal of Fibre and Textile Research, Vol. 19 (September 1994) 151-155
UATP-1010	W. Żurek et al., <i>Surface Frictional Resistance of Fabrics Woven from Filament Yarns</i> , Textile Research Journal, Vol. 55, No. 2 (1985), 113-121

- UATP-1011 W.D. Callister, *Materials Science and Engineering An Introduction*, ed. 7, John Wiley & Sons, Inc. (2007)
- UATP-1012 *WN0400 – 400 Micron Nylon Mesh 45% Open Area*, Industrial Netting product page, accessed at <https://www.industrialnetting.com/wn0400-400-micron-nylon-woven-mesh.html>
- UATP-1013 M. Watanabe, et al., *The Frictional Properties of Nylon*, *Wear*, 12 (1968) 185-191
- UATP-1014 British Patent Publication No. 402,259 to Wicksteed
- UATP-1015 *World's First Children's slide*, BBC NewsRound, April 17, 2012 (retrieved from <https://www.bbc.co.uk/news-round/17747678>)
- UATP-1016 A.F.W. Coulson, et al., *Frictional Properties of Nylon Yarn and Their Relation to the Function of Textile Guides*, *Journal of the Textile Institute Proceedings*, 46:1 (January 7, 2009), 101-111
- UATP-1017 R. Kisiel, *Somebody call elf 'n' safety, standards are on the slide!*, *DailyMail*, April 17, 2012 (retrieved from <https://www.dailymail.co.uk/news/article-2130923/Historians-discover-worlds-childrens-slide-built-90-years-ago-plank-wood.html>)
- UATP-1018 R. Allain, *Fair Physics: The Big Slide*, *Wired* (June 3, 2011) (retrieved from <https://www.wired.com/2011/06/fair-physics-the-big-slide/>)
- UATP-1019 L. Nichols, *The Physics of a Playground Slide*, *Sciencing.com* (April 24, 2017) (retrieved from <https://sciencing.com/physics-playground-slide-8657662.html>)
- UATP-1020 R. Allain, *The Physics of Going Fast –but Not Too Fast – on a Giant Slide*, *Wired* (September 23, 2022) (retrieved from <https://www.wired.com/story/the-physics-of-going-fast-but-not-too-fast-on-a-giant-slide/>)

UATP-1021	PTC Windchill Risk and Reliability Desktop Help Center, <i>Friction Coefficients</i> , (retrieved from https://support.ptc.com/help/wrr/r12.0.2.0/en/index.html#page/wrr/ReferenceGuide/prediction/friction_coefficients.html)
UATP-1022	U.S. Patent No. 5,246,401 to Boatwright
UATP-1023	U.S. Patent No. 6,142,879 to Phillips
UATP-1024	U.S. Patent No. 8,695,994 to Maratta
UATP-1025	U.S. Patent No. 6,231,483 to Phillips
UATP-1026	<i>Friction: Friction Coefficients and Calculator</i> , The Engineering Toolbox (2004) (retrieved from https://www.engineeringtoolbox.com/friction-coefficients-d_778.html)
UATP-1027	P.J. Blau et al., <i>Appendix: Static and Kinetic Coefficients for Selected Materials</i> , ASM Handbook vol. 18 (1992) 70-75
UATP-1028	N.P. Suh & M. Mosleh, <i>The Minimum Coefficient of Friction: What Is It?</i> , CIRP Annuals, Vol. 43, Issue 1 (1994) 491-495
UATP-1029	<i>Kings Island's Ultimate Fansite!</i> , King Island Central (retrieved from https://kicentral.com/parkhistory/past-attractions/scrappys-slides/)
UATP-1030	S. Murphy, <i>Is that the same giant slide we got on as children?</i> , Detroit Historical Society, September 9, 2022 (retrieved from https://detroithistorical.org/blog/2022-09-09-%E2%80%9Csame-giant-slide-we-got-children%E2%80%9D)
UATP-1031	Declaration of Nathaniel E. Frank-White re Internet Archive record of Industrial Netting websites corresponding to UATP-1006 and UATP-1007
UATP-1032	Industrial Netting Home page, archived by Internet Archive on

July 28, 2021 (<https://web.archive.org/web/20210728223652/https://www.industrialnetting.com/>)

- UATP-1033 Industrial Netting Nylon page, archived by Internet Archive on May 29, 2022 (<https://web.archive.org/web/20220529115425/https://www.industrialnetting.com/nylon.html>)
- UATP-1034 *Sailcloth*, Dictionary.com entry (retrieved from <https://www.dictionary.com/browse/sailcloth>)
- UATP-1035 Industrial Netting YouTube page, archived by Internet Archive on July 2, 2022 (<https://web.archive.org/web/20220702033025/https://www.youtube.com/user/IndustrialNetting/about>)
- UATP-1036 Industrial Netting Home page – screenshot of dropdown menu, archived by Internet Archive on July 28, 2021 (<https://web.archive.org/web/20210728223652/https://www.industrialnetting.com/>)
- UATP-1037 *Mesh*, Dictionary.com entry (retrieved from <https://www.dictionary.com/browse/mesh>)
- UATP-1038 *Fabric*, Dictionary.com entry (retrieved from <https://www.dictionary.com/browse/fabric>)

LISTING OF CLAIMS

Claim 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.
Claim 2	
[2]	The recreational slide system of claim 1, wherein the coefficient of friction is kinetic coefficient of friction.
Claim 3	
[3]	The recreational slide system of claim 1, wherein the slide surface includes a dry lubricant material.
Claim 4	
[4]	The recreational slide system of claim 3, wherein the dry lubricant material comprises a dry lubricant coating over the slide surface.
Claim 5	

[5]	The 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.
Claim 6	
[6]	The recreational slide system of claim 4, wherein the slide body includes a base wall and a pair of sidewalls and the dry lubricant coating covers a sliding surface of the base wall.
Claim 7	
[7]	The recreational slide system of claim 6, wherein the dry lubricant coating covers at least a portion of the pair of sidewalls.
Claim 8	
[8]	The recreational slide system of claim 3, wherein the dry lubricant material includes a resin, a lubricant, a thermal conductor, and a hardener.
Claim 9	
[9]	The recreational slide system of claim 8, wherein the dry lubricant material applied to the slide surface comprises: 20% to 30% by weight of the resin; 30% to 50% by weight of the lubricant; 1% to 5% by weight of the thermal conductor; and 20% to 30% by weight of the hardener.
Claim 10	
[10]	The recreational slide system of claim 9, wherein the resin comprises a silicon-based epoxy resin.
Claim 11	
[11]	The recreational slide system of claim 9, wherein the lubricant comprises polytetrafluoroethylene.
Claim 12	

[12]	The recreational slide system of claim 9, wherein the thermal conductor comprises copper.
Claim 13	
[13]	The recreational slide system of claim 9, wherein the hardener comprises an anhydride-based or an amine-based catalyst.
Claim 14	
[14]	The recreational slide system of claim 1, wherein the mesh layer of the ride vehicle comprises a weave of threads formed of monofilament synthetic fibers.
Claim 15	
[15]	The recreational slide system of claim 14, wherein the monofilament synthetic fibers comprise a polyamide monofilament structure.
Claim 16	
[16]	The recreational slide system of claim 14, wherein the weave of threads comprises 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.
Claim 17	
[17]	The recreational slide system of claim 14, 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%.
Claim 22	
[22pre]	A ride vehicle configured to support a rider down a non-wet lubricated recreational slide, the ride vehicle comprising:
[22a-i]	an elongate body that extends between a first end and an opposite second end,

[22a-ii]	the body including a central core positioned between
[22a-iii]	a top surface of the ride vehicle
[22a-iv]	and a woven mesh layer that forms a bottom surface of the ride vehicle that is configured to contact the non-wet lubricated recreational slide;
[22b]	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%.
Claim 23	
[23]	The ride vehicle of claim 22, wherein the woven mesh layer comprises a weave of threads formed of monofilament synthetic fibers.
Claim 24	
[24]	The ride vehicle of claim 22, wherein the monofilament synthetic fibers comprise a polyamide monofilament structure.
Claim 25	
[25pre]	A ride vehicle configured to support a rider down a non-wet lubricated recreational slide, the ride vehicle comprising:
[25a-i]	an elongate body that extends between a first end and an opposite second end,
[25a-ii]	the body including a central core positioned between
[25a-iii]	a top surface of the ride vehicle
[22a-iv]	and a woven mesh layer that forms a bottom surface of the ride vehicle that is configured to contact the non-wet lubricated recreational slide;
[25b]	wherein 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.

Claim 26	
[26]	The 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.
Claim 27	
[27pre]	A recreational slide system, comprising:
[27a]	the ride vehicle of claim 22; and
[27b]	a slide 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;
[27c]	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 28	
[28]	The recreational slide system of claim 27, wherein the coefficient of friction is kinetic coefficient of friction.

UATP IP, LLC (“Petitioner” or “UATP”) petitions for Post Grant Review (“PGR”) under 35 U.S.C. §§ 321-326 and 37 C.F.R. § 42 of claims 1-17 and 22-28 (“the Challenged Claims”) of U.S. Patent No. 11,998,854 (“the ’854 patent”).

I. STANDING

Petitioner certifies that the ’854 Patent is available for PGR. UATP is not barred or estopped from challenging the Challenged Claims on the below-identified grounds, has not filed a civil action regarding the ’854 patent, and this Petition is being filed within nine months of the issuance of the ’854 patent. 37 C.F.R. § 42.201-202.

II. TECHNOLOGY BACKGROUND

The use of slide systems that include a slide and ride vehicle have been used for decades. UATP-1003, ¶¶32-48. For example, slides for recreational purposes have been well-known since at least the early 1900s. UATP-1014, 1:16-17 (1932 British patent publication describing that “[t]he chute is a common piece of amusement apparatus in children’s playgrounds”); UATP-1004, 1:34-35 (“a plethora of sliding devices which are employed for recreational purposes”); UATP-1003, ¶¶32-38. These early slides consisted of a ladder leading to a platform and a sloped surface descending from the platform to the ground. *See id.*

Dry slides at amusement parks, including at prominent destinations like Coney Island Parks, were used with burlap sacks or other fabric mats as a ride vehicle

between the rider and the slide surface.



UATP-1029, 1 (describing the “Flying Carpet” slide at King’s Island Amusement Park as “a classic mat slide [where guests] would ride down in burlap sacks”); *see also* UATP-1017, 2 (describing “the big potato sack slide”); UATP-1020, 3 (describing the Belle Isle Park slide as “wide enough that six burlap-sack-wearing people can ride at a time”); UATP-1030, 1 (describing Belle Isle slide: “Riders would...speed down atop a burlap potato sack”).



UATP-1030, 2 (showing original Giant Slide riders on mats)

In all their variations, the thrill of a slide comes from the speed/acceleration of descent – a fact that has been well known since the earliest slides were used.

UATP-1018, 2 (describing with regard to a potato sack slide: “Faster equals more

fun”); *see also* UATP-1017, 8. The speed of descent on a slide can be influenced by the slope of the slide and the materials used on the surface of the slide and sliding vehicle. UATP-1003, ¶¶37-48.

The materials of the slide, or coatings applied to the slide, were well-known to impact the speed of descent, and were selected to lower the coefficient of friction between the slide and the rider or ride vehicle. UATP-1003, ¶¶39-48. Indeed, a wide variety of slide constructions and lubricants were known and used specifically to affect the coefficient of friction between the slide and rider/vehicle, and increase the speed/acceleration. *See* UATP-1019, 2, (“lubricants can reduce the effects of friction”); UATP-1022, 3:5-17 (describing a slide and sled with a hard wax coating to provide a slippery surface); UATP-1018, 2 (“the slide guy would take some pledge and spray it at certain spots on the slide every so often... [t]his sure seemed to make the kids go faster”); UATP-1020, 4 (“the magnitude of this [frictional] force depends on two thing: one is the two surface that are interacting, which we call the coefficient of kinetic friction”), 11 (“if you want to keep your riders on the slide, you need to increase the coefficient of friction between them and the slide”), 12 (“the sacks are made of burlap, which is scratchy and provides some fiction – and because all the riders have to wear these sacks, that makes for a more consistent, known surface than whatever clothing the riders happen to be wearing”); UATP-1003, ¶¶32-48.

Additionally, the use of a variety of low friction materials in constructing slides and slide materials, for example PTFE in slide coatings and nylon slide vehicles, was well-known. UATP-1023, 4:1-16 (describing a “low friction, highly durable” vehicle “composed of... sail cloth, nylon, Dacron, polyester or Texlon”); UATP-1024, 4:46-50 (describing a slide vehicle base coated with a film of “Teflon™ or Delrin™ plastic material”), UATP-1025, 3:7-10 (describing bottom of sliding case including “nylon, Texion, Dacron, polyester resins, injection molded plastics, thermoplastics” etc.); UATP-1004, 4:43-46 (describing that slide surface and vehicle bottom can include “nylon, Teflon, sailcloth, Dacron, vinyl, artificial turf, synthetic carpet and polyester resins”). The coefficients of friction between these and other common materials are known and published. *See generally* UTAP-1021; UATP-1026; UATP-1027; UATP-1003, ¶¶43-48.

Simply stated, dry-lubricated slide surfaces and complementary low-friction ride vehicles, were well-known in the art, including slide systems that utilized Teflon/PTFE and nylon to achieve low friction.

III. THE '854 PATENT

A. Brief Description

The '854 patent is directed to “[a] recreational slide system” including “a slide and a ride vehicle configured to support a rider down the slide.” UATP-1001, Abstract. The slide has “a slide surface provided with a dry lubricant material.”

Id., 1:15-16. “A dry slide is considered to be any slide that is free of any fluid or wet lubricant flowing down the slide surface and between a rider or the ride vehicle and the slide surface.” *Id.*, 1:43-45; UATP-1003, ¶¶49-52.

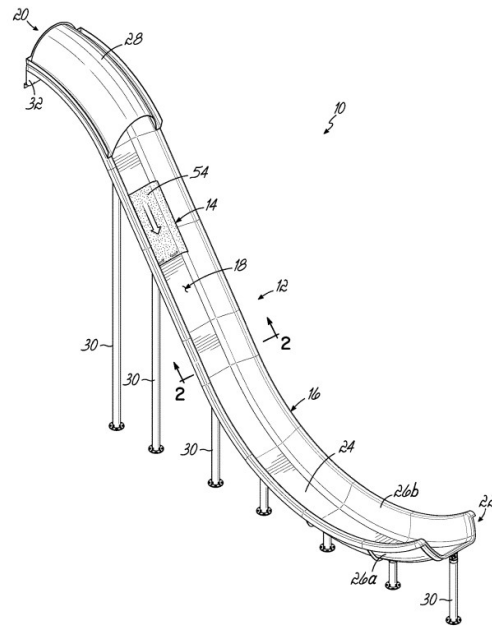


FIG. 1

UATP-1001, Fig. 1

“[T]he slide surface 18 includes a dry lubricant material provided as a coating 34 that is applied to the slide body 16 along the entire length of the slide surface 18 (i.e., between the top entrance 20 of the slide 12 to the bottom exit 22).”

UATP-1001, 5:56-62. “[T]he formulation for the dry lubricant material that is applied to the slide is a mixture comprising the following: (i) a resin, (ii) a lubricant, (iii) a thermal conductor, and (iv) a hardener, otherwise referred to as a hardening

or curing agent.” *Id.*, 7:13-17.

The ’854 patent describes a “ride vehicle includ[ing] a fabric layer that forms a top surface configured to contact the rider and a mesh layer that forms a bottom surface configured to contact the slide surface.” UATP-1001, 2:5-8.

“The 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.” *Id.*, 5:38-40.

The ’854 patent explains that “[f]or most [slide] riders, a fast slide speed (i.e., a fast rate of descent down the slide) is more thrilling... and therefore is more desirable.” *Id.*, 1:26-29. “To this end, maintaining a low coefficient of friction between the rider or a ride vehicle that supports the rider and the slide surface provides for a fast and exciting slide.” *Id.*, 1:29-32. The ’854 patent describes that “[t]he coefficient of friction between the mesh layer of the ride vehicle and the non-wet lubricated slide surface may be within a range of between about 0.03 to about 0.2, and particularly within a range of between about 0.05 to about 0.12.” *Id.*, 2:8-12, 1:48-51 (“[t]he 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.”), 4:26-33, 5:41-46, 6:16-21; UATP-1003, ¶¶51-52.

B. Prosecution History

The inventors of the '854 patent purport to have invented a system including a slide and a ride vehicle that are formed from materials that provide a low coefficient of friction between them – claim 1 recites “a coefficient of friction between the mesh layer of the ride vehicle and the non-wet lubricated surface [of the slide] is within a range of between about 0.03 to about 0.2.” The materials described in the '854 patent, however, (and, notably, not recited in the independent claims) to achieve friction coefficients within the claimed range were well-known by the Critical Date for use in forming slide surfaces and contacting surfaces of a ride vehicle. UATP-1003, ¶¶53, 43-48. In issuing the '854 patent, the Examiner failed to understand that the coefficient of friction between two materials is an inherent characteristic of the materials in the system – not something that the inventor invented—the claimed range of coefficients was large and overlapped with what the '854 patent acknowledged as “typical” of dry slides at the Critical Date. UATP-1001, 1:48-51; UATP-1002, 135-136 (citing the range of coefficient of friction in the reasons for allowance as not taught or fairly suggested by the prior art); UATP-1003, ¶54. Further, and as described below, the limitations of the other independent claims related to ride vehicle materials recite characteristics of a mesh that were also well-known at the Critical Date and would have been easily identified and selected by a POSITA. UATP-1003, ¶¶55, 32-48. Had the Examiner properly considered the

prior art, the overbroad claims of the '854 patent never would have issued in their current form.

During accelerated examination, the independent claims of the '854 patent were rejected as obvious over U.S. 2023/0129814 ("Fallgatter," UATP-1005), or alternatively over Fallgatter and U.S. 2006/0168805, or alternatively over Fallgatter and U.S. 5,427,698. UATP-1002, 50-51, 69-76. Applicant argued that claim 1 was distinguished over Fallgatter because (1) "Fallgatter only arbitrarily discloses a CoF of the low friction coating of the slide rather than a CoF *between* two surfaces," and Fallgatter's disclosure of "various configurations of a ride vehicle with the slide" makes it "unclear as to what materials the CoF values disclosed in Fallgatter apply," (2) "Fallgatter teaches that the bottom surface of the textile ride vehicle is coated with the low-friction coating" so "there is no teaching in Fallgatter of forming the bottom of the textile ride vehicle using a mesh layer," and (3) "Fallgatter's disclosure that the friction-reducing slide coating "has a CoF lower than the CoF of the textile substrate and about 0.25" would mean that a CoF between the slide and ride vehicle bottom "must be greater than 0.25 and outside the range recited in claim 1." *Id.*, 116-118. Applicant further amended claims to incorporate subject matter deemed allowable into independent claims, including "the thermal conductor being copper," and "the amount of interstitial openings and the size of the diameter of the thread." *Id.*, 74, 108-114, 119-121. Following the argument

and amendment of the claims, the application was allowed, with the examiner stating that Fallgatter “teaches the slide system as found in claim 1” but “does not teach the coefficient of friction being between 0.03 and 0.2 [so] the two matching surfaces do not have that coefficient of friction.” *Id.*, 135. However, as discussed in §VI, these features (as well as other features indicated as allowable in the only rejection of the claims), were well-known by persons of skill in the art at the time of the patent, and further are taught by the combination of Phillips, Fallgatter, and WN0400.

IV. Level of Ordinary Skill

For purposes of this IPR, a person of ordinary skill in the art as of the Critical Date (a “POSITA”) 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. UATP-1003, ¶¶29-48.

V. Claim Construction

All claim terms should be construed according to the *Phillips* standard. *See* 37 C.F.R. § 42.100. Given the noticeable similarity between the predictable combinations in Grounds 1A-B and 2A-B (below) and the preferred embodiment of the ’854 patent, no formal construction is necessary in this proceeding. *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011); UATP-1003,

¶¶58-302.¹

VI. THE CHALLENGED CLAIMS ARE UNPATENTABLE

Petitioner requests PGR of the Challenged Claims on the grounds listed below. The Declaration of Dr. Youjiang Wang (UATP-1003) supports this Petition.

Ground	'854 Patent Claims	Basis for Rejection
Ground 1A	1-4, 6-7	§§102/103—Phillips
Ground 1B	1-4, 6-7, 14-17, 22-28	§103—Phillips in view of WN0400
Ground 2A	1-7	§103—Phillips in view of Fallgatter
Ground 2B	1-7, 14-17, 22-28	§103—Phillips and Fallgatter in view of WN0400
Ground 3A	8-13	§112(a)—Enablement
Ground 3B	5, 26	§112(b)—Indefiniteness

The '854 patent was filed on July 10, 2023, claiming priority to November 1, 2022 (“Critical Date”). UATP-1001, 1. UATP does not concede the claimed priority date is correct, but each applied reference pre-dates the Critical Date.

Reference	Filing	Publication	Section
Phillips	November 12,	March 1, 2011	§102(a)(1)-(2)

¹ Petitioner is not conceding that each claim satisfies all statutory requirements, nor waiving any arguments concerning claim scope or grounds that can only be raised in district court.

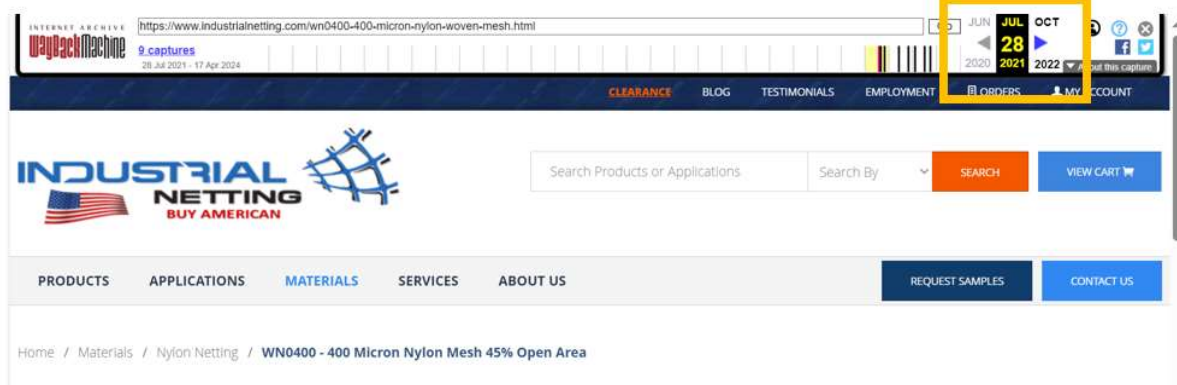
Reference	Filing	Publication	Section
(UATP-1004)	2007		
Fallgatter (UATP-1005)	October 24, 2022	April 27, 2023	§102(a)(2)
WN0400 (UATP-1006)	N/A	July 28, 2021	§102(a)(1)

WN0400 (UATP-1006) was published on the internet at least as of July 2021, and was generally available and known to the relevant technical community before the Critical Date. UATP-1003, ¶¶60-73; UATP-1031, 1, 7-9 (confirming WN0400 website was archived by Internet Archive as of July 28, 2021). A reference is a prior art printed publication if, before the Critical Date, the reference was “disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence, can locate it.” *SRI Int’l, Inc. v. Internet Sec. Sys., Inc.*, 511 F.3d 1186, 1194 (Fed. Cir. 2008); *see also In re Klopfenstein*, 380F.3d 1345, 1348 (Fed. Cir. 2004) (a reference is a printed publication if it was “sufficiently accessible to the public interested in the art”) (citation omitted).

Industrial Nettings products (and product webpages) were disseminated to members of the public interested in purchasing and using textile meshes and nettings and locatable by such interested public and is accordingly a printed publica-

tion. UATP-1003, ¶¶63-64 (describing marketing purpose of product specification); *SRI*, 511 F.3d, 1196; *Valve Corp. v. Ironburg Inventions Ltd.* 8 F.4th 1364, 1374 (Fed. Cir. 2021). As explained below, WN0400 could be located by interested members of the public because it was indexed on Industrial Nettings' website and accessible through search engines. UATP-1003, ¶¶65-72.

WN0400 was published on the internet on the Industrial Netting website by at least July 28, 2021, which the archived version corroborates. UATP-1003, ¶61; UATP-1006, 1; UATP-1012 (current version of WN0400); UATP-1031, 1 (Declaration from Internet Archive Records Request Processor), 7-9. Accordingly, WN0400 was made available to interested persons as of at least July 2021. *See SRI*, 511 F.3d, 1196 (a "reference is 'publicly accessible' upon a satisfactory showing that such document has been disseminated or otherwise made available"); *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039, Paper 29 at 17-21 (PTAB Dec. 20, 2019) (precedential) (finding indicia of publication on the reference relevant to public availability and sufficient for institution).



Moreover, the webpage itself lists a copyright of “2021.” *Hulu*, IPR2018-01039, Paper 29 at 17-21 (PTAB Dec. 20, 2019) (precedential).



By the Critical Date, Industrial Netting was a well-known website in the textile industry that sold various types of nettings and meshes for multiple purposes. UATP-1003, ¶¶66-68. WN0400 and other product pages on Industrial Netting’s website were “created for dissemination to the interested public” to provide information about products that Industrial Netting sold. UATP-1006, 1 (including button for requesting purchase information); *Weber, Inc., v. Provisur Techs., Inc.*, 92 F.4th 1059, 1065 (Fed. Cir. 2024); *Valve*, 8 F.4th at 1374 (where “a publication’s

purpose is ‘dialogue with the intended audience,’ that purpose indicates public accessibility.”) (citation omitted). A POSITA would have been familiar with the Industrial Netting website and would have been able to find the website (and others like it) by the Critical Date. UATP-1003, ¶68. Thus, a POSITA would have known of the Industrial Netting site and its product pages like WN0400, would have been able to access the WN0400 product page, and indeed did access it. *Id.*; *SRI*, 511 F.3d, 1196.

WN0400 was freely available and disseminated via Industrial Nettings website. *See Cordis Corp. v. Boston Scientific Corp.*, 561 F.3d 1319, 1333 (Fed. Cir. 2009); UATP-1003, ¶69. Additionally, on July 28, 2021, a POSITA could have easily navigated to WN0400 because the Industrial Netting website included multiple drop-down menus offering users ways to find textiles fitting various parameters: for example, searching by product, application, or material. UATP-1003, ¶¶70-73 (citing UATP-1032, 1 (Internet Archive version of Industrial Netting Home Page showing Search Bar and Drop Down Menus); UATP-1033, 1 (Internet Archive version of Industrial Netting Home Page showing results for search for Nylon Materials), 3 (Listing for WN0400)). Accordingly, a POSITA could locate WN0400 via easily navigable pathways. UATP-1003, ¶¶63-73; *SRI*, 511 F.3d, 1196.

Thus, WN0400 is a prior art printed publication.

**A. GROUND 1A – PHILLIPS ANTICIPATES OR RENDERS
OBVIOUS CLAIMS 1-4 AND 6-7²**

1. Phillips Overview

Phillips describes a “slide having a top surface” made of a “low friction, durable sheeting material which enables the user to traverse thereon whether the top surface is wet or dry.” UATP-1004, 2:44-52; 1:13-17 (“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.”), 3:16-23; UATP-1003, ¶¶75-78. “[A] user can slide upon a surface which can be inclined while being supported by a low friction, durable membrane either attached to a sports board or as a stand-alone sheeting material.” UATP-1004, 1:22-25. In particular, Phillips describes the slide top surface is made of “Teflon” (PTFE). *Id.*, 4:43-46 (describing “top surface 20” of slide “composed of low friction high durable [sic] material such as . . . Teflon.”).

² Ground 1A comprises two separate Phillips-based grounds based on §102 or §103 that are presented collectively for convenience.

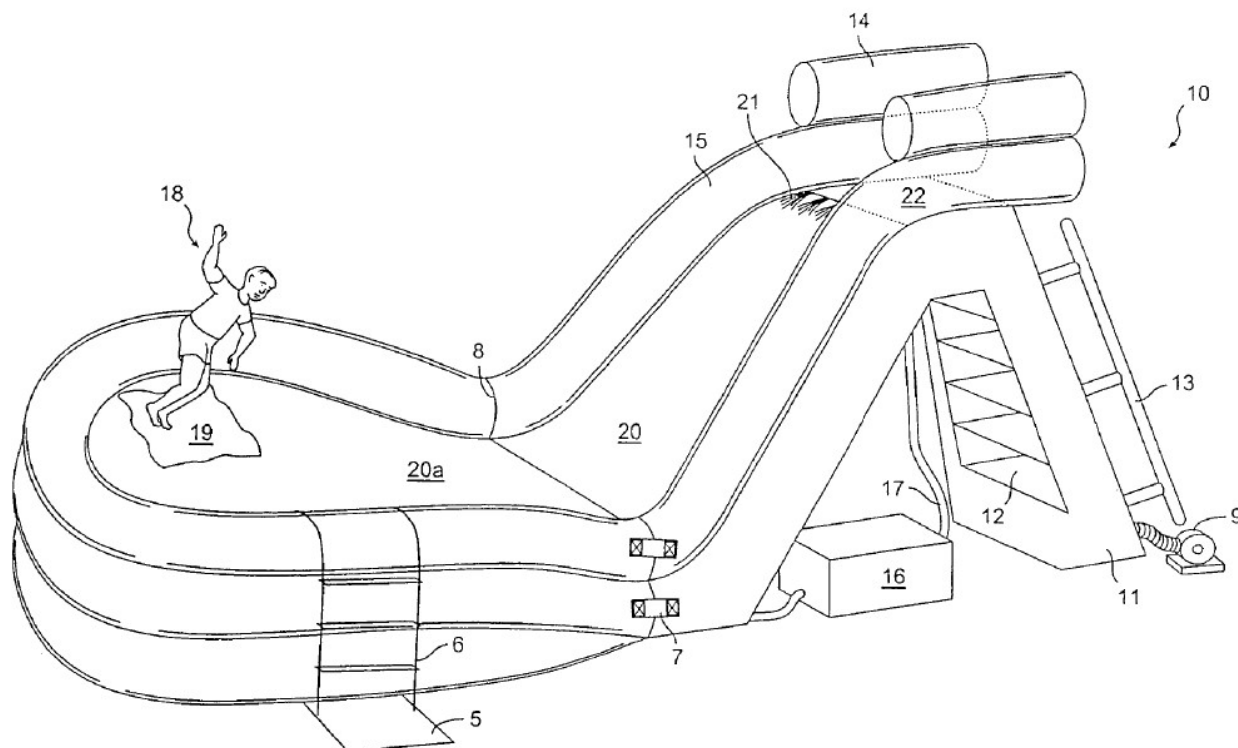


FIG. 1

UATP-1004, Fig. 1

Phillips describes multiple types of sliding vehicles having a low friction, fabric bottom for use with the slide. *Id.*, 2:4-11.

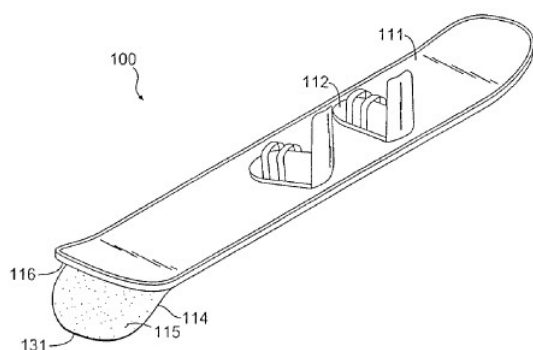


FIG. 5

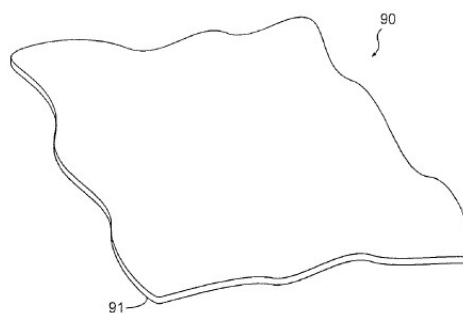


FIG. 6

UATP-1001, Figs. 5-6

In one example, Phillips describes a sports board as a ride vehicle that has “a top for contacting the user and a bottom for sliding upon a slide.” *Id.*, 3:12-13, 3:9-12. The sports board has “an additional low friction, durable sheeting layer appended to and supported by the bottom of the sports board.” *Id.*, 3:19-21; 3:27-32.

Phillips describes that “[b]oth membrane 6 and top surface 20 can each be composed of low friction high durable [sic] material such as a member selected from the group consisting of nylon, Teflon, sailcloth, Dacron, vinyl, artificial turf, synthetic carpet and polyester resins.” *Id.*, 4:43-46.

2. Element-by-Element Analysis

Claim 1

[1pre] A recreational slide system, comprising:

To the extent the preamble is limiting, Phillips discloses a recreational slide system. As described above, recreational slide systems including slides and ride vehicles were well-known by the Critical Date. *Supra* §II; UATP-1003, ¶¶32-38.

For example, Phillips 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.” UATP-1004, 1:13-17, 4:38-39, Fig. 1; *see also* §§VI.A.2.[1a-i]-[1c]; UATP-1003, ¶¶79-81.

[1a-i] a slide

Phillips discloses the recreational slide system includes a slide (e.g., slide

10). UATP-1004, 2:15-17 (“FIG. 1 depicts *slide* 10 used as the focal point of the exercise apparatus and recreational system of the present invention.”); UATP-1003, ¶¶82-83.

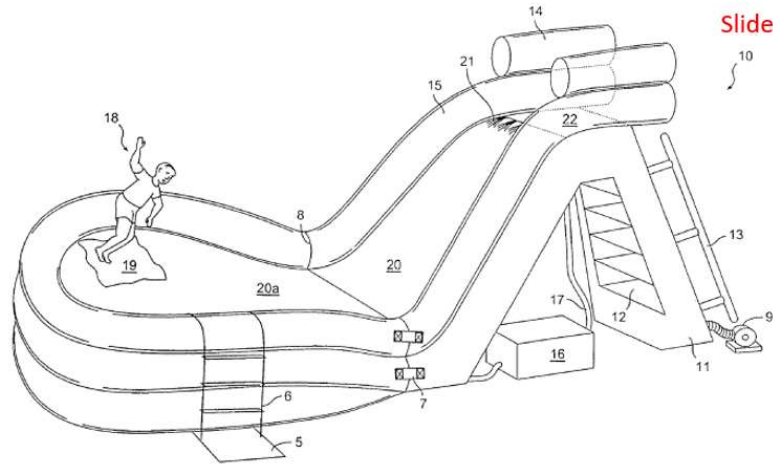
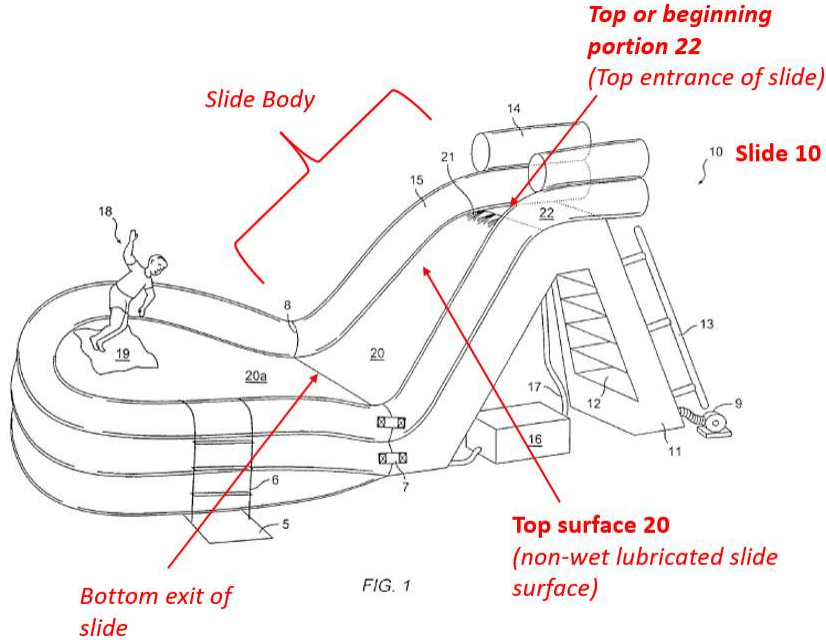


FIG. 1

UATP-1003, ¶82 (UATP-1004, Fig. 1 (annotated))

[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

Phillips discloses a slide body (e.g., top surface 20) that has a low-friction surface for use when dry. UATP-1003, ¶¶84-87. Phillips describes that the “[s]lide is provided with a top surface 20... composed of a flexible sheeting layer of a durable, low friction material enabling the user to traverse the slide whether the top surface 20 is wet or dry.” UATP-1004, 2:19-24. As illustrated below, Phillips describes that the top surface 20 extends between a top of the slide and a bottom of the slide. UATP-1004, 4:34-37, 6:54-55, FIG. 1; UATP-1003, ¶84.



UATP-1003, ¶84 (UATP-1004, Fig. 1 (annotated))

Phillips’ low-friction slide surface provides a slide body with a non-wet lubricated slide surface that facilitates sliding. UATP-1004, 4:21-24 (“Top surface 20 is composed of a flexible sheeting layer of a **durable, low friction material enabling the user to traverse the slide whether the top surface 20** is wet or dry.”), 8:20-22 (“it is possible to selectively provide low friction durable sheeting material 183 to the top surface of slide 180”); UATP-1003, ¶¶85-86.

Phillips describes that the slide body has a non-wet lubricated slide surface made of “Teflon”—a conventional and widely-used non-wet lubrication material. UATP-1004, 4:43-46 (“Both membrane 6 and top surface 20 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”), 5:63-64, 6:6-8 (“this surface can be coated with a **low friction durable coating material** and used as a ramp as previously discussed”); UATP-1003, ¶86.

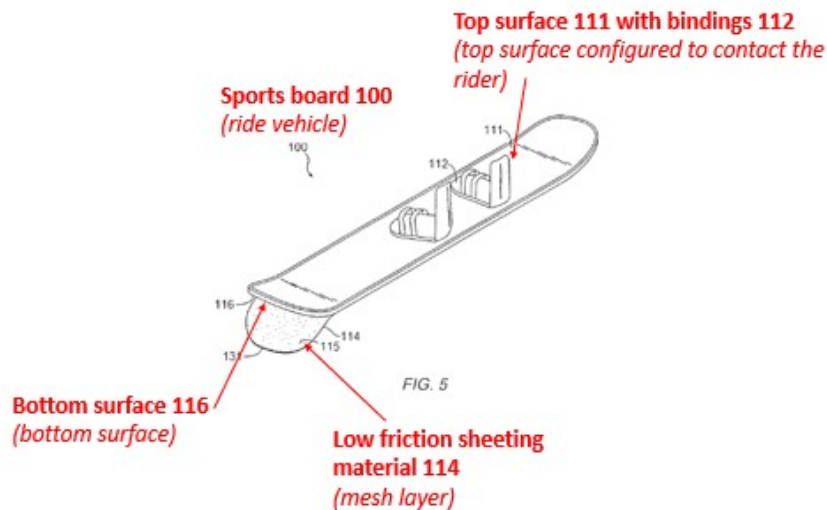
[1b-i] a ride vehicle configured to support a rider down the slide,

Phillips discloses element [1b-i]. UATP-1003, ¶¶88-92. The ’854 patent specification describes various ride vehicles (*see* UATP-1001, Figs. 3, 7a-b), and states that “while aspects of the present invention are shown and described in the context of certain types or configurations of ride vehicles it will be understood that the same inventive concepts related to aspects of the mesh material 46 may be implemented with different ride vehicle designs.” UATP-1001, 11:58-63. As described above, ride vehicles such as sacks and mats were well-known by the Critical Date, and a variety of additional ride vehicles were contemplated in the prior art by the Critical Date as well. *Supra* §II; UATP-1003, ¶¶88, 34-48.

Phillips describes multiple ride vehicles, including a membrane 19, sports board 42 (see Figs. 4-5), sliding boards or sheets of material. UATP-1004, 8:34-36 (“Virtually any riding element can be employed”), 4:40-41 (“user 18 is supported by membrane”), 6:16-18 (“sports board”), Figs. 5, 6; UATP-1003, ¶89.

As an example, Phillips describes a sports board illustrated in Fig. 5 below. UATP-1004, 7:6-30, 1:50-2:32, Fig. 5. As another example, Phillips describes that “stand-alone sheets of [durable low friction] material can be employed to support a

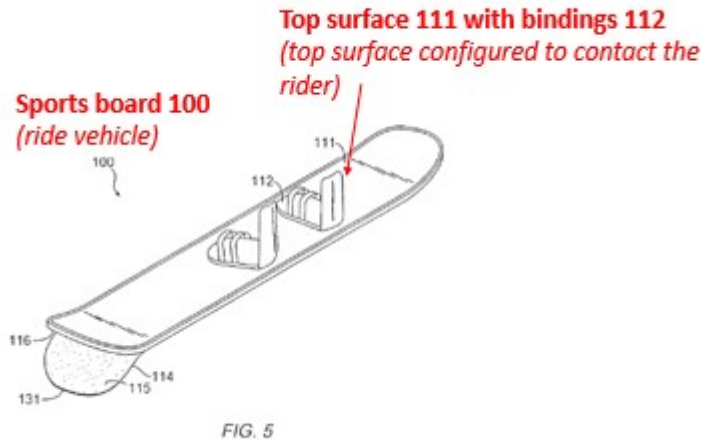
user as one traverses along the slide.” UATP -1004, 8:43-45, 3:29-33. Both the sports board and the membrane are ride vehicles that support the user as the user slides down the slide. UATP-1003, ¶¶90-92.



UATP-1003, ¶90 (UATP-1004, Fig. 5 (annotated))

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

Phillips’ “sports board is provided with a top for contacting the user and a bottom for sliding upon a slide.” UATP-1004, 3:12-13; UATP-1003, ¶¶93-96. For example, Phillips describes with regard to Fig. 5, that a sports board “having bindings 112 is of the shape of a snowboard having a rigid top surface 111, bindings 112 and bottom surface 116.” UATP-1004, 7:7-9; *see also id.*, 8:40-43 (describing board with a solid core covered by padding and “a bottom surface of a durable low friction sheeting material.”).



UATP-1003, ¶93 (UATP-1004, Fig. 5 (annotated))

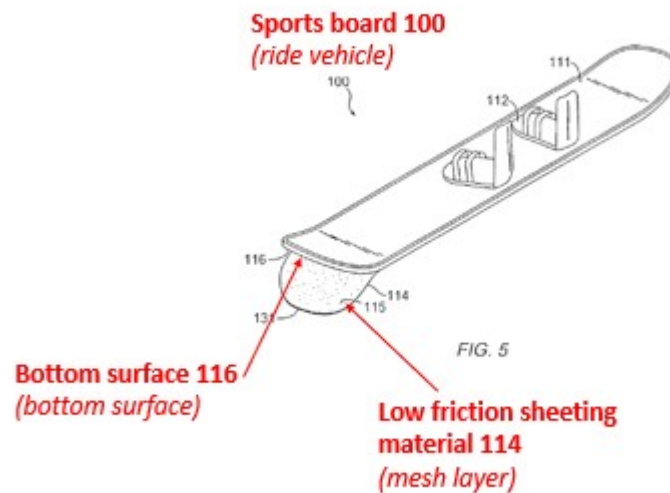
Phillips’ “stand-alone sheets of [durable low friction] material” that are “employed to support a user as one traverses along the slide,” similarly providing a top surface configured to contact the rider. UATP-1004, 8:43-45, 3:29-33.

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

Phillips describes a ride vehicle with a mesh layer that forms a bottom surface configured to contact the slide surface. UATP-1003, ¶¶97-104. For example, the ride vehicle (e.g., Phillips’ “sports board” or stand-alone sheets), **has a “bottom for sliding upon a slide.”** UATP-1004, 3:12-13. The bottom surface of the ride vehicle is formed from a low-friction sheeting material. UATP-1004, 5:27-35, 7:7-23, 8:40-43, 8:49-61, 9:9-13; UATP-1003, ¶¶97-98. The material forming the bottom surface of the ride vehicle is “composed of low friction high durable material” such as “nylon, Teflon, sailcloth, Dacron, [and] vinyl,” among others.”

UATP-1004, 4:43-46.

The “durable low friction sheeting material 114 can be applied to bottom surface 116 by applying adhesive 115 to sheeting material 114 and adhering it to board 111,” such that the low-friction material is configured to contact the slide surface. UATP-1004, 7:10-12.



UATP-1003, ¶98 (UATP-1004, Fig. 5 (annotated))

The durable low-friction sheeting material described by Phillips provides a mesh layer. Phillips also describes “sailcloth” as a material for the layer that forms a bottom surface configured to contact the slide surface, which a POSITA would have understood as a woven fabric material that provides a mesh. UATP-1004, 4:43-46; UATP-1003, ¶¶99-100 (citing UATP-1034). Moreover, Phillips’ describes example materials including “nylon” and “Dacron,” which a POSITA

would have appreciated are commonly and commercially available as a woven fabric and provide durability and low-friction surfaces in a mesh form. UATP-1003, ¶¶101-102.

To be clear, even if not revealed to a POSITA by the description offered by Phillips (which it is), a POSITA would have predictably implemented the bottom of the vehicle with a mesh in accordance with Phillips' suggestions to form the bottom surface of the ride vehicle from a "low friction high durable material." Indeed, Phillips expressly discloses materials of "nylon" and "sailcloth." UATP-1004, 4:43-46. Based on Phillips description of sailcloth, a POSITA would have been prompted to utilize a woven material, such as a woven material made from "nylon." Indeed, a POSITA would have recognized, and found obvious from Phillips' description, that woven nylon was a conventional material that would have enhanced the "low friction" between the slide and vehicle (e.g., based on Phillips express teaching of "nylon"), and that it is a durable and widely-available material. UATP-1003, ¶¶103-104. Accordingly, a POSITA plainly would have been prompted to use a "nylon" mesh material, based on Phillips' teachings, rendering obvious 1b-iii. *Id.* A POSITA would have had a reasonable expectation of success in implementing the ride vehicle with a mesh bottom for a number of reasons, including that ride vehicles made of a woven fabric were well-known by the Critical Date, as was the characteristic of nylon as a low-friction and available fabric.

See UATP-1003, ¶¶103, 140, 32-48.

[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.

Phillips describes a slide system that provides a coefficient of friction between the mesh layer of the ride vehicle and the non-wet lubricated slide surface that is within the range of between about 0.03 and about 0.2. Phillips expressly advocates for “low friction” between slide and ride vehicle and specifies materials that achieve “low friction.” For example, Phillips describes use of “Teflon” for the slide surface and “nylon” for the ride vehicle bottom. UATP-1004, 4:43-46 (“Both membrane 6 and top surface 20 can each be composed of low friction high durability material such as a member selected from the group consisting of nylon, Teflon, sailcloth, Dacron, vinyl... and polyester resins.”). UATP-1003, ¶¶105-116.

These materials provide “low friction” within the claimed range. The coefficient of friction between Teflon and nylon is about 0.05—well within the claimed range. UATP-1003, ¶¶105-107; UATP-1021, 1 (listing a dry coefficient of friction for Teflon-nylon interactions as 0.05). Pairings of other materials taught by Phillips likewise result in a coefficient of friction well within the claimed range, including Teflon/Teflon and nylon/nylon, among others. UATP-1026, 5 (listing a static frictional coefficient for nylon-nylon interactions as 0.15-0.25), 7 (listing a

kinetic frictional coefficient for Teflon-Teflon interactions as 0.04), UATP-1027, 4 (listing kinetic frictional coefficient for nylon-nylon interactions as 0.07 and kinetic frictional coefficient for Teflon-Teflon interactions as low as 0.04). Further, Teflon's low-friction properties are observed in low coefficients of friction in interactions with a variety of diverse materials, confirming that the kinetic frictional coefficient between Teflon and nylon would be around 0.05 given any number of constructions or characteristics of the nylon material. UATP-1003, ¶¶107-110 (citing UATP-1021; UATP-1026; UATP-1027).

Beyond the express teachings of "low friction" materials that a POSITA would have recognized as disclosing coefficients of friction within the claimed range, it was inherent in Phillips system that utilizes a Teflon slide surface and a nylon mesh layer. The frictional coefficient between a vehicle having a woven nylon bottom and a slide coated in Teflon (or indeed coated in nylon or various other materials disclosed by Phillips) would *necessarily* have a frictional coefficient within the claimed range—the coefficient of friction is a *property* of the interaction between the two surface materials (e.g., the ride vehicle bottom and the slide surface coating). The evidence confirms Phillips system provides a coefficient of friction that is well below 0.2—about 0.05—and thus within the claimed range.

UATP-1003, ¶110.

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.

Like the '854 patent, Phillips teaches “Teflon” slide surface and “nylon” ride vehicle bottom. Phillips’ “recreational system” (UATP-1004, 1:13-17) is just like the system described in the '854 patent and uses the same materials, likewise resulting in a coefficient of friction between 0.3 and 0.2. *Compare* UATP-1004, 4:43-46 (“nylon... Teflon...”) *with* UATP-1001, 8:9-10 (“the lubricant, such as PTFE”) 7:40-41, 10:51-53 (“Nylon”); UATP-1003, ¶¶112-114. “Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established.” *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977).

Tellingly, the '854 patent itself acknowledges in the Background section that prior “typical” dry slides achieved a coefficient of friction within 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.”.

UATP1001, 1:48-51; *see In re Patel*, 533 Fed. Appx. 1005, 1010 (Fed. Cir. 2014) (“It is well-established that a prima facie case of obviousness exists when the claimed and prior art ranges overlap”) (citation omitted). The '854 claims attach a numeric range calling out a known property of materials in the prior art, without

any significance or criticality attached to the range. See *in re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990) (describing that in order to demonstrate “the difference between the claimed invention and the prior art is some range or other variable within the claims ...the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range.”); see also *In re Geisler*, 116 F.3d 1465, 1470 (CAFC 1997) (“Only if the “results of optimizing a variable” are “unexpectedly good” can a patent be obtained for the claimed critical range”) (internal citations omitted).

Additionally, the '854 patent's claimed range of coefficients of friction is so broad as to be meaningless in distinguishing over prior slide systems. UATP-1003, ¶¶114, 53-57. The low end of the range (0.03) is close to the lowest frictional coefficient that can theoretically be achieved in physical systems.³ UATP-1028, 1. The high end of the range (0.2) overlaps with the range that the '854 patent ascribes to “typical” dry slides – from 0.15-0.3. UATP-1001, 1:48-51. The '854 patent lacks any explanation of significance or criticality to such a broad

³ And the '854 patent lacks enabling description of how to achieve such a low coefficient of friction in a slide system.

range. Further, reciting a known property of known materials in the art is not worthy of a patent, especially where the claimed range encompass prior “typical” slides, as well as Phillips’ slide system that achieves “low friction” via Teflon and nylon slide and vehicle materials. *See In re Crish*, 393 F.3d 1253, 1258 (Fed. Cir. 2004) (“A long line of cases confirms that one cannot establish novelty by claiming a known material by its properties”); *see also Atlas Powder Co. v. IRECO Inc.*, 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999) (“the discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art’s functioning, does not render the old composition patentably new to the discoverer.”).

Even if not anticipated by Phillips (which it is), 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. Phillips expressly advocates “low friction,” which would have prompted a POSITA to reduced coefficient of friction in order to promote a fast and exhilarating sliding experience. *Supra* §II; UATP-1003, ¶115 (citing UATP-1018, 2 stating “Faster equals more fun”). As the ’854 patent itself acknowledges in the Background section, a POSITA knew that even “typical” slides had a coefficient of friction of 0.15 (UATP-1001, 1:48-51), and a POSITA would have been motivated based on Phillips’ teachings to achieve low friction when implementing a slide system according

to Phillips' teachings.

Phillips provides specific examples of known low-friction materials that would have led a POSITA to achieve a coefficient of friction of between about 0.2 and 0.03. As described above, a POSITA would have been prompted to select Teflon and nylon materials that achieve low friction between slide surface and vehicle (e.g., below the 0.15 coefficient of friction value that was "typical" of dry slides). Here again, the Teflon and nylon mesh would have been predictably implemented to achieve a coefficient of friction of about 0.05. UATP-1021, 1 (listing a dry coefficient of friction for Teflon-nylon interactions as 0.05); *see also*, UATP-1026, 5, 7; UATP-1008, 4 ("the coefficients of kinetic friction are less than their static counterparts"); UATP-1003, ¶116 (noting that the static coefficient of friction between two surfaces is always *higher* than the kinetic coefficient of friction). These materials (e.g., nylon and Teflon) were both known by the Critical Date to have low frictional coefficients and to be durable, and a POSITA would have recognized that their use would fulfill the objectives that Phillips advocates. UATP-1003, ¶¶105-116 (citing UATP-1011); UATP-1004, 4:43-46. Moreover, a POSITA would have had a reasonable expectation of success in implementing the Philips' slide system with the nylon and Teflon materials because implementation of the system in accordance with Phillips' suggestions, including use of well-known materials, would have required only trivial modification if that. UATP-1003, ¶¶116,

140. In the resulting slide system, a coefficient of friction between the “nylon” mesh layer of the ride vehicle and the “Teflon” non-wet lubricated slide surface is within a range of between about 0.03 to about 0.2, as recited by Element 1[c].

Claim 2

[2] The recreational slide system of claim 1, wherein the coefficient of friction is kinetic coefficient of friction.

Phillips anticipates or renders claim 2 obvious. UATP-1003, ¶¶117-118. Static friction is the friction between two systems that are “in contact and stationary relative to one another,” while kinetic friction is friction between “two systems [that] are in contact and moving relative to one another.” UATP-1008, 1. Once an object is in motion, it is easier to keep it in motion, and “the coefficients of kinetic friction are less than their static counterparts.” UATP-1008, 4; UATP-1003, ¶¶117, 39-42. As described above, Phillips’ description that the slide includes a low friction sliding surface for a ride vehicle and list of low-friction materials would have motivated a POSITA to select materials for the slide surface and vehicle bottom that would have fallen within the claimed range of between about 0.03 to about 0.2 for kinetic coefficient of friction. UATP-1004, 2:44-52; 1:13-17, 3:16-23, 4:43-46; UATP-1003, ¶¶105-118. A POSITA would have understood that Phillips’ slide surface and vehicle bottom, formed from materials that Phillips lists such as Teflon and nylon, would have a kinetic coefficient of friction within

the range claimed in Element [1c]. UATP-1021, 1 (listing a dry coefficient of friction for Teflon-nylon interactions as 0.05); UATP-1003, ¶¶117-118.

Claim 3

[3] The recreational slide system of claim 1, wherein the slide surface includes a dry lubricant material.

Phillips anticipates or renders claim 3 obvious. UATP-1003, ¶¶119-120. Phillips describes a “slide having a top surface...provided with said low friction, durable sheeting material which enables the user to traverse thereon whether the top surface is wet or dry.” UATP-1004, 2:44-52; UATP-1003, ¶119. A POSITA would have understood that Phillips’ disclosure is consistent with the ’854 patent’s preferred embodiment of “a dry lubricant in the form of a coating” (UATP-1001, 2:21-22) where the “dry lubricant” is a “non-wet lubricant.” UATP-1001, 4:47-51; UATP-1003, ¶120.

Claim 4

[4] The recreational slide system of claim 3, wherein the dry lubricant material comprises a dry lubricant coating over the slide surface.

As described above (*supra* §VI.A.[1a-ii]), Phillips anticipates or renders obvious a dry lubricant coating over the slide surface. UATP-1003, ¶¶121-122, 84-87. Phillips teaches that the low friction surface of the slide can be a low friction coating. UATP-1004, 6:6-8 (“surface can be coated with **a low friction durable coating material** and used as a ramp”); UATP-1003, ¶121. It would have been obvious to a POSITA to implement Phillips’ slide system with a dry lubricant low

friction coating – as Phillips teaches – to simplify maintenance of the slide, allow customization of the slide surface, and decrease costs associated with manufacture of the slide. UATP-1003, ¶122.

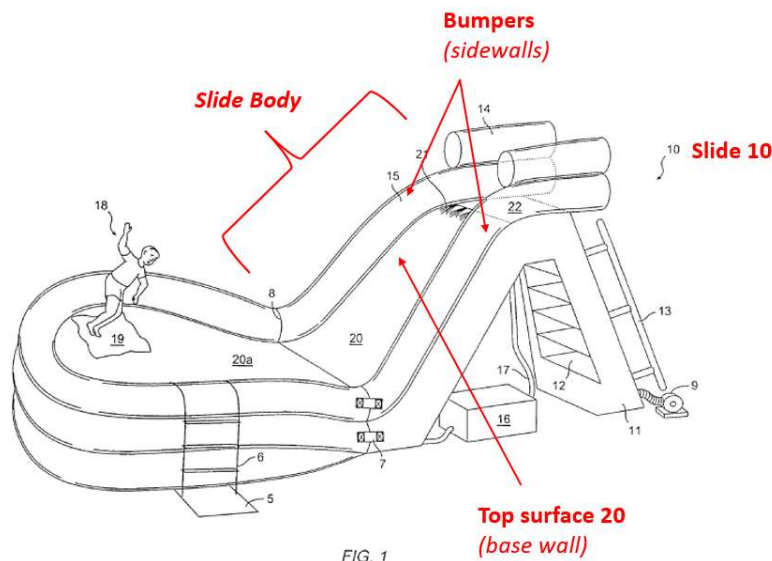
Claim 6

[6] The recreational slide system of claim 4, wherein the slide body includes a base wall and a pair of sidewalls and the dry lubricant coating covers a sliding surface of the base wall.

Phillips anticipates or renders claim 6 obvious. UATP-1003, ¶¶123-124.

Phillips describes that the “slide 10 is provided with bumpers 14 and 15 to define top surface 20 and to prevent the inadvertent slippage from top surface 20.”

UATP-1004, 4:25-27.



UATP-1003, ¶123 (UATP-1004, FIG. 1 (annotated))

As described above (*supra* §VI.A.[1a-i]), Phillips also describes that “[t]op surface 20 [i.e., base wall] is composed of a flexible sheeting layer of a durable,

low friction material enabling the user to traverse the slide whether the top surface 20 is wet or dry.” UATP-1004, 4:21-24; UATP-1003, ¶¶124, 82-83.

Claim 7

[7] The recreational slide system of claim 6, wherein the dry lubricant coating covers at least a portion of the pair of sidewalls.

Phillips anticipates or renders claim 7 obvious. UATP-1003, ¶¶125-128. Phillips describes that various sloped surfaces of a recreational slide system “can be selectively coated with a durable, low friction surface enabling user 193 to employ the present invention in a dry state.” UATP-1004, 8:7-10; UATP-1003, ¶¶125-126. Phillips describes that a ramp, interior of a cylindrical member, or half-pipe can be a part of the slide assembly, UATP-1004, 5:58-64, 8:7-10, 6:5-11, FIGS. 10, 13, 14A-D. A POSITA would have understood that bumpers on the slide may also be coated in the low friction coating to allow a user to engage with the bumpers during play or training, as it would be disadvantageous if the ride vehicle were to be slowed down if it accidentally impacts the edges during its descent (or if it purposely impacts the bumpers during practice of a sports trick). UATP-1004, 4:25-27, 1:50-62, 5:58-6:11; UATP-1003, ¶127. Additionally, a POSITA would have understood that applying the low friction coating to only the base wall would encourage chipping and wear at the edges of the coating, diminishing the area of the sliding surface and resulting in a higher CoF at the edges and an inconsistent ride experience depending on where the ride vehicle contacts the slide.

UATP-1003, ¶128. A POSITA would have been motivated to apply the low friction coating to at least a portion of the sidewalls to provide ride consistency.

UATP-1003, ¶¶125-128.

**B. GROUND 1B - PHILLIPS-WN0400 RENDERS CLAIMS
1-4, 6-7, 14-17, and 22-28 OBVIOUS**

1. WN0400 Overview

WN0400 is a product specification describing a nylon mesh. UATP-1006, 1; UATP-1003, ¶¶129, 60-73. WN0400 describes a product titled “WN0400 – 400 Micron Nylon Mesh 45% Open Area.” *Id.* The product is woven from “Monofilament Nylon 6 fiber 42 threads per inch” and includes “400 micron hole opening[s] with 45% open area.” *Id.* The specifications describe that the hole size is 0.016 inches. *Id.*, 2 (“400 micron hole opening”), 3 (“Hole Size (in): 0.016”).



UATP-1006, 1

2. Phillips-WN0400 Combination

Multiple reasons would have prompted a POSITA to implement Phillips' "low friction" slide system (described above §§VI.A.1) with a low friction bottom formed from nylon mesh having the characteristics taught by WN0400, to achieve known benefits, as articulated below. UATP-1003, ¶¶130-140. As described above, Phillips teaches that both a slide surface and ride vehicle bottom would have a low friction surface (e.g., "Teflon" and "nylon," or other materials). UATP-1004, 5:12-16, 7:9-27, 7:53-55. As described above, a POSITA would

have been aware that various materials described by Phillips are sometimes woven: for example, nylon, Dacron, sailcloth, etc., are often implemented as woven fabrics. UATP-1004, 4:43-46; UATP-1003, ¶¶131, 99-102. A POSITA would have found it obvious to select one of these materials (e.g., “nylon”) for the bottom of the ride vehicle in view of Phillips express teachings to do so. Moreover, a POSITA would have been motivated to choose a woven nylon (e.g. nylon mesh), in accordance with WN0400’s suggestions as a known durable and low-friction material. UATP-1011, 5 (describing “Major Application Characteristics” of polyamides (nylons) as “Good mechanical strength, abrasion resistance, and toughness; low coefficient of friction”); UATP-1003, ¶132. WN0400 provides a suitable example of a woven nylon mesh, which a POSITA would have predictably looked to when implementing Phillips’ teachings. UATP-1003, ¶¶130-132.

In the resulting system, the fabric-bottomed ride vehicle includes a nylon forming the bottom surface, based on Phillips’ teachings, and has woven mesh characteristics suggested by WN0400. UATP-1004, 4:43-46; UATP-1003, ¶133. It would have been obvious to a POSITA to select a nylon mesh to implement a ride vehicle with a low-friction bottom surface as Phillips teaches, based on the nylon mesh construction of WN0400, which describes particular characteristics of a durable and low friction nylon mesh. UATP-1003, ¶¶130-133.

Multiple reasons would have prompted a POSITA to implement Phillips’

slide system with a ride vehicle including a nylon mesh bottom surface, having characteristics in accordance with the teachings of WN0400. UATP-1003, ¶¶134-140.

First, a POSITA would have been motivated to implement a nylon mesh bottom of the ride vehicle based on the teachings of Phillips and WN0400 to provide a vehicle with “low friction” between the slide and vehicle. A POSITA would have recognized such construction as promoting fast sliding that enhances a user’s excitement and enjoyment when using the slide system, furthering Phillips’ express objectives. UATP-1003, ¶135 (citing UATP-1018). Phillips describes “nylon” as a material to implement its “low friction” ride vehicle, and a POSITA would have recognized the nylon mesh described by WN0400 as providing a low-friction/slippery surface to implement Phillips teachings. A POSITA would have understood that implementing the ride vehicle of Phillips with a nylon mesh bottom as taught by WN0400 would have achieved the “low friction” requirement of Phillips.

Second, a POSITA would have been motivated to utilize nylon mesh for the ride vehicle bottom based on Phillips express teachings of a fabric (e.g., nylon, Dacron, sailcloth) for use in the slide and vehicle surfaces. UATP-1004, 4:43-46; UATP-1003, ¶136. A POSITA would have been familiar with the characteristics of nylon, including its durability and low friction coefficient over many surfaces, consistent with Phillips’ suggestions. UATP-1003, ¶136 (citing UATP-1011); *see*

also UATP-1006, 2. A POSITA would have found the commercially available mesh material described in WN0400 (or any number of others like it) and would have understood that it was a suitable option for providing a woven textile low-friction bottom for the ride vehicle. Moreover, 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. UATP-1003, ¶¶136, 63-72.

Third, a POSITA would have understood that selecting a "looser" mesh fabric (e.g., a more open weave) has the advantage of sliding with low friction over a surface because of the spacing of the threads. UATP-1003, ¶137 (citing UATP-1010). Indeed, mesh fabrics with relatively larger apertures between strands were known to have an advantageously lower coefficient of friction (e.g., compared to more tightly woven fabrics). UATP-1010, 1 ("Variation of mesh size in monofilament fabrics affects the frictional resistance of these fabrics"), 3 (Table 1 showing Group IV (Fabric Nos. 13-15) includes nylon meshes of varying mesh size), 4 (Table 2 showing coefficients of friction of Fabric Nos. 13-15 against fabric, leather, and metal surfaces with the finest mesh (13) have a higher coefficient of friction than the coarsest mesh (15) in all cases); UATP-1003, ¶137. A POSITA would have understood that WN0400 is a mesh having a weave that includes holes with 400 micron hole openings 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. UATP-1006, 2, 3; UATP-1003, ¶137.

Fourth, a POSITA would have understood that a monofilament mesh fabric may also provide an advantage in sliding over surfaces. UATP-1003, ¶138 (citing UATP-1007). “Monofilament yarns are a single continuous filament which produces a relatively smooth surface” and “the straight-through pores of monofilament fabrics offer minimal flow restriction and surface loading of particles.” UATP-1007, 1. A POSITA would have been motivated to use the WN0400 which is formed from monofilament threads to achieve these advantages. UATP-1003, ¶138.

Fifth, a POSITA would have understood that there are a variety of available options for suitable nylon meshes that could be used as a bottom surface of a ride vehicle and would have sought out a commercially available nylon mesh that had large apertures between threads. A POSITA would have found, for example, a variety of nylon meshes available from commercial suppliers (e.g., Industrial Netting) and would have been prompted to utilize a nylon mesh having characteristics described by WN0400 – 400 Micron Nylon Mesh 45% Open Area mesh as a suitable option. UATP-1006, 1-3; see *Intel Corporation v. PACT XPP Schweiz AG*, 61 F.4th 1373, 1381 (Fed. Cir. March 13, 2023) (reversing Board and finding that Pe-

titioner “just had to show that [secondary reference’s feature] was a ‘suitable option’ to replace [primary reference’s feature],” and not that it was an “‘improvement’ in the categorical sense”); UATP-1003, ¶139.

Sixth, a POSITA would have been prompted to combine Phillips and WN0400 because doing so was the application of known techniques (WN0400’s commercially available nylon mesh) to a known device (the Phillips recreational slide system) ready for improvement to yield predictable results (benefits articulated above). *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007) (“[W]hen a patent ‘simply arranges old elements with each performing the same function it had been known to perform’ and yields no more than one would expect from such an arrangement, the combination is obvious.”); UATP-1003, ¶140. A POSITA would have had a reasonable expectation of success in making the proposed modifications because WN0400’s teachings would have been implemented by using the WN0400 nylon mesh (or a similar mesh) as the ride vehicle bottom – a material already disclosed by Phillips as appropriate for such a system, without significantly altering or hindering the structure and function of Phillips’ ride vehicle and slide system. UATP-1003, ¶¶134-140.

3. Element-by-Element Analysis

Claim 1

[1pre]-[1b-ii]

See [1pre]-[1b-ii] (Ground 1A). *Supra* §§VI.A.2.[1pre]-[1b-ii]; UATP-

1003, ¶¶141, 79-96.

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

Phillips-WN0400 renders [1b-iii] obvious. UATP-1003, ¶142. As described above, recreational slide systems that used woven fabric ride vehicles for sliding on the slide surface were well-known by the Critical Date. *Supra* §II; UATP-1003, ¶¶32-48.

Phillips describes that the membrane forming the bottom surface of the ride vehicle is made of a “nylon.” UATP-1004, 4:43-46; UATP-1003, ¶142. In Phillips-WN0400, the low-friction bottom is formed from a nylon mesh, in accordance with the suggestions of WN0400 (“400 Micron Nylon Mesh”). UATP-1006, 1. UATP-1003, ¶¶130-133. As described above, the nylon mesh low friction bottom of Phillips-WN0400 contacts the slide surface while the user slides down the slide. *Supra* §VI.A.2.[1b-iii]; UATP-1003, ¶¶142, 97-104.

[1c]

See [1c] (Ground 1A). *Supra* §§VI.A.2.[1c]; UATP-1003, ¶¶143, 105-116.

Claims 2-4 and 6-7

See claims [2]-[7] (Ground 1A). *Supra* §§VI.A.2.[2]-[7]; UATP-1003, ¶¶144, 117-128.

Claim 14

[14] The recreational slide system of claim 1, wherein the mesh layer of the ride vehicle comprises a weave of threads formed of monofilament synthetic fibers.

Phillips-WN0400 renders [14] obvious. UATP-1003, ¶¶145-146. WN0400 describes a “400 Micron Nylon Mesh” formed from “Monofilament Nylon 6 fiber 42 threads per inch.” UATP-1006, 2. In the combined system, the mesh has a woven configuration—WN0400 expressly describes a thread count per inch, confirming the mesh structure. UATP-1006, 2 (“42 threads per inch”); UATP-1003, ¶145 (citing UATP-1007).

To be clear, a POSITA would have understood that nylon is a man-made or “synthetic” polymer material. UATP-1003, ¶146. Accordingly in Phillips-WN0400, the bottom surface of the ride vehicle is formed from a nylon mesh manufactured from monofilament synthetic fibers. UATP-1003, ¶¶145-146.

Claim 15

[15] The recreational slide system of claim 14, wherein the monofilament synthetic fibers comprise a polyamide monofilament structure.

Phillips-WN0400 renders [15] obvious. UATP-1003, ¶¶147-148. WN0400 describes a “400 Micron Nylon Mesh” formed from “Monofilament Nylon 6 fiber 42 threads per inch.” UATP-1006, 2. A POSITA would have understood that the nylon monofilaments are formed from a “polyamide” material – nylon. UATP-1011, 5; UATP-1003, ¶¶147-148; *see also* UATP-1001, 2:40-41 (“a polyamide monofilament structure such as Nylon”), 3:17-20 (“a polyamide monofilament

structure such as Nylon, and preferably Nylon 6 (polycaprolactam)”), 10:51-56 (“the warp and weft threads 70, 72 of the mesh material 46 are formed of a polyamide monofilament structure, such as Nylon 6”). Accordingly in Phillips-WN0400, the bottom surface of the ride vehicle is formed from a nylon (polyamide) mesh manufactured from monofilament fibers. UATP-1003, ¶¶147-148.

Claim 16

[16] The recreational slide system of claim 14, wherein the weave of threads comprises 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.

Phillips-WN0400 renders [16] obvious. UATP-1003, ¶¶149-154. WN0400 describes a “400 Micron Nylon Mesh” formed from “Monofilament Nylon 6 fiber 42 threads per inch.” UATP-1006, 2. WN0400 describes that the mesh has “42 threads per inch,” defining a “400 micron hole opening with 45% open area.” UATP-1006, 2.

A POSITA would have understood from these teachings that the WN0400’s nylon 6 threads have a diameter of about 0.2mm. UATP-1003, ¶¶149-153. Because WN0400 also describes that there are 42 threads per inch, the spacing from center of a thread to the next center of the parallel adjacent thread is about 0.6mm (1 inch is 25.4 mm, and 25.4mm divided by 42 threads is 0.605mm). Additionally, WN0400 also describes that the mesh has a 0.016 inch hole size (area of interstitial opening), which requires about a 0.4mm gap between adjacent warp threads and

between adjacent weft threads (0.016 inch is about 0.406mm). *See* UATP-1006, 2 (“400 micron hole opening”), 3 (“Hole Size (in): 0.016”); UATP-1007, 1, UATP-1003, ¶149 (explaining woven materials are formed from warp and weft threads). Accordingly, a POSITA would have understood that each nylon 6 monofilament fiber has a diameter of about 0.2mm so that adjacent threads are 0.6mm from center to center and to define a 0.4mm gap between adjacent fibers (one length of the square opening). UATP-1003, ¶¶151-154.

Accordingly in Phillips-WN0400, the bottom surface of the ride vehicle is formed from a nylon (polyamide) mesh manufactured from monofilament fibers with a diameter of about 0.2mm. UATP-1003, ¶¶149-154.

Claim 17

[17] The recreational slide system of claim 14, 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%.

Phillips-WN0400 renders [17] obvious. UATP-1003, ¶¶155-157. WN0400 describes a “400 Micron Nylon Mesh 45% Open Area” formed from “Monofilament Nylon 6 fiber 42 threads per inch.” UATP-1006, 2. WN0400 describes that the mesh has an open area of 45%. UATP-1006, 1 (“45% Open Area”), 2, 3. WN0400 describes a woven mesh, which a POSITA would have understood is formed from warp and weft threads woven together that form mesh openings (e.g., interstitial openings) between them. *See* UATP-1007, 1; UATP-1003, ¶¶155-156

(citing UATP-1006 showing photo of woven construction). 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. UATP-1003, ¶156.

Accordingly in Phillips-WN0400, the bottom surface of the ride vehicle is formed from a nylon mesh manufactured from monofilament fibers and having an open area of 45% – well within the claimed range. UATP-1003, ¶¶155-157.

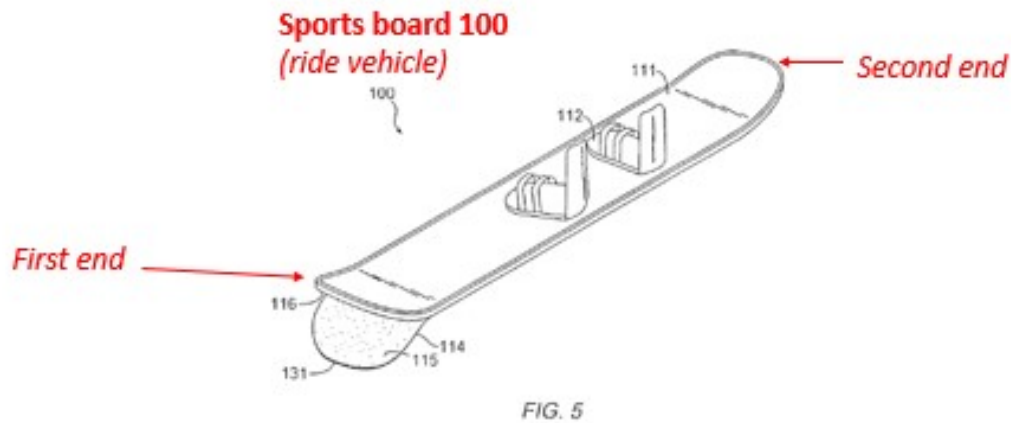
Claim 22

[22pre] A ride vehicle configured to support a rider down a non-wet lubricated recreational slide, the ride vehicle comprising:

See [1a-i]-[1b-i] (Ground 1A). *Supra* §§VI.A.2.[1a-i]-[1b-i]; UATP-1003, ¶¶158, 82-92.

[22a-i] an elongate body that extends between a first end and an opposite second end,

Phillips-WN0400 renders [22a-i] obvious. UATP-1003, ¶¶159-161. Phillips describes a ride vehicle such as “a sports board” in “the shape of a snowboard or a flexible membrane that supports a rider on the slide. UATP-1004, 7:6-8, 7:14-18 (“[m]embrane 90 can take on a number of geometrical shapes” and may be “in the form of a rectangle... upon which a user would sit or lie upon.”).



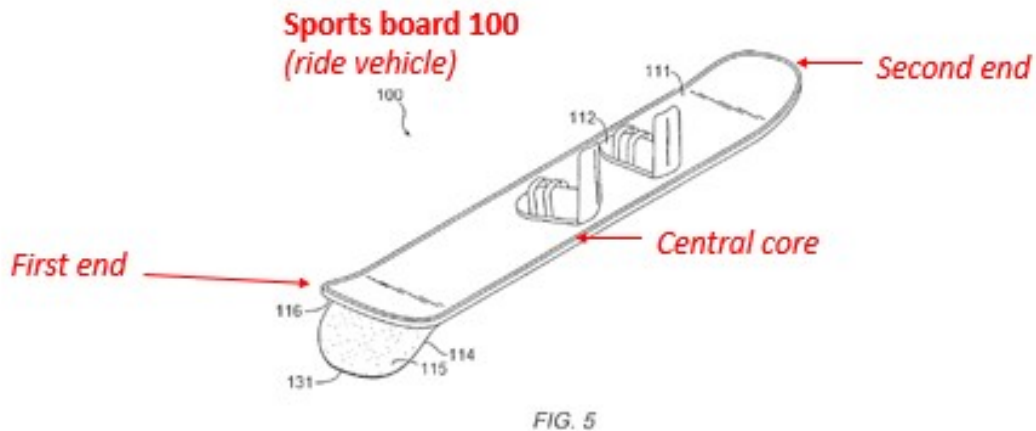
UATP-1003, ¶160 (UATP-1004, Fig. 5 (annotated))

Phillips' snowboard shaped sports board and rectangular membrane are both elongate bodies extending between first and second ends. UATP-1003, ¶161.

[22a-ii] the body including a central core positioned between

Phillips-WN0400 renders [22a-ii] obvious. UATP-1003, ¶¶162-165. Phillips describes a sports "board 100 having bindings 112 is of the shape of a snowboard having a rigid top surface 111, bindings 112 and bottom surface 116."

UATP-1004, 7:6-9, UATP-1003, ¶¶162-163 (explaining that board 100 extends between the rigid top surface and the bottom surface, providing a central core).

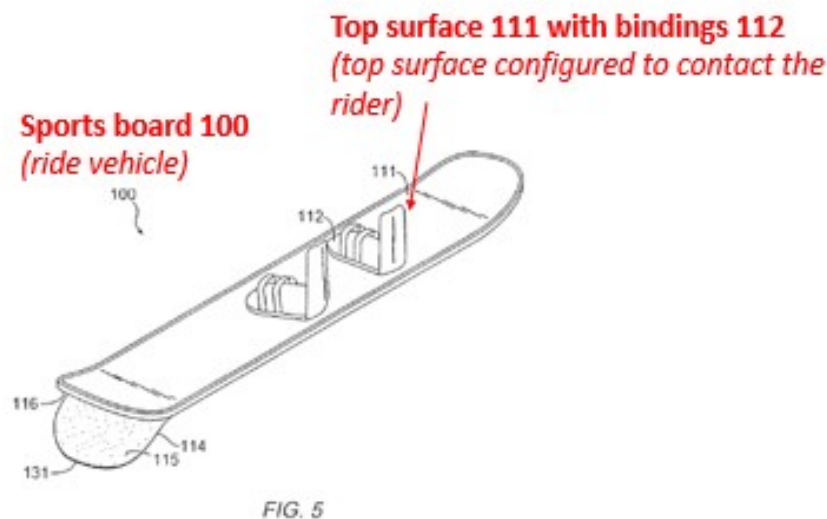


UATP-1003, ¶163 (Phillips, Fig. 5 (annotated))

Additionally, Phillips describes that “dedicated boards consisting of nothing more than a **solid core** surrounded by selective padding and a bottom surface of a durable low friction sheeting material can be employed as well.” UATP-1004, 8:40-43; UATP-1003, ¶¶164-165. A POSITA would have recognized that a sports board or other ride vehicle having a central core would provide a measure of padding between the rider and the slide surface that would be beneficial in absorbing bumps during sliding and preventing the user from becoming injured while riding the slide. UATP-1003, ¶165. In particular, the sports boards described by Phillips rely on a central core to allow the user to practice snowboarding techniques and tricks, and a POSITA would have been motivated to implement the ride vehicle with a central core based on Phillips’ teachings. UATP-1004, 8:34-48; UATP-1003, ¶165.

[22a-iii] a top surface of the ride vehicle

Phillips-WN0400 renders [22a-iii] obvious. UATP-1003, ¶¶166-167. As described above (§VI.A.2.[1b-ii]), Phillips describes that a rider is supported on a top surface of the ride vehicle. UATP-1004, 3:12-13; 7:7-9; 8:40-43; UATP-1003, ¶¶93-96. Phillips describes with regard to Fig. 5, that a sports board “having bindings 112 is of the shape of a snowboard having a rigid top surface 111, bindings 112 and bottom surface 116.” UATP-1004, 7:7-9; *see also id.*, 8:40-43 (describing board with a solid core covered by padding and “a bottom surface of a durable low friction sheeting material.”).



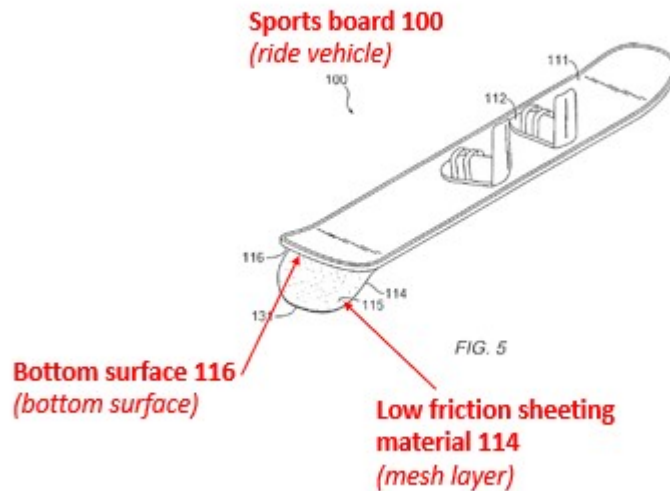
UATP-1003, ¶166 (UATP-1004, Fig. 5 (annotated))

A POSITA would have understood that the central core is adjacent to the top surface (e.g., is positioned **between** the top surface and the bottom surface which

will be discussed below). UATP-1003, ¶¶166-167.

[22a-iv] and a woven mesh layer that forms a bottom surface of the ride vehicle that is configured to contact the non-wet lubricated recreational slide;

Phillips-WN0400 renders [22a-iv] obvious. UATP-1003, ¶¶168-169. As described above (§VI.B.3.[1b-iii]), in Phillips-WN0400, the bottom surface of the sports board or membrane is formed from the nylon mesh described by WN0400. UATP-1003, ¶¶142, 130-133.



UATP-1003, ¶168 (UATP-1004, Fig. 5 (annotated))

Further, the nylon mesh low friction bottom of a membrane or sports board of Phillips-WN0400 contacts the slide surface while the user slides down the slide. *Supra* §VI.A.2[1b-iii]; UATP-1003, ¶¶97-104.

[22b] 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%.

Phillips-WN0400 renders [22b] obvious. UATP-1003, ¶¶170-171. As described above, in Phillips-WN0400, the bottom surface of the sports board or membrane is formed from the nylon mesh described by WN0400. *Supra* §VI.B.3.[1b-iii]; UATP-1003, ¶¶142, 97-104.

Additionally, as described above (*supra* §VI.B.3.[17]), WN0400 describes a “400 Micron Nylon Mesh 45% Open Area” formed from “Monofilament Nylon 6 fiber 42 threads per inch.” UATP-1006, 1-2. 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. UATP-1003, ¶¶155-157. Accordingly in Phillips-WN0400, the bottom surface of the ride vehicle is formed from a nylon mesh manufactured from monofilament fibers and having an open area of 45% — well within the claimed “range of between about 35% to about 50%.” UATP-1003, ¶¶170-171.

Claim 23

[23] The ride vehicle of claim 22, wherein the woven mesh layer comprises a weave of threads formed of monofilament synthetic fibers.

See Claim [14] (Ground 1B). *Supra* §§VI.B.3.[14]; UATP-1003, ¶¶172, 145-146.

Claim 24

[24] The ride vehicle of claim 22, wherein the monofilament synthetic fibers comprise a polyamide monofilament structure.

See Claim [15] (Ground 1B). *Supra* §VI.B.3.[15]; UATP-1003, ¶¶173, 147-148.

Claim 25

[25pre] A ride vehicle configured to support a rider down a non-wet lubricated recreational slide, the ride vehicle comprising:

See [22pre] (Ground 1B). *Supra* §VI.B.3.[22pre]; UATP-1003, ¶¶174, 158.

[25a-i] an elongate body that extends between a first end and an opposite second end,

See [22a-i] (Ground 1B). *Supra* §VI.B.3.[22a-i]; UATP-1003, ¶¶175, 159-161.

[25a-ii] the body including a central core positioned between

See [22a-ii] (Ground 1B). *Supra* §VI.B.3.[22a-ii]; UATP-1003, ¶¶176, 162-165.

[25a-iii] a top surface of the ride vehicle

See [22a-iii] (Ground 1B). *Supra* §VI.B.3.[22a-iii]; UATP-1003, ¶¶177, 166-167.

[25a-iv] and a woven mesh layer that forms a bottom surface of the ride vehicle that is configured to contact the non-wet lubricated recreational slide;

See [22a-iv] (Ground 1B). *Supra* §VI.B.3.[22a-iv]; UATP-1003, ¶¶178, 168-169.

[25b] wherein 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.

Phillips-WN0400 renders [25b] obvious. UATP-1003, ¶¶179-181. As described above, in Phillips-WN0400, the bottom surface of the sports board or membrane is formed from the nylon mesh described by WN0400. *Supra* §VI.B.3.[1b-iii]; UATP-1003, ¶¶142, 97-104.

Additionally, as described above (*supra* §VI.B.3.[16]), WN0400 describes a “400 Micron Nylon Mesh” formed from “Monofilament Nylon 6 fiber 42 threads per inch” defining a “400 micron hole opening with 45% open area.” UATP-1006, 1-2; UATP-1003, ¶¶149-154. A POSITA would have understood from these teachings that the WN0400’s nylon 6 threads have a diameter of about 0.2mm. UATP-1003, ¶180.

Accordingly in Phillips-WN0400, the bottom surface of the ride vehicle is formed from a nylon mesh manufactured from monofilament fibers with a diameter of about 0.2mm. UATP-1003, ¶¶179-181, 130-133.

Claim 26

[26] The 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.

Phillips-WN0400 renders claim 26 obvious. UATP-1003, ¶¶182-187. Phil-

lips describes that ride vehicles can be “a solid core surrounded by selective padding and a bottom surface of a durable low friction sheeting material can be employed as well.” UATP-1004, 8:40-43. Phillips’ “selective padding” surrounds the core and functions as a fabric liner in addition to the durable low friction sheeting material forming the bottom surface of the vehicle. *Id.*; UATP-1003, ¶¶182-184.

To the extent that the claim requires an additional fabric layer, it would have been obvious to a POSITA to implement Phillips’ ride vehicle with a top surface formed from a fabric layer to provide a continuous cover for the user to contact. UATP-1004, 7:18-27; FIG. 7. UATP-1003, ¶¶185-186.

Claim 27

[27pre] A recreational slide system, comprising:

See [1pre] (Ground 1A). *Supra* §VI.A.2.[1pre]; UATP-1003, ¶¶188, 79-81.

[27a] the ride vehicle of claim 22; and

See [22pre]-[22b] (Ground 1B). *Supra* §VI.B.3[22pre]-[22b]; UATP-1003, ¶¶189, 158-171.

[27b] a slide 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;

See [1a-i]-[1a-ii] (Ground 1A). *Supra* §§VI.A.2.[1a-i]-[1a-ii]; UATP-1003, ¶¶190, 82-87.

[27c] 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.

See [1c] (Ground 1B). *Supra* §VI.B.3.[1c]; UATP-1003, ¶¶191, 143, 105-116.

Claim 28

[28] The recreational slide system of claim 27, wherein the coefficient of friction is kinetic coefficient of friction.

See Claim [2] (Ground 1A). *Supra* §VI.A.2.[2]; UATP-1003, ¶¶192, 117-118.

C. GROUND 2A – PHILLIPS-FALLGATTER RENDERS CLAIMS 1-7 OBVIOUS

1. Fallgatter Overview

Fallgatter describes “[a] portable dry recreational slide” with “a low-friction sliding surface upon which a rider may slide without application of water, oil, soap or any other temporary lubricant.” UATP-1005, Abstract; *see also id.*, at [0005]; UATP-1003, ¶¶193-195.

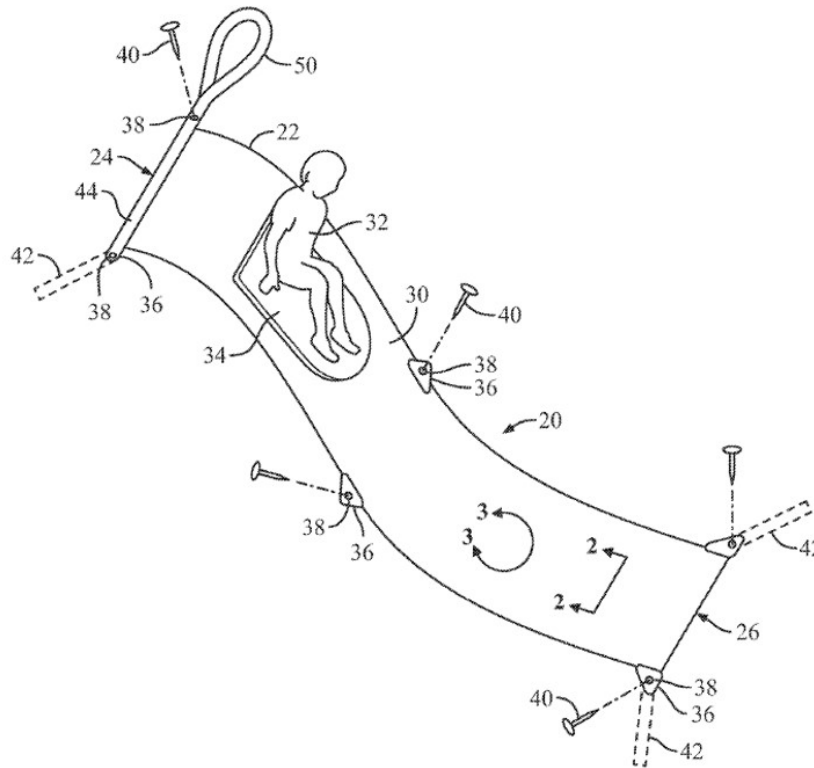


FIG. 1

UATP-1005, Fig. 1

Fallgatter describes that “[t]he slide body is made of a low-friction textile, most preferably a woven textile substrate such as a woven nylon, polyester or polyethylene with a low friction coating such as a silicone coating.” UATP-1005, [0006]; *see also id.*, [0008], [0009]. “[T]he dry slide includes one or more vehicles which participants can use to distribute weight and/or which include low-friction surfaces so as to enhance the sliding experience.” *Id.*, [0006]; *see also* [0012] (“a sliding surface is defined atop the friction-reducing coating, and the sliding surface has a dry coefficient of friction less than about 0.25...[or] about 0.21 or less”).

Fallgatter describes what is meant by a “low-friction” sliding surface, stating

that “[t]he coating defines the sliding surface upon which riders may slide, and preferably has a coefficient of friction of about 0.25 or less” or “0.21 or less.” *Id.*, [0006], [0012]. Fallgatter further describes that “[t]he friction-reducing coating has a coefficient of friction less than a coefficient of friction of the textile substrate.” *Id.*, [0008].

2. Phillips-Fallgatter Combination

Multiple reasons would have prompted a POSITA to implement Phillips’ “low friction” slide system with a kinetic coefficient of friction value and woven fabric vehicle bottom (as suggested by Fallgatter), to achieve known benefits, as articulated below. UATP-1003, ¶¶196-211. Phillips describes a dry recreational slide with a “low friction” and high durability coating for use with a fabric bottom ride vehicle. UATP-1004, 1:13-25. In particular, Phillips describes a “low friction” slide top layer formed of “Teflon” (i.e., PTFE), and fabric vehicle bottom made of a “nylon,” “sailcloth,” “dacron,” for example—materials known to a POSITA to provide low kinetic friction. UATP-1004, 4:43-46; UATP-1003, ¶196. While Phillips is clear that the surface is “low friction” and provides specific materials that provide known coefficients of kinetic friction (e.g., Teflon and nylon, which exhibit coefficient of friction of about 0.05 (*supra*, §VI.A.2.[1c])), Phillips does not expressly articulate numerical values of the coefficient of friction. Fall-

gatter provides a straightforward suggestion of numerical frictional coefficient between the slide and vehicle in a slide system. UATP-1003, ¶¶196-198.

In the resulting system, the slide surface includes a “low friction” coating (e.g., “Teflon”/PTFE) and a fabric bottom vehicle, based on Phillips’ teachings, to achieve a numerical coefficient of friction suggested by Fallgatter. In Phillips-Fallgatter, the slide would have been implemented using materials selected to achieve a friction coefficient between the coated slide and the bottom of the ride vehicle of less than 0.21, as Fallgatter teaches is an appropriate frictional coefficient to strive for in the relationship between a recreational slide and slide vehicle. UATP-1004, 4:43-46; UATP-1005, [0012]; UATP-1003, ¶¶197-198. It would have been obvious to a POSITA to select materials from the list provided by Phillips that would achieve a coefficient of friction between the slide and the ride vehicle within the range that Fallgatter provides, and further, making such a material selection would have been well within the POSITA’s level of skill. UATP-1003, ¶198. Indeed, a POSITA implementing a slide system in accordance with Phillips’ teachings would have been prompted to look to similar references, like Fallgatter, that describe numerical target friction coefficients for a recreational slide. *Id.* UATP-1005, [0012] (“about 0.21 or less.”), [0006]; UATP-1003, ¶¶196-198.

Multiple reasons would have prompted a POSITA to implement Phillips’ slide using materials to achieve a low numerical coefficient of friction between the

slide and the ride vehicle, in accordance with Fallgatter's express teachings.

UATP-1003, ¶¶199-211.

First, a POSITA would have been motivated to combine the teachings of Phillips and Fallgatter to provide a recreational slide with a low numerical coefficient of friction between the slide and the ride vehicle, in accordance with Phillips' and Fallgatter's express objectives, to enhance system performance by providing a fast and fun ride experience to users. UATP-1004, 3:16-23; UATP-1003, ¶¶200-201. Phillips expressly teaches the desirability of "low friction" between slide and vehicle (without any reservations against being too low), which a POSITA would have recognized as promoting fast sliding that enhances a user's excitement and enjoyment when using the slide system. UATP-1003, ¶200 (citing UATP-1018). A low kinetic coefficient of friction less than 0.21 would have predictably increased acceleration as a rider slides down the slide surface and would have been readily achieved based on Phillips and Fallgatter's express teachings of a Teflon/PTFE slide surface and fabric (e.g., nylon, Dacron, sailcloth). UATP-1004, 4:43-46; UATP-1003, ¶201. Indeed, Teflon/PTFE is widely known as a low friction material that exhibits a kinetic coefficient of friction with nylon and other materials well below 0.21. UATP-1003, ¶201 (citing UATP-1026, 5 (listing a static frictional coefficient for nylon-nylon interactions as 0.15-0.25), 7 (listing a kinetic frictional coefficient for Teflon-Teflon interactions as 0.04), UATP-1027, 4 (listing

kinetic frictional coefficient for nylon-nylon interactions as 0.07 and kinetic frictional coefficient for Teflon-Teflon interactions as low as 0.04).

Second, a POSITA would have been motivated to combine the teachings of Phillips and Fallgatter to achieve Phillips' directive to provide a durable, low-friction layer on each of the slide and ride vehicle. UATP-1003, ¶¶202-205. While Phillips does not expressly define a numeric value for the coefficient of friction to achieve its "low friction" objective, a POSITA would have understood that the sliding contact between the two low friction surfaces (e.g., Teflon and nylon, or other material) would have an associated low coefficient of friction. *Supra*, §VI.A.2.[1c] (Ground 1A). A POSITA would have looked to Fallgatter's teaching of an appropriate maximum friction coefficient for a similar recreational slide to guide implementation of Phillips' system. UATP-1003, ¶203. A POSITA would have understood 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. UATP-1003, ¶¶203-205. Accordingly, a POSITA would have been motivated to make the combination because Fallgatter provides additional details for implementation of Phillips' system. *See Intel Corporation v. PACT XPP Schweiz AG*, 61 F.4th 1373, 1381 (Fed. Cir. March 13, 2023) (reversing Board and finding that Petitioner "just had to show that [secondary reference's feature] was a 'suitable option' to replace [primary reference's feature]," and not

that it was an “‘improvement’ in the categorical sense”).

Third, a POSITA would have been motivated to predictably combine Phillips and Fallgatter to utilize a material for the ride vehicle bottom that promotes low friction with the slide surface. A POSITA would have understood that selection of materials for a low friction slide coating and low friction ride vehicle bottom determines the coefficient of friction between the coating and vehicle. UATP-1003, ¶206. A POSITA would have been motivated to combine the teachings of Phillips and Fallgatter to guide the selection of materials, consistent with Phillips’ and Fallgatter’s suggested materials. UATP-1004, 4:43-46; UATP-1005, [0012]; UATP-1003, ¶206. A POSITA would have been motivated to implement a “woven” fabric for the ride vehicle bottom based on Fallgatter’s express teaching to use a “woven textile substrate.” UATP-1005, [0006] (“Vehicles can also be made of the same or similar material”). A POSITA would have thus predictably utilized a “woven” nylon, dacron, sailcloth, etc. UATP-1004, 4:43-46; UATP-1005, [0011]; UATP-1003, ¶206. Indeed, Phillips expressly describes use of materials such as nylon, and a POSITA would have found it obvious to implement the nylon layer as a “woven textile” in accordance with Fallgatter. UATP-1003, ¶¶206, 97-104.

Fourth, a POSITA would have understood that application of Phillips’ low friction sliding surface to the slide as a coating, as both Phillips and Fallgatter

teach, would allow for simple upkeep and maintenance, because a coating applied to a slide can be easily reapplied or touched up compared to a slide that incorporates a low friction material throughout its construction. UATP-1003, ¶207.

Relatedly, a POSITA would have understood that the application of Phillips' low friction sliding surface to the slide as a coating, as Fallgatter teaches, would allow for customization of the coefficient of friction between the ride vehicle and the sliding surface in different areas of the slide, as Phillips teaches. UATP-1004, 8:19-29; UATP-1003, ¶208. For example, application of different coatings, or the absence of applied coating in various locations of the slide, can provide obstacles or foot-holds for a rider. UATP-1004, 8:19-29.

Fifth, a POSITA would have understood that application of a low friction sliding surface to the slide as a coating, as Fallgatter teaches, would be economical compared to formation of a slide by a unitary construction incorporating low friction materials. UATP-1003, ¶209. A POSITA would have appreciated that doing so could achieve cost savings and economical manufacturing. UATP-1003, ¶209. A POSITA would have understood that the application of a low friction coating which can be applied to a commercially available slide that is formed from a less costly material, so that the slide does not have to be specially manufactured or formed from a material that includes the low friction materials throughout the slide construction. UATP-1003, ¶209.

Sixth, a POSITA would have been prompted to combine Phillips and Fallgatter because doing so was the application of 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) ready for improvement to yield predictable results (benefits articulated above). *KSR*, 550 U.S. at 417; UATP-1003, ¶¶210-211. A POSITA would have had a reasonable expectation of success in making the proposed modifications because Fallgatter's teachings would have been implemented by selecting materials from the list already disclosed by Phillips, without significantly altering or hindering the structure and function of Phillips' slide. UATP-1003, ¶¶199-211.

3. Element-by-Element Analysis

Claim 1

[1pre]-[1a-i] A recreational slide system, comprising: a slide

See Elements [1pre]-[1a-i] (Ground 1A). *Supra* §§VI.A.2.[1pre]-[1a-i]; UATP-1003, ¶¶212, 79-83. As described above, recreational slide systems including a slide and a ride vehicle formed of a woven fabric were well-known by the Critical Date. *Supra* §II; UATP-1003, ¶¶32-48.

[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

Phillips-Fallgatter renders obvious [1a-ii]. As described above, Phillips discloses a slide body (e.g., top surface 20) that extends between a top of the slide and

a bottom of the slide and has a low friction surface for use when dry. *Supra* §VI.A.2.[1a-ii]; UATP-1003, ¶¶213-218; UATP-1004, 2:19-24; *see also id.*, 4:34-37, 6:54-55, FIG. 1. As also discussed above, a POSITA would have recognized Phillips' low friction slide surface as a slide body with a non-wet lubricated slide surface, because it facilitates sliding. UATP-1004, 4:21-24 ("Top surface 20 is composed of a flexible sheeting layer of a **durable, low friction material enabling the user to traverse the slide whether the top surface 20** is wet or dry."), 8:20-22; 6:6-8; UATP-1003, ¶215.

To the extent that this claim element is taken to require a separate coating of the slide surface providing the lubricated slide surface, the combination discloses this structure. Both Phillips and Fallgatter describe a low friction coating applied to the slide surface. UATP-1003, ¶216. As described above, Phillips describes that in the slide system, "sloping ramp surface ... can be coated with durable low friction sheeting material to enable wet or dry use." UATP-1004, 5:62-64; 6:6-8; 4:43-46; *supra* §VI.A.2.[1a-ii]. Additionally, Fallgatter describes a similar slide that includes a durable substrate layer and a "low-friction coating 54 preferably is applied to the substrate layer 52, and defines the sliding surface." UATP-1005, [0042], [0006]; UATP-1003, ¶¶216-217. Fallgatter describes that "[t]he slide body is made of a low-friction textile . . . with a low friction coating such as a silicone coating [which] defines the sliding surface upon which riders may slide." UATP-

1005, [0006].

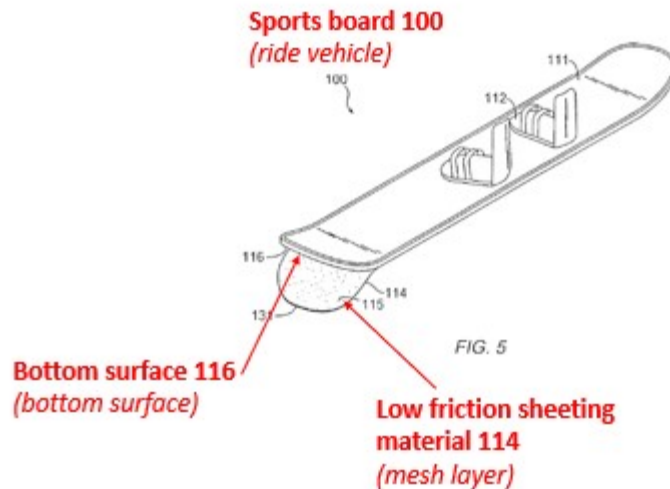
[1b-i]-[1b-ii] a ride vehicle configured to support a rider down the slide, the ride vehicle including a top surface configured to contact the rider

See Elements [1b-i]-[1b-ii] (Ground 1A). *Supra* §§VI.A.2.[1b-i]-[1b-ii];

UATP-1003, ¶¶218, 88-96.

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

Phillips-Fallgatter renders [1b-iii] obvious. As described above, a POSITA would have understood that the bottom surface of the ride vehicle is formed from a low friction sheeting mesh material configured to contact the slide surface. *Supra* §VI.A.2.[1b-iii]; UATP-1004, 4:43-46, 5:27-35, 7:7-23, 8:40-4, 8:49-61, 9:9-13; UATP-1003, ¶¶219-220, 97-104. Phillips describes that a sports board includes “a bottom surface of a durable low friction sheeting material” such as “nylon, Teflon, sailcloth, Dacron, [and] vinyl,” among others. UATP-1004, 4:43-46; 7:10-12.



UATP-1003, ¶219 (UATP-1004, Fig. 5 (annotated))

Even if Phillips did not expressly describe a “mesh layer” (which it does), this conventional feature would have been obvious based on Fallgatter’s suggestions. *Supra*, §VI.C.2 (Phillips-Fallgatter combination). Fallgatter describes use of a “woven textile” such as “nylon, polyester and polyethelyene,” thereby providing a mesh layer. UATP-1005, [0006] (“Vehicles can also be made of the same or similar material”); [0009]. A POSITA would have implemented the bottom of the vehicle with a “woven textile” mesh in accordance with Fallgatter’s suggestions in order to enhance “low friction” between the slide and vehicle and to utilize durable and widely-available materials and would have had a reasonable expectation of success in doing so. UATP-1003, ¶¶196-211, 220.

[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.

Phillips-Fallgatter renders [1c] obvious. As described above (§VI.C.2), 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. UATP-1005, [0042], [0012]; UATP-1003, ¶¶221-230.

During prosecution of the '854 patent, Fallgatter was cited in a rejecting this claim element. UATP-1002, 71-72. The applicant argued that Fallgatter "arbitrarily discloses a CoF of the low friction coating of the slide rather than *between* two surfaces," fails to specify the particular surfaces interacting including identifying a particular ride vehicle embodiment, and describes a frictional coefficient that would be higher than the disclosed 0.21 when a ride vehicle with a textile bottom is used on the slide surface. *Id.*, 117-118 (emphasis in original). However, these arguments fail to recognize Fallgatter's teaching that 0.21 is an upper limit of the coefficient of friction between the slide surface and ride vehicle. UATP-1003, ¶¶222-228.

First, as the applicant identified in the response, "a person skilled in the art would recognize CoF as a measurement of friction between two surfaces." UATP-1002, 117. A POSITA would have understood that the notion of a coefficient of

friction of a slide coating is nonsensical and would have understood that Fallgatter describes a frictional coefficient between two surfaces—indeed, the only two interacting surfaces that Fallgatter describes are the slide surface and the vehicle bottom, and a POSITA would have understood Fallgatter’s frictional coefficient to be a coefficient of friction between the slide surface and the vehicle bottom, as claimed. UATP-1003, ¶223. Further, the applicant’s reference to Fallgatter’s description of a “static” coefficient of friction (*see* UATP-1002, 117 (referencing UATP-1005, [0042])) is misplaced, given that the kinetic coefficient of friction between two surfaces is lower than the static coefficient of friction therebetween. UATP-1003, ¶223 (citing UATP-1008). Second, Fallgatter’s alleged failure to identify a particular vehicle bottom is a red herring, as Fallgatter’s frictional coefficient is described as an upper limit to the acceptable coefficient of friction between the surfaces, not as a particular value associated with a specific embodiment. *See* UATP-1005, [0012] (“the sliding surface can have a dry coefficient of friction of about 0.21 **or less**”) (emphasis added); UATP-1003, ¶224. Third, applicant’s assertion that “a CoF between the mesh layer and the low-friction slide surface... must be greater than 0.25” (UATP-1002, 118) misinterprets Fallgatter’s description that the slide’s friction reducing coating has “a dry coefficient of friction less than a coefficient of friction of the textile substrate and less than about 0.25” (UATP-1005, [0016]). UATP-1003, ¶¶225-226. In this paragraph, Fallgatter describes

that the frictional coefficient between the coated textile substrate and vehicle bottom is lower than the frictional coefficient between an uncoated textile substrate and vehicle bottom. UATP-1003, ¶226. As described above, a frictional coefficient of a surface alone (e.g., in the absence of interaction with a second surface) is nonsensical. UATP-1003, ¶227. Additionally, applicant's assumption that the frictional coefficient between the coated surface and an uncoated textile bottom must be higher than 0.25 is baseless – there is nothing in Fallgatter requiring that the coefficient of friction between the coated surface and an uncoated textile bottom must be higher than 0.25. UATP-1003, ¶227.

Although the applicant was able to convince the examiner with these baseless arguments, the resulting allowance and issuance of claim 1 was in error for all of the reasons just described. A POSITA would have understood that Fallgatter provides an upper limit of 0.21 as an acceptable coefficient of friction between the sliding surface and the bottom of the ride vehicle. UATP-1003, ¶¶228-229.

Further, a POSITA would have recognized that Fallgatter's disclosed frictional coefficient of 0.21 falls within the claimed range, according to the '854 patent. UATP-1003, ¶¶229-230. The '854 patent defines that "[a]s used herein relative to the coefficient of friction, "about" is intended to mean +/- 10%." UATP-1001, 2:34-36. Accordingly, Fallgatter's disclosed coefficient of friction of "about 0.21 or less" is within the claimed range of the '854 patent which covers the range

of 0.027 to 0.22 based on the '854 patent's definition of about. As described above, in Phillips-Fallgatter various combinations of the materials listed by Phillips, such as Teflon and nylon, are used to form the sliding surface and the ride vehicle bottom achieving a coefficient of friction therebetween that would be 0.21 or lower, and within the claimed range of about 0.03 to 0.2 +/- 10% (e.g., in the range of 0.027 to 0.22). UATP-1003, ¶¶221-230.

Claim 2

[2] The recreational slide system of claim 1, wherein the coefficient of friction is kinetic coefficient of friction.

Phillips-Fallgatter renders claim 2 obvious. UATP-1003, ¶¶231-234. As described above, Phillips-Fallgatter implements Phillips' slide with a low friction sliding surface for a ride vehicle with Fallgatter's teaching that an appropriate coefficient of friction of the "sliding surface upon which riders may slide" is less than 0.21. *Supra* §VI.C.2; UATP-1005, [0006], [0012]; UATP-1004, 2:44-52; 1:13-17, 3:16-23, 4:43-46. Static friction is the friction between two systems that are "in contact and stationary relative to one another," and once an object is in motion (kinetic friction), it is easier to keep it in motion, and "the coefficients of kinetic friction are less than their static counterparts." UATP-1008, 1, 4; UATP-1003, ¶¶231-232, 39-42. A POSITA would have understood that Fallgatter's disclosed upper limit for the coefficient of friction is a kinetic coefficient of friction – that is, it is a coefficient of friction associated with the ride vehicle sliding on the slide surface.

UATP-1005, [0006] (“The coating defines the sliding surface upon which riders may slide, and preferably has a coefficient of friction of about 0.25 or less”), [0012] (“the sliding surface can have a dry coefficient of friction of about 0.21 or less”); UATP-1003, ¶232.

Even if Fallgatter’s coefficient of friction were to be understood as a disclosure of a static coefficient of friction (that is, a coefficient of friction between the slide surface and the ride vehicle when the ride vehicle is stationary on the surface), a POSITA would have understood that the *kinetic* coefficient of friction between the slide surface and the ride vehicle would be even lower. UATP-1008, 1-2 (explaining the difference between static and kinetic friction, including “Once in motion, it is easier to keep [the crate] in motion than it was to get it started, indicating that the kinetic friction force is less than the static friction force”); UATP-1003, ¶¶233-234. While the context in which Fallgatter discusses the coefficient of friction of the sliding surface makes clear that the coefficient of friction is a kinetic coefficient (in contrast to where Fallgatter explicitly describes a static coefficient of friction, *see* UATP-1005, [0042]), a POSITA would have understood that it would be simple to achieve a kinetic coefficient of friction within the claimed range using the various materials listed by Phillips with the teaching of Fallgatter to select materials for achieving a coefficient of friction –whether static or kinetic – lower than 0.21. UATP-1003, ¶¶231-234.

Claim 3

[3] The recreational slide system of claim 1, wherein the slide surface includes a dry lubricant material.

See Claim [3] (Ground 1A). *Supra* §VI.A.2.[3]; UATP-1003, ¶¶235, 119-120.

Claim 4

[4] The recreational slide system of claim 3, wherein the dry lubricant material comprises a dry lubricant coating over the slide surface.

As described above (*supra* §VI.C.3.[1a-ii]), Phillips-Fallgatter renders obvious a dry lubricant coating over the slide surface. UATP-1003, ¶¶213-218. Both Phillips and Fallgatter separately teach that the low friction surface of the slide can be a low friction coating. UATP-1004, 6:6-8 (“this surface can be coated with *a low friction durable coating material* and used as a ramp as previously discussed”); UATP-1005, [0006] (“a low friction coating such as a silicone coating [which] defines the sliding surface upon which riders may slide.”), [0012]; UATP-1003, ¶¶236-237. Fallgatter similarly describes a coated slide: “low-friction coating 54 preferably is applied to the substrate layer 52, and defines the sliding surface 30.” UATP-1005, [0042]. It would have been obvious to a POSITA to implement Phillips’ slide system with a dry lubricant low friction coating – as both Phillips and Fallgatter teach – to simplify maintenance of the slide, allow customization of the slide surface, and decrease costs associated with manufacture of the slide. See *supra* §VI.C.2; UATP-1003, ¶¶236-237.

Claim 5

[5] The 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.

Phillips-Fallgatter renders [5] obvious based on Fallgatter's teaching that "the coating 54 [has] a thickness of about 0.009-0.013 mm, and more preferably about 0.011 mm." UATP-1005, [0043]; UATP-1003, ¶238 (explaining that 0.009-0.013 mm equals 9-13 micron). The '854 patent states that "[t]he thickness T of the dry lubricant coating 34 may be within a range between above 1 micron to about 5 micron...[h]owever, the thickness T of the dry lubricant coating 34 may taper along each sidewall sliding surface." UATP-1001, 6:25-32. The claim does not specify which location on the slide body "includes" the claimed thickness. UATP-1003, ¶287-292. It would have been obvious to a POSITA that a coating, as Phillips and Fallgatter both teach, would have a decreasing thickness at the edges of the coating, such that a coating that is 9-13 microns at a thickest section would have a decreasing thickness towards the edges, including a thickness of 1-5 micron. UATP-1003, ¶238-239. Moreover, a POSITA would have understood that a thinner layer of low friction coating would be more economical for covering a slide, while still achieving the desired low friction surface and would have been motivated to apply as thin a coating as possible. UATP-1003, ¶238-239.

Claim 6

[6] The recreational slide system of claim 4, wherein the slide body includes a base wall and a pair of sidewalls and the dry lubricant coating covers a sliding surface of the base wall.

See Claim [6] (Ground 1A). *Supra* §VI.A.2.[6]; UATP-1003, ¶¶240, 123-124.

Claim 7

[7] The recreational slide system of claim 6, wherein the dry lubricant coating covers at least a portion of the pair of sidewalls.

See Claim [7] (Ground 1A). *Supra* §VI.A.2.[7]; UATP-1003, ¶¶241, 125-128.

D. GROUND 2B – PHILLIPS-FALLGATTER-WN0400 RENDERS CLAIMS 1-7, 14-17, and 22-28 OBVIOUS

1. Phillips-Fallgatter-WN0400 Combination

Multiple reasons would have prompted a POSITA to implement Phillips-Fallgatter's "low friction" slide system (§VI.C.2) with a nylon mesh bottom taught by WN0400, to achieve known benefits, as articulated below. UATP-1003, ¶¶242-256. As described above, Phillips teaches that both a slide surface and ride vehicle bottom would have a low friction surface (e.g., Teflon and nylon, or other materials). UATP-1004, 4:43-46, 7:9-12, 7:14-23, 8:40-42, 8:55-59, 9:1-13. Fallgatter further teaches that a vehicle can include a "woven textile substrate" as the bottom surface. UATP-1004, 4:43-46; UATP-1005, [0012]; UATP-1003, ¶243. As described above, 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. *Supra* §VI.A.2.[1b-iii]; UATP-1004, 4:43-46; UATP-1005, [0011]; UATP-1003, ¶¶244, 219-220, 97-104. It would have been obvious to choose one of these for the ride vehicle bottom, 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. UATP-1003, ¶245.

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. UATP-1003, ¶246.

In the resulting system, the fabric-bottomed ride vehicle includes a nylon mesh forming the bottom surface, based on Phillips and Fallgatter's teachings, with the characteristics taught by WN0400. UATP-1003, ¶247. In Phillips-Fallgatter-WN0400, the ride vehicle would have been implemented using the nylon mesh material described by WN0400, as Phillips and Fallgatter both suggest that a woven low-friction material like nylon is appropriate for a recreational slide vehicle. UATP-1004, 4:43-46; UATP-1005, [0006] ("The slide body is made of a low-friction textile, most preferably a woven textile substrate such as a woven nylon...[v]ehicles can also be made of the same or similar material as used to make

the slide body”), [0009], [0016], [0036]; UATP-1003, ¶247. It would have been obvious to a POSITA to select a nylon mesh to achieve a ride vehicle with a low-friction bottom surface as Phillips and Fallgatter teach, and a POSITA, implementing a slide in accordance with Phillips’ and Fallgatter’s teachings would have been prompted to look to similar references, like WN0400, that describe the particular characteristics of a durable and low-friction nylon mesh. UATP-1003, ¶¶242-247.

Multiple reasons would have prompted a POSITA to implement Phillips-Fallgatter’s slide system with a ride vehicle including a nylon mesh bottom surface, having characteristics in accordance with the teachings of WN0400. UATP-1003, ¶¶248-256.

First, a POSITA would have been motivated to implement a nylon mesh ride vehicle bottom based on the teachings of Phillips and Fallgatter to provide a vehicle with “low friction” between the slide and vehicle, which a POSITA would have recognized as promoting fast sliding that enhances a user’s enjoyment when using the slide system. UATP-1003, ¶249 (citing UATP-1018). A POSITA would have recognized that a nylon mesh provides a slippery surface, and would have looked for references, like WN0400 that describe commercially available nylon meshes. UATP-1003, ¶249. A POSITA would have 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.

Second, a POSITA would have been motivated to look to a nylon mesh for the ride vehicle bottom based on Phillips and Fallgatter's express teachings of a fabric (e.g., nylon, Dacron, sailcloth) for use in the slide and vehicle surfaces. UATP-1003, ¶250. A POSITA would have been familiar with the characteristics of nylon, including its durability and low friction coefficient over many surfaces. UATP-1003, ¶250 (citing UATP-1011); *see also* UATP-1006, 2 ("Excellent resistance to wear"). A POSITA would have found the commercially available mesh material described in WN0400 (or any number of others like it) and would have understood that it was a suitable option for providing a woven textile low-friction bottom for the ride vehicle.

Third, a POSITA would have understood that selecting a "looser" mesh fabric (e.g., a more open weave) may provide an advantage in sliding over a surface because of the spacing of the threads relative to a more tightly woven fabric. UATP-1003, ¶¶251-252 (citing UATP-1010). Indeed, mesh fabrics with larger apertures between strands have an advantageously lower coefficient of friction than more tightly woven fabrics. UATP-1010, 1, 3-4 (showing in Table 2 that nylon meshes that are larger in mesh size (e.g., fabric no. 15) have a lower coefficient of friction against fabric, leather or metal than a nylon mesh with finer mesh size (e.g., fabric no. 13)); UATP-1003, ¶251. A POSITA would have 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. UATP-1006, 3, *see also id.*, 2 (“400 micron hole opening with 45% open area”); UATP-1003, ¶252.

Fourth, a POSITA would have understood that a monofilament mesh fabric may also provide an advantage in sliding over surfaces. UATP-1003, ¶253. A POSITA would have understood that “[m]onofilament yarns are a single continuous filament which produces a relatively smooth surface” and “the straight-through pores of monofilament fabrics offer minimal flow restriction and surface loading of particles.” UATP-1007, 1. Further, a POSITA would have been motivated to use the WN0400 which is formed from monofilament threads to achieve these advantages. UATP-1003, ¶253.

Fifth, a POSITA would have understood that there are a variety of available options for suitable nylon meshes that could be used as a bottom surface of a ride vehicle and would have sought out a commercially available nylon mesh that had large apertures between threads. A POSITA would have found, for example, a variety of nylon meshes available from Industrial Netting and would have selected a nylon mesh including WN0400 – 400 Micron Nylon Mesh 45% Open Area mesh as a suitable option. *See* UATP-1006. *See Intel Corp.* 61 F.4th at 1381 (reversing Board and finding that Petitioner “just had to show that [secondary reference’s feature] was a ‘suitable option’ to replace [primary reference’s feature],” and not that

it was an “‘improvement’ in the categorical sense”); UATP-1003, ¶254.

Sixth, a POSITA would have 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 (benefits articulated above). *KSR*, 550 U.S. at 417; UATP-1003, ¶¶255-256. A POSITA would have had a reasonable expectation of success in making the proposed modifications because WN0400’s teachings would have been implemented by using the WN0400 nylon mesh (or a similar mesh) as the ride vehicle bottom – a material already disclosed by Phillips and Fallgatter as appropriate for such a system, without significantly altering or hindering the structure and function of the Phillips-Fallgatter ride vehicle and slide system. UATP-1003, ¶¶248-256.

2. Element-by-Element Analysis

Claim 1

[1pre]-[1b-ii]

See [1pre]-[1b-ii] (Ground 1A). *Supra* §§VI.A.2.[1pre]-[1b-ii]; UATP-1003, ¶¶257, 79-96.

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

Phillips-Fallgatter-WN0400 renders [1b-iii] obvious. UATP-1003, ¶¶258-259. As described above, recreational slide systems including a slide and a ride

vehicle formed of a mesh fabric were well-known by the Critical Date. *Supra* §II; UATP-1003, ¶¶32-48.

Fallgatter describes that “When a rider uses the textile vehicle 60, the low-friction bottom surface 62 of the textile vehicle 60 slides over the low-friction slide surface 30, providing enhanced sliding performance.” UATP-1005, [0046], [0048]. Fallgatter further describes that the slide body and the ride vehicle can be formed from “a woven or non-woven fabric chosen from the group consisting of nylon, polyester and polyethylene, and a friction-reducing coating deposited on the textile substrate.” UATP-105, [0016], [0036] (“Vehicles can also be made of the same or similar material as used to make the slide body”). Phillips similarly describes that the membrane forming the ride vehicle may “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.” UATP-1004, 4:43-46. A POSITA would have recognized that both Phillips and Fallgatter encourage the use of a nylon material, such as the woven nylon mesh of WN0400. UATP-1003, ¶258.

In Phillips-Fallgatter-WN0400, the low-friction bottom of the membrane, sports board, or other ride vehicle is formed from the “WN0400 – 400 Micron Nylon Mesh 45% Open Area” taught by WN0400. UATP-1006, 1-2. UATP-1003, ¶¶259, 242-247. As described above, the nylon mesh low friction bottom of a

membrane or sports board contacts the slide surface while the user slides down the slide. *Supra* §VI.A.2.[1b-iii]; UATP-1003, ¶¶97-104.

[1c]

See [1c] (Ground 2A). *Supra* §VI.C.3.[1c]; UATP-1003, ¶¶260, 221-230.

Claims 2, 4, 5

See claims [2], [4], [5] (Ground 2A). *Supra* §§VI.C.3.[2], [4], [5]; UATP-1003, ¶¶261, 231-234, 236-239.

Claims 3, 6-7

See claims [3], [6]-[7] (Ground 1A). *Supra* §§IV.A.2.[3], [6]-[7]; UATP-1003, ¶¶262, 119-120, 123-128.

Claims 14-17

See claims [14]-[17] (Ground 1B). *Supra* §§VI.B.3.[14]-[17]; UATP-1003, ¶¶263, 145-157.

Claim 22

[22pre]-[22a-ii] A ride vehicle configured to support a rider down a non-wet lubricated recreational slide, the ride vehicle comprising: an elongate body that extends between a first end and an opposite second end, the body including a central core positioned between a top surface of the ride vehicle

See Elements [22pre]-[22a-ii] (Ground 1B). *Supra* §§VI.B.3.[22pre]-[22a-ii]; UATP-1003, ¶¶257, 158-165.

[22a-iv] and a woven mesh layer that forms a bottom surface of the ride vehicle that is configured to contact the non-wet lubricated recreational slide;

Phillips-Fallgatter-WN0400 renders [22a-iv] obvious. UATP-1003, ¶¶265-

266. As described above, recreational slide systems including a slide and a ride vehicle formed of a mesh fabric were well-known by the Critical Date. *Supra* §II; UATP-1003, ¶¶32-48.

As described above (§VI.D.2[1b-iii]), in Phillips-Fallgatter-WN0400, the bottom surface of the sports board or membrane is formed from the nylon mesh described by WN0400. UATP-1003, ¶¶258-259. Further, the nylon mesh low friction bottom of a membrane or sports board of Phillips-Fallgatter-WN0400 contacts the slide surface while the user slides down the slide. *Supra* §VI.D.2[1b-iii]; UATP-1003, ¶266.

[22b] 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%.

Phillips-Fallgatter-WN0400 renders [22b] obvious. UATP-1003, ¶¶267-268. As described above, in Phillips-Fallgatter-WN0400, the bottom surface of the sports board or membrane is formed from the nylon mesh described by WN0400. *Supra* §VI.D.2.[1b-iii]; UATP-1003, ¶¶258-259.

Additionally, as described above (*supra* §VI.B.3.[17]), WN0400 describes a “400 Micron Nylon Mesh 45% Open Area” formed from “Monofilament Nylon 6 fiber 42 threads per inch.” UATP-1006, 1-2; UATP-1003, ¶¶155-157. 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. UATP-1003, ¶268. Accordingly in Phillips-Fallgatter-WN0400, the bottom surface of the ride vehicle is formed from a nylon mesh manufactured from monofilament fibers and having an open area of 45% -- well within the claimed “range of between about 35% to about 50%”. UATP-1003, ¶¶267-268.

Claims 23-24

See Claim [14]-[15] (Ground 1B). *Supra* §§VI.B.3.[14]-[15]; UATP-1003, ¶¶269, 145-148.

Claim 25

[25pre]-[25a-iii] A ride vehicle configured to support a rider down a non-wet lubricated recreational slide, the ride vehicle comprising: an elongate body that extends between a first end and an opposite second end, the body including a central core positioned between a top surface of the ride vehicle

See [22pre]-[22a-iii] (Ground 1B). *Supra* §§VI.B.3.[22pre]-[22a-iii]; UATP-1003, ¶¶264, 158-165.

[25a-iv] and a woven mesh layer that forms a bottom surface of the ride vehicle that is configured to contact the non-wet lubricated recreational slide;

See [22a-iv] (Ground 2B). *Supra* §VI.D.2.[22a-iv]; UATP-1003, ¶¶271, 265-266.

[25b] wherein 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.

Phillips-Fallgatter-WN0400 renders [25b] obvious. As described above, in Phillips-Fallgatter-WN0400, the bottom surface of the sports board or membrane is

formed from the nylon mesh described by WN0400. *Supra* §VI.D.2.[1b-iii];

UATP-1003, ¶¶272-274, 258-259.

Additionally, as described above (*supra* §VI.B.3.[16]), WN0400 describes a “400 Micron Nylon Mesh” formed from “Monofilament Nylon 6 fiber 42 threads per inch.” UATP-1006, 2; UATP-1003, ¶¶273, 149-154. WN0400 also describes that the mesh has “42 threads per inch,” defining a “400 micron hole opening with 45% open area.” UATP-1006, 2. A POSITA would have understood from these teachings that the WN0400’s nylon 6 threads have a diameter of about 0.2mm. UATP-1003, ¶¶149-154.

Accordingly in Phillips-Fallgatter-WN0400, the bottom surface of the ride vehicle is formed from a nylon (polyamide) mesh manufactured from monofilament fibers with a diameter of about 0.2mm. UATP-1003, ¶¶272-274.

Claim 26

[26] The 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.

See [26] (Ground 1B). *Supra* §VI.B.3.[26]; UATP-1003, ¶¶275, 182-187.

Claim 27

[27pre] A recreational slide system, comprising:

See [1pre] (Ground 1A). *Supra* §VI.A.2.[1pre]; UATP-1003, ¶¶276, 79-81.

[27a] the ride vehicle of claim 22; and

See [22pre]-[22b] (Ground 2B). *Supra* §§VI.D.2.[22pre]-[22b]; UATP-

1003, ¶¶277, 264-268.

[27b] a slide 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;

See [1a-i]-[1a-ii] (Ground 1A). *Supra* §§VI.A.2.[1a-i]-[1a-ii]; UATP-1003, ¶¶278, 82-87.

[27c] 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.

See [1c] (Ground 2A). *Supra* §VI.C.3.[1c]; UATP-1003, ¶¶279, 221-230.

Claim 28

[28] The recreational slide system of claim 27, wherein the coefficient of friction is kinetic coefficient of friction.

See Claim [2] (Ground 2A). *Supra* §VI.C.3.[2]; UATP-1003, ¶¶280, 231-234.

E. GROUND 3A – CLAIMS 8-13 ARE NOT ENABLED UNDER 35 U.S.C. § 112(a)

Claims 8-13 are unpatentable due to lack of enablement under 35 U.S.C. § 112(a). To enable, a patent specification “must teach those skilled in the art how to make and use the full scope of the claimed invention without ‘undue experimentation.’” *In re Vaeck*, 947 F.2d 488, 495 (Fed. Cir. 1991). “Enablement serves the dual function in the patent system of ensuring adequate disclosure of the claimed invention and of preventing claims broader than the disclosed invention.” *MagSil Corp. v. Hitachi Global Storage Techs., Inc.*, 687 F.3d 1377, 1380-81 (Fed. Cir.

2012). Here, at least in claims 8-13, the Patent Owner has overreached on the breadth of the claims far beyond what is enabled by the specification. UATP-1003, ¶¶281-288.

Claims 8-13 describe the composition and characteristics of the “dry lubricant coating” recited in claim 3, which in turn depends from claim 1. *See* 37 C.F.R. §1.75(c). Claims 8-13, accordingly, each incorporate the limitations of claim 1, including “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,” but this range of coefficients of friction is not enabled by the ’854 patent in systems that include a “dry lubricant material includ[ing] a resin, a lubricant, a thermal conductor, and a hardener” as claim 8 requires.

“[W]hen a range is claimed, there must be reasonable enablement of the scope of the range.” *AK Steel Corp. v. Sollac*, 344 F.3d 1234, 1244 (Fed. Cir. 2003). As described above, the claimed range of frictional coefficients from “about 0.03 to 0.2” covers an enormous swath of frictional interactions, with the high end of the range overlapping with prior art systems (according to the ’854 patent at UATP-1001, 1:48-51) and the lowest end of the range bordering on what is theoretically possible in a physical system without mechanical interactions (*see* UATP-1028, 1). Indeed, the low region of the claimed range, for example a coefficient of friction between about 0.03 to 0.06, is not enabled by the ’854 patent in the

context of claims 8-13.

Coefficients of friction this low are reported only for interactions involving ice and snow. UATP-1027, 7; UATP-1026, 3 (interactions between ice and brass); 5 (interactions between ice samples), 7 (interactions between snow and PTFE).

Under ideal testing conditions, interactions between Teflon and nylon have a coefficient of friction of 0.05 in dry conditions and 0.04 in lubricated conditions.

UATP-1021, 1; *see also* UATP-1026, 3 (0.05 coefficient of friction between greased cadmium samples), 4 (0.05 lowest coefficient of friction between greased diamond samples), 7 (0.04 coefficient of friction between PTFE samples).

The low coefficients of friction in the claimed range cannot even be reached under ideal conditions in interactions between pure materials, and thus a POSITA would not only have been not enabled to practice the invention within the low end of the claimed range but would understand that it was ***not possible*** to practice the invention of claims 8-13 which require the dry lubricant to include additional and high-friction materials such as epoxy. *See* UATP-1028, 1; UATP-1003, ¶¶282-288. The '854 patent provides ***no explanation*** of how to achieve the full scope of the range including the low 0.03-0.06 coefficient of friction in a system in which the slide is coated in a dry lubricant coating that “includes a resin, a lubricant, a thermal conductor, and a hardener,” as claim 8 requires. Accordingly, a POSITA would not have been enabled to practice the full scope of the claimed range in

claim 8, and as claims 9-13 depend from claim 8, a POSITA would not be enabled to practice the claimed scope of these claims either. “The scope of the claims must be less than or equal to the scope of the enablement to ensure that the public knowledge is enriched by the patent specification to a degree at least commensurate with the scope of the claims.” *Sitrick v. Dreamworks, LLC*, 516 F.3d 993, 999 (Fed. Cir. 2008) (citations omitted). Here, the scope of the claims is extended far beyond what was actually invented and claims 8-13 are not enabled by the specification and invalid as a result.

F. GROUND 3B - CLAIMS 5 AND 26 ARE INDEFINITE UNDER 35 U.S.C. § 112(b)

Above, claims 5 and 26 are challenged as obvious over combinations of prior art references, based on at least one interpretation of the claim language. However, the scope of the claim language of these claims is unclear, and accordingly the claims are further invalid because they are indefinite under 35 U.S.C. § 112(b). UATP-1003, ¶¶289-302.

1. Claim 5 is indefinite

There are multiple possible meanings of the language of claim 5. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901, 910 (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.”); UATP-1003, ¶¶290-295. For example, the claim could be understood to require at least some regions

of the coating have the claimed thickness, because the coating “*includes* a thickness” within a particular range. Alternatively, the claim could be understood to require that the coating has a thickness in the claimed range across the entirety of the coating. As an example of yet another – a third – possibility, not to foreclose others, the claim could further be understood to mean that the coating may have any thickness that is 1-5 microns or greater, given that a coating thicker than 1-5 microns would necessarily “include[] a thickness ... within the range of between about 1 micron to about 5 micron.”

The specification of the '854 patent does not redefine terms or portions of the relevant claim language to bring clarity, nor does it otherwise provide a basis for selecting among the many potential options should be adopted over the others; indeed, it merely describes that the coating includes a thickness that “can be substantially constant over the sliding surface” or “may taper” along the sidewalls or base walls. UATP-1001, 6:36-7:9.

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.” There is no antecedent basis for “the fabric layer” and, moreover, the meaning and scope of the claim is unclear. *See Nautilus* 572 U.S. at 901 (“fail to inform, with reasonable certainty, those skilled in the art

about the scope of the invention”); *see also In re Packard*, 751 F.3d 1307, 1314

(Fed. Cir. 2014); MPEP 2719.05(e); UATP-1003, ¶¶296-301.

The language of claim 26 does not make clear what is claimed, because it fails to clarify where the fabric liner is positioned within the ride vehicle. To illustrate the point, the claim leaves unclear whether the claimed fabric liner is (1) positioned between the central core and fabric layer *and* is additionally and separately positioned between the central core and woven mesh layer (i.e., sandwiched between the core and the fabric layer and between the core and the mesh layer), or (2) surrounding the core *and* positioned between the fabric layer and woven mesh layer, or (3) oriented as a belt that surrounds an outer perimeter of the core and spans between the fabric layer and woven mesh layer at the edges only. Here again, the specification of the '854 patent fails to remedy the claim's ambiguity, as it fails to redefine terms and does not otherwise provide clarity as to the intended meaning of the claim with respect to the respective positions of the elements. Indeed, the specification merely recites similar language as the claim (i.e., “the fabric liner 68 is positioned between the central core 60 and the fabric layer 62 and the mesh layer 64”). UATP-1001, 10:9-16, 3:29-32 (similar).

VII. DISCRETIONARY DENIAL – *Advanced Bionics* Test Favors Institution—§325(d)

Neither of Phillips and WN0400 were applied in a rejection during prosecu-

tion, and each is relied upon for disclosure of subject matter that is materially different than applied or set forth within references cited during prosecution. The Petition thus does not involve the same or substantially the same art or arguments previously presented, ending the *Advanced Bionics* inquiry in favor of institution. *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 8-9 (P.T.A.B. February 13, 2020) (precedential). Indeed, *Advanced Bionics* is not only inapposite, but discretionary denial under *Advanced Bionics* would be inappropriate under *SAS*, given the existence and compelling merits of Grounds 1A-1B. *SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1358–59 (2018).

The Challenged Claims were deemed allowable over just four pieces of prior art cited by the examiner in examination of the '854 patent, which was accelerated by applicant.

As to Grounds 1A-1B, none of the applied references were considered during prosecution, nor are they cumulative of the four pieces of examiner-cited art.

As to Grounds 2A-B, Fallgatter was applied during prosecution as a primary reference in the single rejection issued by the Office before the '854 patent was allowed. UATP-1002, 72. But, the error in failing to appreciate that Fallgatter teaches an appropriate upper limit in the disclosure of the coefficient of friction between the surfaces of the slide and ride vehicle (and not a particular frictional coefficient value associated with a select ride vehicle) highlights that it was not

properly considered, and that discretionary denial would be inappropriate. As detailed in §III.B above, and further explained in more detail below, Fallgatter's disclosure was not accurately considered and addressed in the prosecution record.

Fallgatter discloses "a sliding surface is defined atop the friction-reducing coating, and the sliding surface has a dry coefficient of friction less than about 0.25...[or] about 0.21 or less," which the Office appropriately cited to during prosecution as teaching the claimed range of between about 0.03 to about 0.2 in claim 1. UATP-1005, [0012]; UATP-1002, 72. The claims were allowed in response to Patent Owner's assertions that Fallgatter's disclosure was unclear as to which surfaces the coefficient of friction applied and that Fallgatter lacked disclosure of a ride vehicle having an uncoated mesh bottom. UATP-1001, 116-118. Even if this were the case, ride vehicles formed from woven textile meshes were known in the art and taught by references such as Phillips. *See supra* §§II and VI.A (Ground 1A).

Advanced Bionics Part 1—This petition presents Fallgatter in a new light in combination with references that were not previously considered (e.g., Phillips and WN0400) and highlights pertinent disclosures from both Fallgatter and these not-considered references that disclose the very features that formed the Examiner's stated reasons for allowance. *SHDS, Inc., et al. v. Truinject Corp.*, IPR2020-00935, Paper 12 at 9-12 (PTAB Nov. 17, 2020) (declining to deny institution under 325(d))

where “the noted limitation is the very one that, in the Examiner’s view, placed the claims . . . into a condition for allowance.”).

This petition presents the combinations of Phillips and WN0400 with Fallgatter to achieve a system that includes each element of the claims, including feature identified as the Examiner’s reasons for allowance. UATP-1002, 135-136. Phillips and WN0400 were not before the Office during examination, and their disclosures not cumulative with cited references, so that the art/grounds in this petition were never considered. UATP-1001, 1. Factors (a), (b), and (d) favor institution.

Advanced bionics Part 2—The Board need not reach part 2 of the advanced Bionics framework because Part 1 is not satisfied. And yet, if assessing part 2, original examination involved multiple material errors in failing to consider relevant disclosures of Fallgatter in combination with other pertinent prior art. Each of *Becton, Dickenson* factors (c), (e), and (f) favors institution.

As noted above, neither Patent Owner nor the examiner addressed Fallgatter’s broader teaching regarding appropriate coefficients of friction between slide surfaces and ride vehicles. *Advanced Bionics*, IPR2019-01469, Paper 6 at 8 n.9 (“An example of a material error may include misapprehending or overlooking specific teachings.”). The petition offers a combination of Phillips with Fallgatter, relying on these overlooked teachings of Fallgatter – Fallgatter was not considered

in combination with Phillips or with WN0400 (relied on in Ground 2B).

VIII. CONCLUSION AND FEES

The Challenged Claims are unpatentable. Please charge fees to Deposit Account 06-1050.

IX. MANDATORY NOTICES UNDER 37 C.F.R. § 42.8(a)(1)

A. Real Party-In-Interest Under 37 C.F.R. § 42.8(b)(1)

Petitioner, UATP IP, LLC, and UATP Management LLC are the real parties-in-interest.

B. Related Matters Under 37 C.F.R. § 42.8(b)(2)

Petitioner is not aware of any disclaimers, reexamination certificates or petitions for inter partes review for the '854 Patent, nor is Petitioner aware of any pending civil actions involving the '854 Patent.

C. Lead And Back-Up Counsel Under 37 C.F.R. § 42.8(b)(3)

Petitioner provides the following designation of counsel.

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D. Service Information

Please address all correspondence and service to the address listed above.

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Respectfully submitted,

Dated: October 9, 2024

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CERTIFICATION UNDER 37 CFR § 42.24

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Petition for Post Grant Review totals 18,512 words, which is less than the 18,700 allowed under 37 CFR § 42.24.

Dated: October 9, 2024

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR §§ 42.6(e)(4)(i) *et seq.* and 42.105(b), the undersigned certifies that on October 9, 2024, a complete and entire copy of this Petition for Post Grant Review, Power of Attorney, and all supporting exhibits were provided by Federal Express, to the Patent Owner by serving the correspondence address of record as follows:

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