

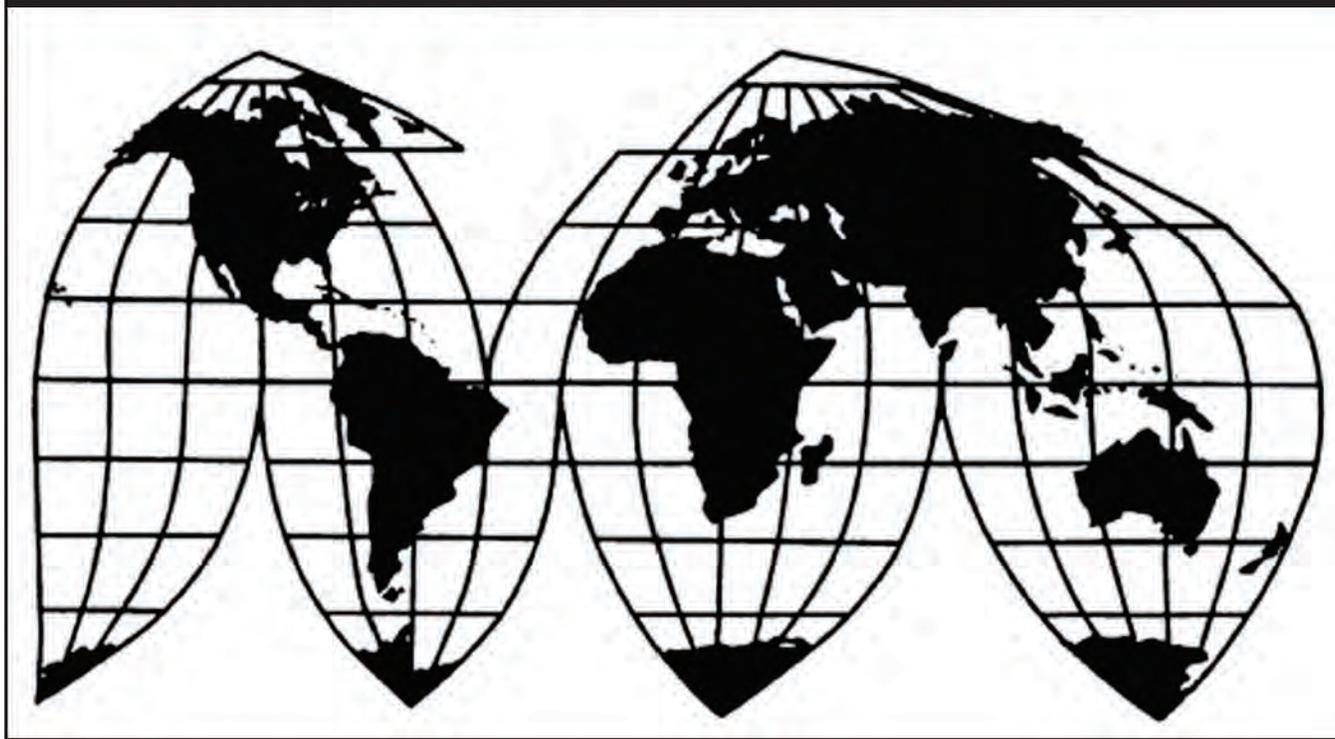
In the Matter of
**CERTAIN SOFT-EDGED TRAMPOLINES
AND COMPONENTS THEREOF**

337-TA-908

Publication 4867

February 2019

U.S. International Trade Commission



Washington, DC 20436

U.S. International Trade Commission

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U.S. International Trade Commission

Washington, DC 20436
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In the Matter of

CERTAIN SOFT-EDGED TRAMPOLINES AND COMPONENTS THEREOF

337-TA-908



UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of

**CERTAIN SOFT-EDGED
TRAMPOLINES AND COMPONENTS
THEREOF**

Investigation No. 337-TA-908

**NOTICE OF FINAL DETERMINATION OF NO VIOLATION;
TERMINATION OF THE INVESTIGATION**

AGENCY: U.S. International Trade Commission.

ACTION: Notice.

SUMMARY: Notice is hereby given that the U.S. International Trade Commission has determined that no violation of section 337 has been proven in the above-captioned investigation. The Commission's determination is final, and this investigation is terminated.

FOR FURTHER INFORMATION CONTACT: Lucy Grace D. Noyola, Office of the General Counsel, U.S. International Trade Commission, 500 E Street, S.W., Washington, D.C. 20436, telephone 202-205-3438. Copies of non-confidential documents filed in connection with this investigation are or will be available for inspection during official business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary, U.S. International Trade Commission, 500 E Street, S.W., Washington, D.C. 20436, telephone 202-205-2000. General information concerning the Commission may also be obtained by accessing its Internet server (<http://www.usitc.gov>). The public record for this investigation may be viewed on the Commission's electronic docket (EDIS) at <http://edis.usitc.gov>. Hearing-impaired persons are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on 202-205-1810.

SUPPLEMENTARY INFORMATION: The Commission instituted this investigation on January 30, 2014, based on a complaint filed by Springfree Trampoline, Inc. of Markham, Canada, Springfree Trampoline USA Inc. of Markham, Canada, and Spring Free Limited Partnership of Markham, Canada (collectively, "Springfree"). 79 Fed. Reg. 4956 (Jan. 30, 2014). The complaint alleges violations of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, in the importation, sale for importation, or sale within the United States after importation of certain soft-edged trampolines and components thereof by reason of infringement of claims 1 and 13 of U.S. Patent No. 6,319,174 ("the '174 patent"). *Id.* The notice of investigation names Vuly Trampolines Pty. Ltd. of Brisbane, Australia ("Vuly") as the sole respondent. *Id.* at 4957. The Office of Unfair Import Investigations did not participate in the investigation. *Id.*

On December 5, 2014, the administrative law judge (“ALJ”) issued a final ID finding no violation of section 337. On December 18, 2014, the ALJ issued a recommended determination (“RD”) on remedy and bonding. On December 22, 2014, Springfree and Vuly filed petitions for review challenging various findings in the final ID. On January 2, 2015, the parties filed responses. The Commission did not receive any post-RD public interest comments from the public or the parties.

On February 5, 2015, the Commission determined to review the final ID in part and requested additional briefing from the parties on certain issues. The Commission also solicited briefing from the parties and the public on the issues of remedy, bonding, and the public interest. On February 19, 2015, the parties filed briefs addressing the Commission’s questions and the issues of remedy, bonding, and the public interest. On March 2, 2015, the parties filed reply briefs.

Having examined the record of this investigation, including the ALJ’s final ID and submissions from the parties, the Commission has determined to affirm the ALJ’s determination of no violation. As explained more fully in the forthcoming Commission opinion, the Commission has determined to construe “flexible mat” in the first instance, modify the ALJ’s construction of “first retaining means,” and affirm, but on modified grounds, the ALJ’s construction of “flexible elongated rod.” The Commission has determined to affirm, but on modified grounds, the ALJ’s findings that Vuly’s products infringe claim 13, that Springfree’s products practice claim 13, that claim 1 is not invalid as anticipated by the prior art, that claim 13 is invalid as anticipated by the prior art, and that claims 1 and 13 are not invalid due to lack of enablement. The Commission has determined to reverse the ALJ’s findings that Vuly’s products infringe claim 1, that Springfree’s products do not practice claim 1, and that Springfree did not satisfy the technical prong of the domestic industry requirement as to claims 1 and 13. The Commission has determined to affirm the ALJ’s finding that Springfree did not satisfy the economic prong of the domestic industry requirement. The Commission has determined not to reach the issue of whether claim 13 is obvious.

The authority for the Commission’s determination is contained in section 337 of the Tariff Act of 1930, as amended (19 U.S.C. § 1337), and in Part 210 of the Commission’s Rules of Practice and Procedure (19 C.F.R. Part 210).

By order of the Commission.



Lisa R. Barton
Secretary to the Commission

Issued: April 6, 2015

**CERTAIN SOFT-EDGED TRAMPOLINES AND COMPONENTS
THEREOF**

337-TA-908

CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the attached **COMMISSION NOTICE** has been served by hand upon the following parties as indicated, on **April 6, 2015**.



Lisa R. Barton, Secretary
U.S. International Trade Commission
500 E Street, SW
Washington, DC 20436

**On Behalf of Complainants Springfree Trampoline,
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PUBLIC VERSION

**UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.**

In the Matter of

**CERTAIN SOFT-EDGED
TRAMPOLINES AND COMPONENTS
THEREOF**

Investigation No. 337-TA-908

COMMISSION OPINION

This investigation concerns U.S. Patent No. 6,319,174 (“the ’174 patent”), which relates to a soft-edged trampoline. The Commission determined to review in part the final initial determination (“ID”) of the presiding administrative law judge (“ALJ”) finding no violation of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337. For the reasons set forth below, we affirm the ALJ’s finding of no violation.

I. BACKGROUND

A. Procedural History

The Commission instituted this investigation on January 30, 2014, based on a complaint filed by Springfree Trampoline, Inc. of Markham, Canada, Springfree Trampoline USA Inc. of Markham, Canada, and Spring Free Limited Partnership of Markham, Canada (collectively, “Springfree”). 79 Fed. Reg. 4956 (Jan. 30, 2014). The complaint alleges violations of section 337 in the importation, sale for importation, or sale within the United States after importation of certain soft-edged trampolines and components thereof by reason of infringement of claims 1 and 13 of the ’174 patent. *Id.* The notice of investigation names Vuly Trampolines Pty. Ltd. of Brisbane, Australia (“Vuly”) as the sole respondent. *Id.* at 4957. The Office of Unfair Import Investigations did not participate in the investigation. *Id.*

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On December 5, 2014, the ALJ issued a final ID finding no violation of section 337. Specifically, the ALJ found claim 1 of the '174 patent to be infringed, not practiced by Springfree's products, and not invalid. The ALJ found claim 13 to be infringed, practiced by Springfree's products, and invalid as anticipated by the prior art. Because he found claim 13 invalid, the ALJ found that Springfree did not meet the technical prong of the domestic industry requirement as to claim 13. The ALJ further found that Springfree failed to satisfy the economic prong of the domestic industry requirement.

On December 18, 2014, the ALJ separately issued a Recommended Determination on Remedy and Bond ("RD") in the event that the Commission found a section 337 violation. Specifically, the ALJ recommended that a limited exclusion order issue with an exception for replacement, repair, and warranty parts, and that the bond rate be set at zero percent.

On December 22, 2014, the parties filed petitions for review of the final ID. Springfree sought review of the ALJ's construction of a single term, the ALJ's findings concerning the technical and economic prongs of the domestic industry requirement, and the ALJ's finding of invalidity of claim 13. Vuly filed a contingent petition for review of nearly all of the ALJ's findings that were adverse to it. On January 2, 2015, the parties filed responses.

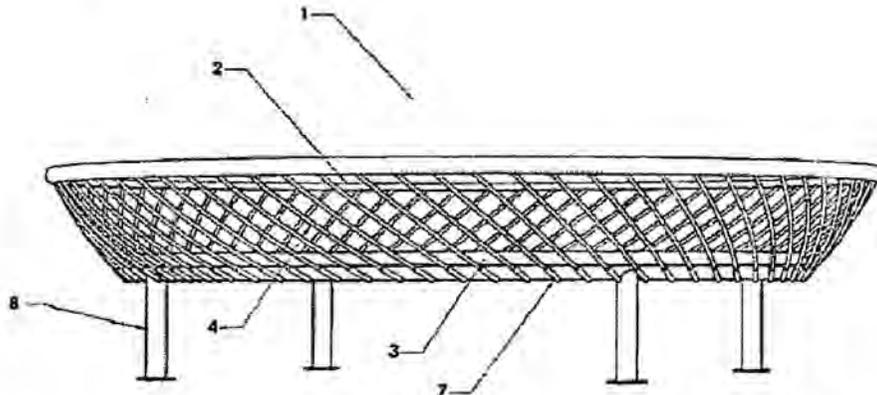
On February 5, 2015, the Commission determined to review the final ID in part and requested additional briefing from the parties on certain issues. The Commission also solicited briefing from the parties and the public on the issues of remedy, bonding, and the public interest. On February 19, 2015, the parties filed briefs in response to the Commission's request. On March 2, 2015, the parties filed reply briefs.

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B. Patent and Products at Issue

The '174 patent explains that conventional trampolines use a mat that is surrounded by a metal frame such that springs attached to the frame are in the same plane as the mat. *JX-1* at 1:20-28. This conventional design carries the risk of users landing on the springs, or the gaps between the springs, instead of the mat. *Id.* The present invention provides an improved trampoline that ameliorates such risks of injury. *Id.* at 1:43-45.

The patented invention incorporates a flexible mat supported above a support frame by flexible rods. *Id.* at Abstract. Each rod is secured at one end to the mat and at the other end to the support frame. *Id.* Figure 1 of the '174 patent (shown below) depicts a preferred embodiment in the form of a “trampoline (1) comprised of a flexible mat (2), a support element in the form of an annular ring frame (3) and a plurality of flexible elongated rods (4) (having a first and second ends).” *Id.* at 2:42-46.



Springfree asserts claims 1 and 13 of the '174 patent. *ID* at 13. Those claims read as follows:

1. A trampoline comprising
a flexible mat with a plurality of first retaining means located around the
mat perimeter,
a plurality of second retaining means located about the periphery of a
support element and
a plurality of flexible elongated rods,

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such that in use on a flat horizontal surface, said mat forms a horizontal plane having an upper contact surface and a lower non-contact surface orientated vertically above said support element, wherein each said flexible rod is retained at a first and second end by said first and second retaining means respectively.

13. A trampoline comprising:
a flexible mat
a support element
a plurality of spaced flexible elongated rods secured between said mat and said support element so as to support said mat above said support element.

JX-1 at 4:38-49, 6:1-9.

The application for the '174 patent was filed on October 26, 2000, and the claims were allowed as filed without amendment or remarks. JX-1; *see* JX-2 at 99.

Springfree Trampoline, Inc. is the exclusive licensee of the '174 patent. ID at 1. Spring Free Trampolines Limited Partnership sub-licensed the right to practice the patent from Springfree Trampoline, Inc. *Id.* Springfree alleges that a number of its trampolines practice claims 1 and 13 of the '174 patent. *Id.* at 2.

The accused products are trampolines marketed and sold under the name "Vuly Thunder." *Id.*

II. ANALYSIS

A. Standards on Review

The Commission's review is conducted *de novo*. *Certain Polyethylene Terephthalate Yarn and Products Containing Same*, Inv. No. 337-TA-457, USITC Pub. No. 3550, Comm'n Op. at 9 (June 18, 2002). Upon review, "the Commission has 'all the powers which it would have in making the initial determination,' except where the issues are limited on notice or by rule." *Certain Flash Memory Circuits and Products Containing Same*, Inv. No. 337-TA-382, USITC Pub. No. 3046, Comm'n Op. at 14 (June 26, 1997) (quoting *Certain Acid-Washed Denim*

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Garments and Accessories, Inv. No. 337-TA-324, USITC Pub. No. 2576, Comm'n Op. at 5 (Aug. 28, 1992)). Upon review, “the Commission may affirm, reverse, modify, set aside or remand for further proceedings, in whole or in part, the initial determination of the administrative law judge.” 19 C.F.R. § 210.45(c). “The Commission also may make any findings or conclusions that in its judgment are proper based on the record in the proceeding.” *Id.*

B. Claim Construction

The Commission determined to review the ALJ's construction of “flexible mat,” “first retaining means,” and “flexible elongated rod.”

1. “flexible mat” (claims 1 and 13)

The ALJ did not provide a construction of the term “flexible mat,” which appears in both of the asserted claims. *Id.* at 15-16. The ALJ, however, rejected Vuly's proposed construction, which requires a mat larger in area than the support element. *Id.* The ALJ did not address Springfree's proposed construction, but apparently adopted it when he relied on Springfree's expert testimony in finding infringement. *See id.* at 48.

Claims are interpreted in view of the claim language, the specification, and the prosecution history. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313-17 (Fed. Cir. 2005) (en banc). In construing the claims, a tribunal may also seek guidance from extrinsic evidence such as expert testimony, dictionaries, and treatises. *Id.* at 1317-18.

We find that the plain and ordinary meaning of “flexible mat” in the context of the entire patent is a mat that is capable of being flexed. To begin with, the claims of the '174 patent are “valuable sources of enlightenment as to the meaning of [the] claim term.” *See id.* at 1314. “[T]he presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim.” *Id.* at 1315. This doctrine of claim differentiation is at its “strongest” where the limitation sought to be read into

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an independent claim already appears in a dependent claim. *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 910 (Fed. Cir. 2004). As the ALJ noted, the language of claims 1 and 13 does not require that the mat have a larger area than the support element. *See* ID at 15. By contrast, the language of claim 5, which depends on claim 1 and recites a “mat [that] is larger in plan view than said support element,” strongly suggests, and is consistent with, a construction of the term that does not include a size limitation. *See id.* at 16; JX-1 at 4:59-60.

The words of a claim are generally given their ordinary and customary meaning as understood by a person of ordinary skill in the art when read in the context of the specification and prosecution history. *See Phillips*, 415 F.3d at 1313. “The written description and other parts of the specification, for example, may shed contextual light on the plain and ordinary meaning; however, they cannot be used to narrow a claim term to deviate from the plain and ordinary meaning unless the inventor acted as his own lexicographer or intentionally disclaimed or disavowed claim scope.” *Aventis Pharms. Inc. v. Amino Chems. Ltd.*, 715 F.3d 1363, 1373 (Fed. Cir. 2013). The standards for finding lexicography and disavowal are “exacting.” *GE Lighting Solutions, LLC v. AgiLight, Inc.*, 750 F.3d 1304, 1309 (Fed. Cir. 2014). Except in those two circumstances, the “patentee is free to choose a broad term and expect to obtain the full scope of its plain and ordinary meaning.” *Thorner v. Sony Computers Entm’t Am. LLC*, 669 F.3d 1362, 1367 (Fed. Cir. 2012) (“It is the claims that define the metes and bounds of the patentee’s invention.”).

There is no lexicography or disavowal in this case. The specification does not clearly define “flexible mat” or include any indication of a disavowal. The claims of the ’174 patent were allowed as filed without amendment or remarks by the patentee, so the prosecution history likewise lacks a definition or any disavowal of the scope of this term. *See* JX-2 at 99.

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The patent’s detailed disclosure of a single embodiment does not rise to the level of lexicography or disavowal. “[I]t is improper to read limitations from a preferred embodiment described in the specification—even if it is the only embodiment—into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited.” *Liebel-Flarsheim*, 358 F.3d at 913; *GE Lighting Solutions*, 750 F.3d at 1309 (“A patent that discloses only one embodiment is not necessarily limited to that embodiment.”).

Vuly argues that the specification’s statements regarding the “present invention” compel a construction requiring a mat that is larger than the support element. Vuly Resp.¹ at 1-2, 4-6; Vuly Pet.² at 17-18. As Vuly notes, the Federal Circuit has found disavowal or disclaimer based on statements by the patentee describing the “present invention” in a way that limits the claims. *See, e.g., Pacing Techs., LLC v. Garmin Int’l, Inc.*, __ F.3d __, 2015 WL 668828, at *3 (Fed. Cir. Feb. 18, 2015); *Honeywell Int’l, Inc. v. ITT Indus., Inc.*, 452 F.3d 1312, 1318 (Fed. Cir. 2006); *Edwards Lifesciences LLC v. Cook Inc.*, 582 F.3d 1322, 1327-31 (Fed. Cir. 2009). The Federal Circuit has found disclaimer when the specification described a feature as “an important feature of the present invention.” *SafeTCare Mfg., Inc. v. Tele-Made, Inc.*, 497 F.3d 1262, 1269-70 (Fed. Cir. 2007). The Federal Circuit also has found disclaimer when the “inventor makes clear that [an] attribute of the invention is important in distinguishing the invention over the prior art,” *id.*, or when the patent repeatedly disparaged an embodiment as inadequate and then detailed the

¹ Respondent Vuly’s Response to the Commission Determination to Review the Final Initial Determination in Part and Written Submission on the Issues Under Review and on Remedy, Public Interest, and Bonding.

² Respondent Vuly’s Contingent Petition to Review the Initial Determination on Violation of Section 337 and Recommended Determination on Remedy and Bond.

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“deficiencies [that] make it difficult” to use, *Chi. Bd. Options Exch., Inc. v. Int’l Sec. Exch., LLC*, 677 F.3d 1361, 1372 (Fed. Cir. 2012).

Such circumstances are not present in this case. The few references in the ’174 patent concerning the size of the mat pertain only to the preferred embodiment of the invention. *See* JX-1 at 2:3-6 (“The diameter of said mat preferably exceeds the said base”), 2:42-43 (“FIGS. 1-6 show a preferred embodiment of the present invention”), 3:45-49 (“The mat (2) is diametrically larger than . . . the said ring frame (3). This configuration (as shown in FIGS. 1-3) produces an inverted frustoconical shaped trampoline”). The specification does not describe the mat’s size as the present invention or as essential to the present invention. Nor is there any discussion distinguishing the invention from the prior art based on the mat’s size. Contrary to Vuly’s suggestions, the specification’s discussion of the present invention is silent as to the mat’s size.

Instead, the present invention is described as “a soft-edged trampoline without any exposed springs adjacent to the bouncing surface.” *Id.* at 1:6-9. The specification distinguishes the invention from conventional trampolines with “springs [] in the same plane as the bouncing surface as the mat, with the attendant risk that the user will land on the springs (and/or the gaps between springs) instead of the mat.” *Id.* at 1:20-28, 1:43-45. The specification also states that the “innovative design of the present invention” results in a bouncing surface that “extends across the entire upper surface of the trampoline [], without any exposed springs.” *Id.* at 4:18-22. We find that these statements describing the “present invention” do not require a mat larger than the support element, but rather a mat with a bouncing surface across the trampoline’s upper surface—without springs or a frame in the same plane.

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Vuly argues that the '174 patent does not describe “how one of ordinary skill in the art can make the trampoline claimed in the '174 patent without using a mat that is larger than the support element.” Vuly Resp. at 6; *see also* Vuly Pet. at 17. This argument is confusing in the claim construction context. Vuly appears to argue that the '174 patent does not enable one of ordinary skill in the art to make and use the claimed invention if the claims were construed broadly without a mat size limitation. But nowhere in its post-hearing or petition papers did Vuly argue that claims 1 and 13 are invalid due to lack of enablement of a “flexible mat” or otherwise argue that a mat of any size would have required undue experimentation. We do not address such undeveloped arguments, particularly where Vuly bears the burden of establishing lack of enablement with clear and convincing evidence. In addition, as noted by Springfree, the '174 patent describes various embodiments, including a trampoline with rods oriented “vertically upright,” resulting in a mat that is the same size as the support element. *See* JX-1 at 3:57-62; Springfree Reply³ at 4.

Springfree proposes that we construe “flexible mat” as “sheet or fabric that is tensioned to provide a bouncing surface.” Although that construction is consistent with the specification and the purpose of the invention, a bouncing function need not be attributed to the purely structural term “flexible mat.” An invention claimed in purely structural terms generally resists functional limitation. *Ecolab, Inc. v. Envirochem, Inc.*, 264 F.3d 1358, 1367 (Fed. Cir. 2001) (“Where the function is not recited in the claim itself by the patentee, we do not import such a limitation.”).

³ Springfree’s Reply Submission to Vuly’s Responses on the Issues Identified in the Notice of Commission Determination to Review the Final Initial Determination in Part.

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The American Heritage Dictionary defines “flexible” as “[c]apable of being bent or flexed; pliable” and “[c]apable of being bent repeatedly without injury or damage.” CX-177C at Q/A 61; CX-147. This dictionary definition further informs our claim construction.

As the Federal Circuit has noted, “[i]n some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words.” *Phillips*, 415 F.3d at 1314. This is one of those cases. Neither party contends that “flexible mat” is a technical term of art. Vuly admits as much. *See* Vuly Resp. at 3-4 (“[T]here is no special meaning of ‘flexible mat’ known to those in the trampoline art.”). Nor does the patent, read in its entirety, require a more elaborate construction.

Accordingly, we construe “flexible mat” according to its plain and ordinary meaning as a mat that is capable of being flexed.

2. “first retaining means” (claim 1)

The term “first retaining means” appears in claim 1 of the ’174 patent. The ALJ found that “first retaining means” is a means-plus-function limitation governed by 35 U.S.C. § 112, ¶ 6. ID at 19. The ALJ determined that the function of the “first retaining means” is “to retain a first end of a flexible elongated rod.” *Id.* at 20. The ALJ then identified three corresponding structures in the specification that perform that function: “(1) a pocket or pouch formed with an aperture on the non-contact (a.k.a., lower surface) of the flexible mat; (2) a pouch sewn into the fabric of the mat with an aperture on the non-contact (a.k.a., lower surface) of the flexible mat; or (3) an end piece [sic] and a pouch formed with an aperture on the non-contact (a.k.a., lower surface) of the flexible mat adapted to retain the end piece [sic].” *Id.* at 25. The ALJ found prosecution history disclaimer based on statements made by the inventor, Dr. Alexander, during

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the prosecution of a later-filed patent application, U.S. Patent Application No. 12/406,572 (“the ’572 application”), which resulted in U.S. Patent No. 8,105,211 (“the ’211 patent”). *Id.* Relying heavily on *Goldenberg v. Cytogen, Inc.*, 373 F.3d 1158 (Fed. Cir. 2004), the ALJ found that, during the prosecution of the ’572 application, Dr. Alexander had disclaimed the ball-and-socket design of that application from the “first retaining means” of claim 1 of the ’174 patent. *Id.* at 23-25.

As an initial matter, the parties agree that the “first retaining means” is a means-plus-function limitation that invokes 35 U.S.C. § 112, ¶ 6.⁴ *See id.* at 19. Construction of a means-plus-function limitation involves two steps. *JVW Enters., Inc. v. Interact Accessories, Inc.*, 424 F.3d 1324, 1330 (Fed. Cir. 2005). The first step is determining the claimed function; the second is identifying the corresponding structure in the written description that performs that function. *Id.* The parties disagree as to whether the ALJ correctly identified both the function and the corresponding structures of “first retaining means.”

We turn first to determining the function of “first retaining means.” We “may not construe a means-plus-function limitation by adopting a function different from that explicitly recited in the claim.” *Id.* at 1331 (internal quotation marks omitted). In addition, we should read means-plus-function claims for their meaning “independent of any working embodiment.” *Id.*

Vuly contends that the function includes retaining an end-piece of a first end of a rod. Vuly Pet. at 22. In support, Vuly relies on testimony by Springfree’s expert that including language referencing the end-pieces “would be a good addition” to the claim construction, as

⁴ Although this provision has been amended and is now codified as 35 U.S.C. § 112(f), the prior version containing ¶ 6 applies here because the ’174 patent was filed before Sept. 16, 2012. *See Leahy-Smith America Invents Act*, Pub. L. No. 112-29 § 4(e), 125 Stat. 284.

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well as Dr. Alexander's testimony that the invention would not work without end-pieces attached to the first end of the rod. *Id.* We reject Vuly's attempts to add a function that is not recited in the claims or that is supported solely by inventor testimony on a working embodiment. Claim 1 recites that "each said flexible rod is retained at a first . . . end by said first . . . retaining means." JX-1 at 4:38-49. Claim 1 does not contain any language limiting the function to retaining an end-piece of a first end of a rod. We therefore agree with the ALJ's finding that the function of "first retaining means" is to retain a first end of a flexible elongated rod.

After identifying the function of the means-plus-function limitation, we then turn to the written description to identify the structure corresponding to that function. "In order to qualify as corresponding, the structure must not only perform the claimed function, but the specification must clearly associate the structure with performance of the function." *Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 296 F.3d 1106, 1113 (Fed. Cir. 2002). "A means-plus-function claim encompasses all structure in the specification corresponding to that element and equivalent structures." *Micro Chem., Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250, 1258 (Fed. Cir. 1999). "When multiple embodiments in the specification correspond to the claimed function, proper application of § 112, ¶ 6 generally reads the claim element to embrace each of those embodiments." *Id.* A means-plus-function limitation includes all "distinct and alternative" structures described in the specification that perform the claimed function. *Ishida Co. v. Taylor*, 221 F.3d 1310, 1316 (Fed. Cir. 2000) (citing *Serrano v. Telular Corp.*, 111 F.3d 1578, 1583 (Fed. Cir. 1997) ("Disclosed structure includes that which is described in a patent specification, including any alternative structures identified.")); *Creo Prods., Inc. v. Presstek, Inc.*, 305 F.3d 1337, 1345 (Fed. Cir. 2002). Further, where a specification discloses different embodiments of a limitation for performing a claimed function, we are not required to craft a single construction to

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cover all those embodiments. *See Ishida*, 221 F.3d at 1316. “Rather, § 112, ¶ 6 requires only identification of the structure, or structures, in the specification that perform the recited function.” *Id.*

Here, the ALJ correctly identified more than one structure corresponding to the “first retaining means” because the specification of the ’174 patent discloses multiple, alternative structures that retain a first end of a rod. The ALJ found that the specification disclosed three alternative structures: “(1) a pocket or pouch formed with an aperture on the non-contact (a.k.a., lower surface) of the flexible mat; (2) a pouch sewn into the fabric of the mat with an aperture on the non-contact (a.k.a., lower surface) of the flexible mat; or (3) an end piece [sic] and a pouch formed with an aperture on the non-contact (a.k.a., lower surface) of the flexible mat adapted to retain the end piece [sic].” *Id.* at 25.

In fact, the specification discloses only the following structures as distinct and alternative structures: (1) a pouch or pocket or (2) an end-piece and a sewn pouch. The specification generally describes one structure as a pocket or pouch, without any reference to, and thus requirement of, an end-piece: “Preferably, said first retaining means comprises a plurality of pockets/pouches each formed with an aperture on said non-contact surface.” JX-1 at 2:7-9. The specification also describes an alternative structure used in the preferred embodiment that consists of a pouch sewn into the fabric of the mat and a rod end-piece that is inserted into the pouch. Specifically, the specification discloses, as part of the preferred embodiment, “a plurality of first retaining means in the form of pouches (5) sewn into the fabric of the mat with an aperture formed on the lower surface of said mat (2).” *Id.* at 2:49-53. The specification further describes the preferred embodiment as including end-pieces that retain the rods within the pouches:

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The rods (4) are each equipped at a first end with a protective end-piece (6), as shown in two alternative embodiments in FIG. 4. The end-pieces (6) are configured to be releasably inserted and retained within pouches (5). . . . *Both the end-pieces (6) shown are exemplary and alternative shapes may be employed providing they afford a secure means of retaining a rod (4) within a pouch (5) whilst under tension, without damage the mat (2) [sic] or its surrounds and prevent injury [sic] to a user falling on the trampoline edge.*” *Id.* at 2:62-3:11 (emphasis added).

The specification of the '174 patent, with its disclosures of a pouch or pocket and the combination of a sewn pouch and end-piece, is similar to the specification in *Micro Chemical*. In that case, the Federal Circuit held that the district court erred in restricting the “weighing means” to the structure of the preferred embodiment. *Micro Chemical*, 194 F.3d at 1258-59. The specification disclosed several alternative embodiments of the invention, each having a different type of weighing means. *Id.* The Federal Circuit found that the corresponding structures included both a “more general structure” of a weight scale supporting a weigh hopper or a storage means and an alternative structure of a weight scale from which the weigh hopper or storage bin is suspended. *Id.*

However, the specification of the '174 patent does not describe a sewn pouch as an alternative structure to the combination of a pouch and an end-piece. Rather the specification discloses that the end-piece is inserted into the sewn pouch and retains the rod within the pouch. The two components work together in the preferred embodiment to retain a first end of a rod. Thus, the sewn pouch is a component of the overall structure in the preferred embodiment that performs the claimed function. It is the overall structure that corresponds to the “first retaining means.” *See Odetics, Inc. v. Storage Tech. Corp.*, 185 F.3d 1259, 1268 (Fed. Cir. 1999) (“The individual components, if any, of an overall structure that corresponds to the claimed function are not claim limitations. Rather, the claim limitation is the overall structure corresponding to the claimed function.”).

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Vuly does not dispute that any of these structures perform the function of retaining a first end of a rod. Instead, citing *Astrazeneca LP v. Apotex, Inc.*, 633 F.3d 1042, 1053 n.1 (Fed. Cir. 2010), which affirmed a claim construction based in part on expert testimony that the claimed invention would be inoperable under a different construction, Vuly contends that a claim construction that is “devoid of any mention of the end-pieces” would impermissibly result in an inoperable invention. Vuly Resp. at 15-16. We understand Vuly’s position to be that the claim construction cannot include as an alternative a structure without end-pieces. However, the testimony that Vuly relies upon suggesting the necessity of the end-piece constitutes extrinsic evidence that is contrary to the claim language and the specification. Unlike the patent in *Astrazeneca*, the ’174 patent discloses more than one embodiment of the limitation and one of those embodiments does not include an end-piece. Vuly recognizes that the specification discloses more than just a pouch, but blends the different disclosures of the specification to argue that the only structure disclosed in the specification corresponding to the “first retaining means” is a pouch or pocket sewn into the fabric of the mat with an aperture formed on the lower surface of the mat adapted to retain the first end of the flexible rod and end-piece. *See id.* at 13-16. For the reasons explained above, we are not bound to formulating—and the specification does not support—a single construction to cover the different structures disclosed in the specification.

Springfree does not challenge the ALJ’s findings with respect to the function and corresponding structures of “first retaining means,” but argues that the ALJ erred in finding prosecution history disclaimer of a ball-and-socket structure. Springfree Pet.⁵ at 6-7. Springfree contends that, because the ’572 application is unrelated to the ’174 patent and filed and

⁵ Springfree Complainants’ Petition for Review.

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prosecuted years after the '174 patent issued, the '572 application is not part of the intrinsic evidence for the '174 patent. *Id.* at 8-9. Springfree argues that the ALJ misapplied *Goldenberg* and well-established Federal Circuit precedent in finding otherwise. *Id.* at 8-14. Even if the prosecution history of the '572 application could be considered in construing “first retaining means” in the '174 patent, Springfree argues that Dr. Alexander’s statements distinguishing the '174 patent from the ball-and-socket design in the '572 application did not rise to the level of clear and unmistakable disavowal. *Id.* at 14-15.

We agree with Springfree that the ALJ erred in finding prosecution history disclaimer based on statements made by the inventor in a later, unrelated patent application. A number of authorities preclude us from using statements made during the prosecution of a later, unrelated patent to interpret the claims here. *Pfizer, Inc. v. Ranbaxy Labs. Ltd.*, 457 F.3d 1284, 1290 (Fed. Cir. 2006); *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1312 (Fed. Cir. 2014) (“Of course, statements made in unrelated applications are not relevant to claim construction.”); *Tex. Digital Sys., Inc. v. Telegenix, Inc.*, 308 F.3d 1193, 1211 (Fed. Cir. 2002) (explaining that a claim of an unrelated patent “sheds no light on” the claims of the patent in suit), *overruled on other grounds by Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). The record shows, and Vuly does not dispute, that the '572 application is not related to the '174 patent. *See* RX-67.

We also agree with Springfree that the ALJ’s understanding of *Goldenberg*, the sole authority he relied upon to find disclaimer, was misplaced. At issue in *Goldenberg* was the construction of the claims of U.S. Patent No. 4,460,559 (“the '559 patent”). 373 F.3d at 1166-67. The '559 patent issued from Application No. 374,662, which was a continuation of another application, Application No. 126,261 (“the '261 application”). *Id.* at 1161. The patentee filed a second application, Application No. 126,262 (“the '262 application”). *Id.* That second

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application led to a continuation-in part application, which resulted in U.S. Patent No. 4,444,744 (“the ’744 patent”). *Id.* The ’744 patent was not related to the ’559 patent. *Id.* at 1161, 1163. During the prosecution of the ’261 application, the patentee overcame a double-patenting rejection by distinguishing that application from the ’262 application. *Id.* at 1161, 1167. The Federal Circuit held that, because the ’261 application is a parent application to the ’559 patent, the patentee’s statements during the prosecution of the ’261 application distinguishing the ’262 application were part of the prosecution history of the ’559 patent, which was the patent at issue. *Id.* at 1167. In addition, the Federal Circuit held that the ’262 application was part of the intrinsic evidence of the ’559 patent. *Id.* at 1167. However, the court explained that the ’261 and ’262 applications “lack the formal relationship necessary for free license to use the contents of the ’744 patent and prosecution history when construing the claims of the ’559 patent.” *Id.* at 1167-68. The court clarified that, “[w]hile the ’262 application was distinguished from the scope of the ’261 application’s claims, incorporating its contents *at that point* into the intrinsic evidence of the ’559 patent,” certain passages from the ’744 patent relied on by the district court constituted new matter added during a continuation-in-part application of the ’262 application and thus were not similarly incorporated. *Id.* at 1167-68. Thus, statements made in a patent or its prosecution history are irrelevant to claim construction “[a]bsent a formal relationship or incorporation during prosecution” of the patent at issue. *Id.* at 1168.

Contrary to the facts in *Goldenberg*, Dr. Alexander did not make any statements distinguishing or otherwise incorporating another patent or patent application during the prosecution of the patent at issue here, the ’174 patent. *See* JX-2. Instead, the statements that the ALJ found were part of the prosecution history of the ’174 patent were made after the ’174 patent had issued and during the prosecution of an unrelated application, the ’572 application.

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See ID at 22-23 (citing RX-69 at 62-63, 72-75). Under *Goldenberg*, the '174 patent and Dr. Alexander's statements distinguishing the '174 patent were incorporated into and thus are part of the intrinsic evidence of the patent that resulted from the '572 application, the '211 patent. By contrast, because the '572 application was never cited in the prosecution history of the '174 patent, neither the '572 application nor the statements made by Dr. Alexander during the prosecution of the '572 application were incorporated into the intrinsic evidence of the '174 patent. Vuly does not make any effort to dispute these distinctions with *Goldenberg*, despite Springfree arguing them at length, see Springfree Pet. at 8-14.

Instead, Vuly acknowledges that Dr. Alexander's statements during the prosecution of the '572 application are not intrinsic evidence but rather "better classified as extrinsic evidence of the patentee disclaiming claim scope of particularly high relevance and significance." Vuly Pet. at 24-25. For support, Vuly relies on *Microsoft Corp. v. Multi-Tech Systems, Inc.*, 357 F.3d 1340, 1350 (Fed. Cir. 2004), *Ballard Medical Products v. Allegiance Healthcare Corp.*, 268 F.3d 1352, 1358-59 (Fed. Cir. 2001), and *Cummins-Allison Corp. v. Glory Ltd.*, 457 F. Supp. 2d 843, 850 (N.D. Ill. 2006), see Vuly Pet. at 26-28, but each of those cases involved statements made during the prosecution of the asserted patent or an application in the same family as the asserted patent. Only one nonbinding decision cited by Vuly, *Northeastern University v. Google, Inc.*, No. 2:07-CV-486-CE, 2010 WL 4511010, at *5-6 (E.D. Tex. Nov. 9, 2010), treated the prosecution history of an unrelated patent filed by the same inventor as extrinsic evidence in construing the asserted claims. The district court in that case accordingly gave the inventor's statements "less weight" and ultimately declined to use the statements to contradict the intrinsic record of the patent. *Id.*

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Our rejection of Vuly's arguments is consistent with Federal Circuit precedent on the use of inventor statements and testimony for claim construction purposes. *See Howmedica Osteonics Corp. v. Wright Med. Tec., Inc.*, 540 F.3d 1337, 1346-47 (Fed. Cir. 2008) (“[I]t is not unusual for there to be a significant difference between what an inventor thinks his patented invention is and what the ultimate scope of the claims is after allowance by the PTO.”; holding that testimony regarding an inventor's subjective intent is irrelevant to claim construction); *Phillips*, 415 F.3d at 1317 (explaining that inventor testimony is “less significant than the intrinsic record in determining the legally operative meaning of claim language” (internal quotation marks omitted)).

Moreover, the Federal Circuit has already rejected the argument that statements made in a later, unrelated patent that are inconsistent with a party's proposed construction can be used to limit the scope of a claim. *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1381 (Fed. Cir. 2014) (“[S]tatements made during prosecution of a later, unrelated patent cannot form the basis for judicial estoppel.”). Vuly contends that the inventor's statements must be considered because Springfree made sworn representations to one government agency (the Patent Office) to obtain a patent and made contradictory representations to another government agency (the International Trade Commission) for “domestic industry and infringement purposes.” Vuly Pet. Resp. at 26-28. Although Vuly avoids the label of judicial estoppel, its argument nonetheless touches on all three factors relevant to the doctrine's application to prevent Springfree from obtaining a broader construction. *See Hill-Rom Servs.*, 755 F.3d at 1380 (identifying three factors as “1) a party's position must be clearly inconsistent with an earlier position taken; 2) the party must have prevailed on the basis of the earlier position; and, 3) the party asserting the inconsistent position

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would derive an unfair advantage or impose an unfair detriment on the opposing party if not estopped”).

We therefore construe “first retaining means” such that the claimed function is to retain a first end of a flexible elongated rod and the corresponding structures include (1) a pocket or pouch formed with an aperture on the non-contact (a.k.a., lower surface) of the flexible mat or (2) an end-piece and a pouch sewn into the fabric of the non-contact (a.k.a., lower surface) of the flexible mat. We reject the ALJ’s identification of “a pouch sewn into the fabric of the mat with an aperture on the non-contact (a.k.a., lower surface) of the flexible mat” as a structure corresponding to “first retaining means.” We conclude that the intrinsic record does not support the ALJ’s finding of prosecution history disclaimer and reverse the ALJ’s finding in that regard.

3. “flexible elongated rod” (claims 1 and 13)

The ALJ found that “flexible elongated rod,” which appears in both claims 1 and 13, should be given its plain and ordinary meaning because the term is readily understood as a rod that is both flexible and elongated. ID at 37-38.

The central dispute between the parties regarding the construction of this term is whether a “flexible elongated rod” must be cylindrical. Springfree argues that the claimed rod can take any shape. Springfree Pet. Resp.⁶ at 20-21. Vuly contends that the rod is limited to a circular cross-section. Vuly Pet. at 35.

We agree with the ALJ’s finding that nothing in the claims or the specification of the ’174 patent indicates that the patentee intended this limitation to have any special meaning beyond its plain and ordinary meaning. *See* ID at 37-38. As explained above with respect to

⁶ Springfree Complainants’ Response to Vuly’s Petition to Review.

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“flexible mat,” absent lexicography or disavowal, a claim term should not be interpreted more narrowly than its ordinary meaning. *See Aventis Pharms.*, 715 F.3d at 1373. Here, the intrinsic record is devoid of any indication that the patentee acted as his own lexicographer or disavowed the full scope of the term “flexible elongated rod.”

The ALJ’s construction is consistent with the teachings of the specification. In describing the “innovative design of the present invention,” the specification states “the flexing action of the rods (4) provides a comparable performance to that of conventionally sprung trampolines.” JX-1 at 4:18-24. With respect to the preferred embodiment, the specification discloses that the rods connect the mat and the support element and “bend[]” and “flex[]” to allow assembly and bouncing. *See, e.g., id.* at 2:53-59, 3:49-57.

We also agree with the ALJ that Vuly’s construction impermissibly imports a limitation from the preferred embodiment of the specification into the claims. *See ID* at 38-39. Vuly argues that the ’174 patent describes and illustrates in multiple locations that the flexible elongated rods fit into “cylindrical sleeves,” “cylindrical elements,” or “cylindrical holders.” Vuly Pet. at 35. But those disclosures all refer to the preferred embodiment and thus do not suffice to limit the “flexible elongated rod” to a cylindrical shape. “It is not enough for a patentee to simply disclose a single embodiment or use a word in the same manner in all embodiments, the patentee must clearly express an intent to redefine the term.” *See Thorner*, 669 F.3d at 1365 (internal quotation marks omitted).

An intent to limit the rod to a cylindrical shape is not expressed anywhere in the specification. To the contrary, the specification explains that the rods “may be made of any suitably resilient material, though in practice it has been found advantageous to use pultruded fiberglass of circular cross-section.” JX-1 at 2:60-62. We agree with the ALJ that the

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specification's preference for "pultruded fiberglass of circular cross-section" indicates that various materials and shapes are included within the scope of the patent. *See* ID at 38. Vuly argues that this phrase "reinforces that the *only* cross-sectional shape contemplated in the specification is a circular cross-section" and that, properly read, the entire sentence allows variations in material, but not shape. *Vuly Pet.* at 37-38. This argument distorts any natural reading of that sentence. As suggested by Springfree, if the claimed rods are always cylindrical, then there would have been no need for the specification to refer to a "circular cross-section." *See* Springfree *Pet. Resp.* at 22. Regardless, these two words alone do not constitute clear disavowal so as to restrict the meaning of "flexible elongated rod."

Vuly also argues that a cylindrical rod design is "inherent and essential" to the claimed invention because the '174 patent teaches to incline the rods in a substantially tangential direction to the perimeter of the mat as well as in the radial direction. *Vuly Pet.* at 35-36. Vuly contends that the rod must have a circular cross-section because the '174 patent requires that the rod bend in different directions based on the weight of the jumper. *Id.* at 36. The ALJ properly rejected these arguments, as well as the corresponding testimony of Vuly's expert, Dr. Ball, as premised on the erroneous belief that the rods must be inclined. *See* ID at 38-39. As the ALJ noted, inclined rods are preferred, but not required, by the asserted claims. *Id.* at 29-30 (citing JX-1 at 1:62-63, 2:42, 3:57-62), 39.⁷

Vuly argues that the ALJ failed to consider the extrinsic evidence supporting its construction. *Vuly Pet.* at 38-39. However, "extrinsic evidence in general, and expert testimony

⁷ The language of claim 2 further suggests that the rods recited in claim 1 need not be inclined. Claim 2, which depends on claim 1, requires that "each said rod extends upwards from said support element at an incline." JX-1 at 4:50-51.

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in particular, may be used only to help the court come to the proper understanding of the claims; it may not be used to vary or contradict the claim language [or] the import of other parts of the specification.” *Vitrionics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1584 (Fed. Cir. 1996). We find that the engineering textbooks and documents from Dr. Alexander’s files on which Vuly relies to narrow the meaning of “flexible elongated rod” contradict the intrinsic record and thus we give such evidence little to no weight. By contrast, the extrinsic evidence relied upon by Springfree is consistent with the intrinsic evidence and supports a construction that does not restrict the shape of the claimed rod. Springfree’s expert, Dr. Reinholtz, testified that rods can have a number of different shapes. *See* Hr’g Tr. 246:1-247:14. The definition provided by Springfree from the Dictionary of Mechanical Engineering also suggests that a rod can be of any shape, although “frequently of circular cross-section.” CX-156 (defining a “rod” as a “slender straight metal bar, frequently of circular cross-section”).

We therefore adopt the ALJ’s construction based on our analysis.

C. Infringement

The ALJ found that the accused Vuly Thunder trampolines infringe claims 1 and 13 of the ’174 patent. ID at 47, 63. The Commission determined to review these findings.

On review, we affirm, on modified grounds, the ALJ’s finding that the Vuly Thunder infringes claim 13, but reverse the ALJ’s finding that the Vuly Thunder infringes claim 1. We find that the Vuly Thunder meets the “flexible mat” limitation as properly construed. As explained below, we conclude that the ALJ erred in finding that the Vuly Thunder satisfies the “first retaining means” limitation. We agree with the ALJ’s finding of infringement concerning the “second retaining means” and “plurality of flexible elongated rods” limitations, but on modified grounds. We also conclude that the Vuly Thunder does not satisfy the “retained at a

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first and second end by said first and second retaining means respectively” limitation. We find no error in and thus adopt the ALJ’s findings with respect to the remaining limitations of claims 1 and 13.

1. “flexible mat” (claims 1 and 13)

The ALJ found that, based on the un rebutted testimony of Dr. Reinholtz, the Vuly Thunder literally meets the limitation of “flexible mat.” ID at 48. Dr. Reinholtz’s literal infringement opinion was based on Springfree’s proposed construction of “sheet or fabric that is tensioned to provide a bouncing surface.” CX-177C at Q/A 164-66.

The expert testimony relied upon by the ALJ, as well as evidence cited by Springfree, supports an infringement finding based on our broader construction of the term “flexible mat.” See ID at 47 (citing CX-177 at Q/A 152-276); Springfree Resp.⁸ at 4 (citing CX-159 at 1535-37; CX-177C at Q/A 163-66; Hr’g Tr. 236:2-11, 251:24-252:22). For example, Dr. Reinholtz testified that the mat is “flexible” and “deforms when a user lands, and returns to its horizontally tensioned state when the user is thrown back in the air away from the mat.” CX-177C at Q/A 157, 164. As depicted in the photographs below (CX-159 at 1536-37), the Vuly Thunder mat flexes as a user lands on the mat.



⁸ Springfree’s Written Submission on the Issues Identified in the Notice of Commission Determination to Review the Final Initial Determination in Part.

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Testimony by the CEO and founder of Vuly Trampolines, Joe Andon, also shows that the Vuly Thunder mat is flexible or capable of being flexed. Mr. Andon testified that the Vuly Thunder mat “flexes” as it receives a load applied to the mat. Hr’g Tr. 441:21-442:1.

Vuly’s arguments against infringement are premised on either its improper construction of “flexible mat” or limitations that are not required by our construction. Vuly Pet. at 45-46; Vuly Resp. at 7-8. We reject Vuly’s arguments.

We conclude that the record supports a finding that the Vuly Thunder literally meets the limitation of “flexible mat.”

2. “first retaining means” (claim 1)

The ALJ found that the Vuly Thunder meets the limitation of “first retaining means” both literally and under the doctrine of equivalents. ID at 53-54. The ALJ found that the straps sewn onto the underside of the mat in the Vuly Thunder, as well as the straps and the hook assembly, perform the claimed function of retaining a first end of a flexible elongated rod. *Id.* at 51. The ALJ also found that these structures in the Vuly Thunder are equivalent to the corresponding structures he identified in the specification of the ’174 patent.⁹ *Id.* at 52-53.

“Literal infringement of a means-plus-function claim limitation requires that the relevant structure in the accused device perform the identical function recited in the claim and be identical or equivalent to the corresponding structure in the specification.” *Applied Med. Res. Corp. v. U.S. Surgical Corp.*, 448 F.3d 1324, 1333 (Fed. Cir. 2006). “[T]wo structures may be

⁹ We believe the ALJ mistakenly stated on page 53 of the ID that the straps and hook assembly are “the same” as the disclosed end-piece and pouch. *Compare* ID at 53 (“I find the hook assembly and straps to be the same as an end piece [sic] and a pouch”) *with id.* at 51 (“Neither . . . do I find the hook assembly and the straps to be the same as an end piece [sic] and a pouch”).

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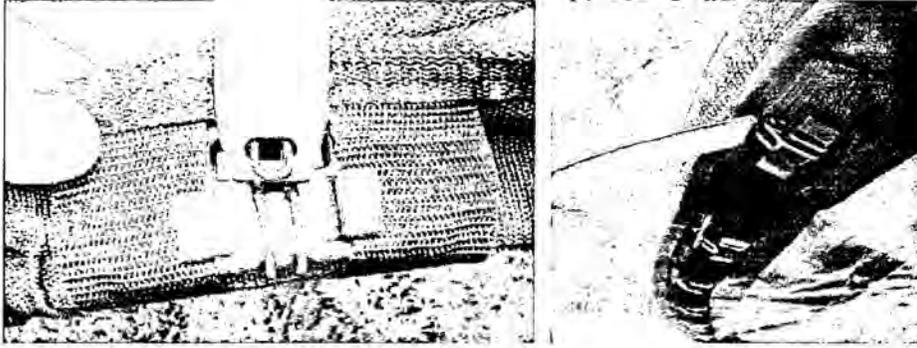
‘equivalent’ for purposes of section 112, paragraph 6 if they perform the identical function, in substantially the same way, with substantially the same result.” *Kemco Sales, Inc. v. Control Papers Co.*, 208 F.3d 1352, 1364 (Fed. Cir. 2000).

If the accused structure does not perform the identical function of the disclosed structure, it may nonetheless still be an equivalent under the doctrine of equivalents. *Id.* at 1364. To infringe a means-plus-function limitation under the doctrine of equivalents, the accused structure “must perform substantially the same function, in substantially the same way, to achieve substantially the same result, as the disclosed structure.” *Id.* “Because the ‘way’ and ‘result’ prongs are the same under both the section 112, paragraph 6 and doctrine of equivalents tests, a structure failing the section 112, paragraph 6 test under either or both prongs must fail the doctrine of equivalents test for the same reason(s).” *Id.* Infringement of a means-plus-function limitation may need to be proven under the doctrine of equivalents if the accused device features technology that has arisen after the patent issues. *Ishida*, 221 F.3d at 1317 (citing *Al-Site Corp. v. VSI Int’l, Inc.*, 174 F.3d 1308, 1320-21 (Fed. Cir. 1999)). Neither party asserts that the Vuly Thunder implicates after-arising technology. *See ID* at 54.

As shown in the photographs below (CX-159 at 1540, 1544), the Vuly Thunder uses two straps of material sewn to the lower, non-contact side of the flexible mat. *ID* at 49. Each strap is open on two sides and holds a hook assembly against the mat. *See id.* A metal hook, which is located between the two straps, hooks through a slot in a first end of a leaf spring, thus retaining the first end of the leaf spring.¹⁰ *Id.* at 49-50.

¹⁰ As discussed below, the ALJ found, and we agree, that the leaf spring in the Vuly Thunder is equivalent structure to a “flexible elongated rod.” *See ID* at 61.

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To determine whether the Vuly Thunder trampoline literally contains the “first retaining means” limitation, it is necessary to first determine whether the accused product performs the identical claimed function of retaining a first end of a flexible elongated rod. We agree with the ALJ that the straps plus the hook assembly in the Vuly Thunder perform the claimed function. *See* ID at 50-51.¹¹

The evidence shows, as the ALJ found, that the straps in the Vuly Thunder are not identical in structure to the pocket or pouch disclosed in the '174 patent specification. *See id* at 51. Each strap of material is open on both sides, whereas a pocket or pouch has a single opening. *Id.*; *see* CX-159 at 1540, 1544. It necessarily follows that the combination of the straps and the hook assembly also is not identical to the combination of the pouch sewn into the fabric of the mat and the end-piece disclosed in the specification.

Because the Vuly Thunder does not contain the same structure as the disclosed structures, we turn next to the question of whether the Vuly Thunder contains an equivalent structure under § 112, ¶ 6. Vuly asserts that the ALJ did not identify similarities in the “way the structures

¹¹ Vuly contends that the slot in the end of the leaf spring is also required for the Vuly Thunder to perform the retaining function. Vuly Pet. at 50. We consider below the role of the slot in our analysis of the way the Vuly Thunder performs the retaining function.

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perform the retaining function” and instead relied on similarities that are “unrelated to the retaining function.” Vuly Pet. at 53 (emphasis removed). We agree with Vuly.

In determining whether the straps in the Vuly Thunder and the disclosed pocket or pouch are equivalent structure, the ALJ did not analyze the way in which the straps perform the claimed function of retaining the first end of a rod. Nor did the ALJ identify what identical results are achieved by the structures in the Vuly Thunder and the structures disclosed in the ‘174 patent.

Instead the ID states:

. . . I do find the straps, as well as the hook assembly and straps, to be equivalent structure. In the Vuly Thunder the straps are sewn to the non-contact side of the flexible mat. Additionally, each pair of straps used to retain a hook assembly form an opening (*i.e.*, aperature [sic]) between the straps where the hook protrudes. The evidence shows the straps in the Vuly Thunder retain the hook assembly to the mat in substantially the same way as the pocket or pouch disclosed in the ‘174 patent retains the first end of the flexible elongated rod to the mat. Moreover, in both cases the results are identical. ID at 52.

We conclude the ALJ erred in finding an equivalent structure in the Vuly Thunder based on these findings alone. First, the ALJ improperly focused his inquiry on the way that the straps *retain the hook assembly*, which is a function different from the claimed function. *See Odetics*, 185 F.3d at 1259 (requiring for statutory equivalence “a determination of whether the ‘way’ the assertedly substitute structure performs *the claimed function* . . . is substantially different from the ‘way’ *the claimed function* is performed by the ‘corresponding structure, acts, or materials described in the specification’” (emphasis added)). Second, the ALJ’s comparison of the way that the straps *retain the hook assembly* with the way that the disclosed pouch or pocket *retains the first end of the flexible elongated rod* shows the structures performing different functions, rather than the identical function as required to establish equivalent structures. *See Kemco Sales*, 208 F.3d at 1364 (“[T]wo structures may be ‘equivalent’ for purposes of section 112, paragraph

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6 if they perform the identical function, in substantially the same way, with substantially the same result.”).

We also conclude that the ALJ’s analysis with respect to the combination of the straps plus the hook assembly is deficient. The ALJ found that the straps and hook assembly are equivalent structure to the disclosed end-piece and pouch based on various similarities between the accused product and the preferred embodiment of the ’174 patent. ID at 52-53. In addition to a “striking similarity” between Figure 4(b) in the ’174 patent and a photograph of the accused product, the ALJ found that:

The ’174 patent teaches that the end piece [sic] may be removed from the first end of the flexible elongated rod. (JX-1 at 2:10-14, 5:5-6.) Likewise the hook assembly in the Vuly Thunder is removable from the first end of the leaf spring. The ’174 patent also teaches that the pocket or pouch retains the end piece [sic]. Substantially similarly, the straps in the Vuly Thunder retain the hook assembly. Additionally, just as the pocket or pouch in the ’174 patent allows some relative motion between the rod, its end cap, and the mat, the evidence shows so to [sic] do the straps of the Vuly Thunder between the leaf spring, its hook assembly, and the mat. Moreover, in both cases the result is identical. *Id.*

The ALJ again based his finding of equivalent structure on a comparison of the way the disclosed pocket or pouch performs the claimed function of retaining the first end of a rod with the way that the straps *retain the hook assembly*. We do not find, and the record evidence does not support, that the removability of the hook assembly and disclosed end-piece, as well as the relative motion between the various structures, relate to the *way* in which the structures *retain* the first end of a rod. Further a mere comparison of the physical appearances of the accused product and the disclosed structure does not establish that the two structures retain the first end of a rod in substantially the same way, especially in light of the arguments raised by Vuly.

A difference in physical structure, however, does not necessarily negate § 112, ¶ 6 equivalence. *Minks v. Polaris Indus., Inc.*, 546 F.3d 1364, 1379 (Fed. Cir. 2008). “Indeed, the

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statute requires two structures to be equivalent, but it does not require them to be ‘structurally equivalent,’ i.e., it does not mandate an equivalency comparison that necessarily focuses heavily or exclusively on physical structure.” *IMS Tech., Inc. v. Haas Automation, Inc.*, 206 F.3d 1422, 1436 (Fed. Cir. 2000). The context of the invention will inform the inquiry as to whether two structures are equivalent. *Id.* Also, we note that differences in structural mechanisms often drive the “way” prong of the equivalence analysis. *See, e.g., C.R. Bard, Inc. v. M3 Sys., Inc.*, 157 F.3d 1340, 1363 (Fed. Cir. 1998) (affirming jury verdict of non-infringement based on non-equivalent structure where the accused device “relies on the lever-action of the handle, as opposed to a rotating sleeve, *to pull, rather than push*, the needle sleds sequentially back toward their respective latches” (emphasis added)); *Cortland Line Co. v. Orvis Co.*, 203 F.3d 1351, 1359 (Fed. Cir. 2000) (holding that the accused structure did “not ‘connect’ in substantially the same way, i.e., threadably lock” as the corresponding structure); *Kemco Sales*, 208 F.3d at 1365 (“[U]nlike the disclosed flap, which closes by folding over the envelope, the dual-lip structure closes the accused envelope in a different way by meeting together and binding via the internal adhesive.”).

Under the proper analysis, we conclude that the record shows that the straps in the Vuly Thunder, when considered alone or in combination with the hook assembly,¹² are not equivalent to the structures disclosed in the ’174 patent because the Vuly structures do not retain the first end of the leaf spring in substantially the same way as the disclosed structures retain a first end

¹² It appears the ALJ made separate findings as to the straps and the straps plus the hook assembly in response to alternative arguments by Springfree. The proper § 112, ¶ 6 analysis for both is essentially the same. As found by the ALJ, ID at 50, and discussed above and below, the straps and the hook assembly together perform the claimed function. Thus, identifying the way in which the Vuly Thunder performs the claimed function and the result that is obtained necessarily requires analysis and discussion of both the straps and the hook assembly.

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of a rod. The '174 patent discloses that the end-pieces are “inserted and retained within pouches” and “afford a secure means of retaining a rod (4) within a pouch (5) whilst under tension.” JX 1 at 2:65-66, 3:6-11. Put another way, in the preferred embodiment, the pouch retains the first end of the rod by enclosing both the end-piece and the end of the rod within the pouch. The specification does not describe in any detail the way in which the disclosed pouch or pocket retains the end of a rod without the use of an end-piece. According to Dr. Reinholtz, a person of ordinary skill in the art would understand that the disclosed pocket or pouch retains a first end of a rod by confining that portion of the rod “within the boundaries of the pouch or pocket.” Hr’g Tr. 325:4-24; *see also* CX-177C at Q/A 43, 199. We find this testimony reasonable and consistent with the specification’s description of the pouch in the preferred embodiment. Thus, in both embodiments, the pouch (or pocket) encloses the first end of the rod, and, in the preferred embodiment, the addition of the end-piece helps to hold the first end of the rod within the pouch. By contrast, neither the straps alone nor the straps plus the hook assembly in the Vuly Thunder enclose a first end of a leaf spring. *See* CX-159 at 1540, 1544. Although the hook assembly is inserted and retained within the straps, *see* ID at 49, the hook assembly does not retain the end of the rod *within* the straps as disclosed in the specification. *See* CX-159 at 1540, 1544. Dr. Reinholtz, in fact, agreed that the end of the leaf spring “doesn’t go inside a pocket.” Hr’g Tr. 330:14-18. Instead, the hook in the hook assembly, which protrudes from a space between the straps, “clips” into a slot at the first end of a leaf spring, creating a hinge-type connection that is external to the straps. *See* CX-159 at 1540, 1544; RX-200C at 160-62.

We agree with Vuly that these differences affect the way the disclosed structures and the structures in the Vuly Thunder perform the claimed function. As Vuly’s expert, Dr. Ball, explains, the hook and slot connection in the Vuly Thunder is “designed specifically to resist a

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tensile load, i.e., it resists being pulled apart”; the “hook and slot cannot resist a compressive load, and a compressive force applied to the hook and slot will disassemble the connection.” RX-200C at Q/A 167. By contrast, the disclosed “rod end in a pouch/pocket resists a compressive load” and can slide out of the pocket if a tensile, or pulling, force is applied. *Id.*; *see also* Hr’g Tr. 526:17-25. Dr. Ball’s broad testimony supports a finding that the disclosed pouch or pocket, with or without an end-piece, resists a compressive load.¹³ Vuly further explains that, whereas the straps and hook assembly in the Vuly Thunder pull the mat and create a bouncing surface, the rods push outwardly against the mat to create a bouncing surface. *See* Vuly Pet. at 56. In response, Springfree asserts that this argument is premised on a preferred embodiment in which the rods are arranged in an inclined swirl pattern. Springfree Pet. Resp. at 32 n.6. Springfree also asserts that the rod orientation, which is not limited by the claims, affects whether the end of a rod in a pocket experiences compressive or tensile forces. *Id.* Springfree does not cite to any evidentiary support for these assertions, and we find no basis for them in the record. We find that the record as a whole shows that, whereas the disclosed pouch retains the end-piece and the first end of a rod by resisting a compressive load, the hook assembly retains the first end of a leaf spring by resisting a tensile load. We therefore find that the Vuly Thunder structures perform the retaining function in a substantially different way than the disclosed structures.

¹³ Although Dr. Ball does not expressly address the end-piece in his testimony regarding the resistance of a compressive load, neither party provides any reason why the addition of an end-piece—which the parties agree is rigidly attached to the first end of the rod, *see* Vuly Pet. at 53, 59; Hr’g Tr. 324:12-16—would substantially change the load that is resisted. Rather the record shows that the end-piece enhances the pouch’s ability to retain the first end of the rod. *See* JX-1 at 3:6.

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These substantially different ways of performing the claimed functions, however, do not yield substantially different results. The straps and the hook assembly in the Vuly Thunder and the disclosed pouch and end-piece accomplish substantially the same result of holding or connecting the rod to the underside of the mat. *See* CX-177C at Q/A 201-02; CX-159 at 1540; JX-1 at 2:53-59. Like the disclosed structure, the connection in the Vuly Thunder results in tensioning the flexible mat to form a bouncing surface. *See* JX-1 at 2:53-59, 4:18-22; CX-159 at 1540. These results are obtained in both the accused product and the disclosed embodiment regardless of the way the structures retain the first end of the rod.

Nonetheless, Vuly contends that the results of the accused product differ from the results of the structure disclosed in the '174 patent because the disclosed pouch and end-piece form a rigid connection that resulted in cracking and unintentional release. *Vuly Pet.* at 53, 59. Specifically, the inventor, Dr. Alexander, told the Patent Office that the fitting disclosed in the '174 patent “tended to crack around the junction to the rod when subjected to overload such as when multiple users jump on the trampoline close to the end of the mat” and the “rod end is no longer properly connected to the mat as a result.” *RX-69* at 73. Springfree does not dispute that the disclosed end-piece and rod are rigidly connected, and Dr. Reinholtz agreed that the hook and the leaf spring in the Vuly Thunder “are not rigidly attached.” *Springfree Pet. Resp.* at 32; *Hr’g Tr.* 323:24-324:16. However, Springfree argues that equivalence cannot be avoided because a rigid connection is not a claimed function. *Springfree Pet. Resp.* at 32-33.

We conclude that the rigid connection of the disclosed structures does not preclude a finding of equivalence. First, the evidence does not show that a rigid connection is critical or even relevant to performing the claimed function in the context of the invention. To the contrary, Dr. Alexander’s statements suggest that the rigid connection becomes significant only

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when the trampoline is subjected to overload conditions. Although it may be ideal and more attractive to consumers, withstanding overload from multiple users is not required by the asserted claims or suggested to be achieved by the invention. Second, Vuly does not dispute that, despite not being rigidly attached, the hook assembly nonetheless connects the leaf spring to the mat. Vuly Pet. at 59 (“[T]he ‘result’ of the Vuly [T]hunder structure is that the mat and leaf spring pull against each other—in tension—with the hook and slot of the leaf spring connected . . .”).

Vuly also argues that its “hook and slot connection allows motion primarily in one direction only, i.e., up and down,” which Vuly contends is substantially different from the “relative motion between the rod end and the mat that is rotational about an inclined axis” resulting from the tangentially inclined rods in the ’174 patent. Vuly Resp. at 20-21. But this argument rests on the false assumption that the embodiment containing the disclosed pouch and end-piece is limited to a configuration in which the rods are arranged at a tangential incline. The ’174 patent describes other configurations in which the rods are arranged vertically or at upwards incline, both of which would result in a relative motion primarily in the up-and-down direction. *See* JX-1 at 3:57-62; Springfree Reply at 10.

Because we conclude that the structures in the Vuly Thunder perform the claimed function in a substantially different way than the disclosed structures under a § 112, ¶ 6 analysis, we find that the Vuly Thunder does not meet the “first retaining means” limitation under the doctrine of equivalents for the same reason. *See Kemco*, 208 F.3d at 1364.

Because we find that the Vuly Thunder trampoline does not satisfy the “first retaining means” limitation, we reverse the ALJ’s finding of infringement of claim 1.

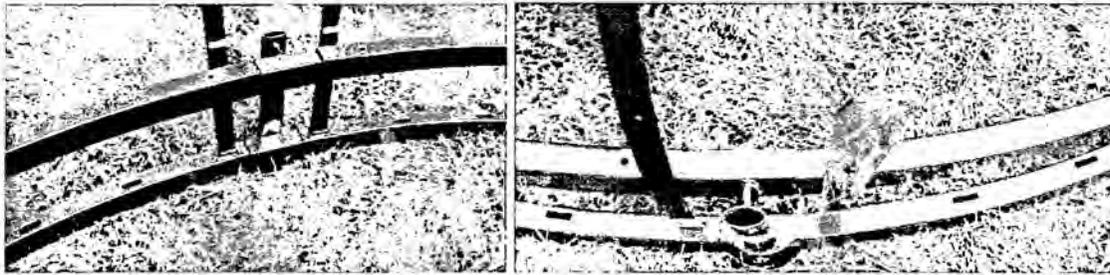
3. “second retaining means” (claim 1)

The ALJ found that the Vuly Thunder meets the limitation of “second retaining means” literally and under the doctrine of equivalents. ID at 56-57. Specifically, the ALJ concluded that

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a slot in the Vuly Thunder's lower frame performs the claimed function of retaining a second end of a flexible elongated rod and is an equivalent structure to the cylindrical element and holder disclosed in the '174 patent. *Id.* at 56.

As shown in the photographs below of a partially-assembled product (CX-159 at 1546-47), the Vuly Thunder uses an upper and lower frame. *Id.* at 55. The lower frame contains rectangular slots, each of which supports a second end of a leaf spring. *Id.*; *see also* CX-177C at Q/A 243.



In construing the “second retaining means” limitation, the ALJ found that the function of the “second retaining means” is to retain a second end of a flexible elongated rod and that the structure in the specification of the '174 patent corresponding to that function is a cylindrical element or a tubular cylindrical holder that is closed (or pinched) at one end. ID at 28-30. The Commission determined not to review this construction.

The parties do not dispute that the Vuly Thunder structure and the disclosed structures perform the identical function of retaining a second end of a flexible elongated rod. The parties, however, differ on whether the Vuly Thunder structure is equivalent to the disclosed structures.

The '174 patent discloses a cylindrical holder with one end that is closed and a second end that is open so that the second end of the rod can be inserted into the holder. JX-1 at 3:12-20; *see also* ID at 56-57. Dr. Reinholtz testified that the rod is confined by the boundaries of the holder. CX-177 at Q/A 244; *see also* JX-1 at Fig. 5. Dr. Reinholtz also testified that the slot in

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the lower frame of the Vuly Thunder works in substantially the same way in confining the second end of the leaf spring. *See* CX-177C at Q/A 245; CX-159 at 1546-47. The underside of the lower frame prevents the end of the leaf spring from going through the frame. ID at 57; CX-159 at 1546-47. We find that the evidence shows that the Vuly Thunder lower frame retains the second end of a rod in substantially the same way as the disclosed cylindrical holder.

We also find the Vuly Thunder lower frame achieves substantially the same result as the cylindrical holder because they both connect the rod to the support element. *See* JX-1 at Fig. 5, 3:12-20; CX-159 at 1546-47; CX-177C at Q/A 246-47.

Vuly identifies two differences between the accused product and the disclosed cylindrical holder. Neither of these differences is substantial.

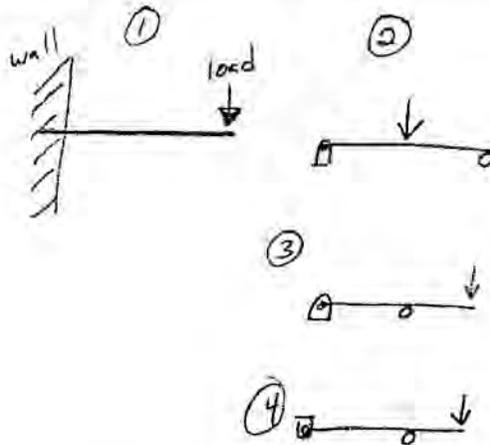
First, Vuly points to the fact that the disclosed holder is cylindrical, whereas the slot in the Vuly Thunder is rectangular. Vuly Pet. at 62. This argument gains no traction because infringement of a means-plus-function limitation does not require identity in structure. *See Odetics*, 185 F.3d at 1264 (“Functional identity and *either structural identity or equivalence* are *both* necessary.” (first emphasis added)). Moreover, as noted above, the different shapes of the openings are not significant because the openings have the same shape as the rods and are slightly larger than the rods to allow insertion and retention. *See* ID at 56-57; JX-1 at Fig. 5, 3:12-20; CX-177 at Q/A 243, 245, 247.

Second, Vuly argues that the Vuly Thunder retains a leaf spring in a substantially different way than the disclosed structure. Specifically, Vuly refers to testimony by Dr. Alexander describing the disclosed cylindrical holder as a “cantilevered” element, which both Dr. Alexander and Dr. Ball describe as “different” than an element in three-point bending. Vuly Pet. at 63. According to Dr. Alexander, the cylindrical holders of the '174 patent rigidly fix the

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lower end of the rod, while allowing the other end to move freely, thus creating a cantilevered structure as shown in the first illustration below. Hr'g Tr. 157:3-158:16; CX-178C at Q/A 32-35.

Vuly contends that the leaf springs of the Vuly Thunder, when inserted into the slot of the frame tube, are in three-point-bending, as shown in the fourth illustration below. Vuly Pet. at 63.



RX-204. According to Vuly, the cantilevered structure of the disclosed cylindrical holder allows movement in different directions depending on the weight of different users, whereas the leaf spring in three-point bending allows movement in only one direction. Vuly Pet. at 63. In response, Springfree contends that the difference between cantilevering and three-point-bending is not germane because, when the Vuly Thunder is assembled, the leaf spring is a cantilever beam. See Springfree Pet. Resp. at 34. Dr. Reinholtz testified the end of the leaf spring “fits into that aperture in the ring, and . . . is pressed against the upper frame member by the tension that’s placed in the rod,” and “once it’s in that configuration, the operational configuration of the trampoline, it’s a cantilever beam, for practical purposes.” Hr’g Tr. 411:6-13. Vuly’s CEO, Mr. Andon, also testified that the frames of the Vuly Thunder “are cantilevering each other.” *Id.* at 440:6-12.

We have reviewed the evidence cited by the parties, as well as other relevant portions of the record, and conclude that the differences due to a cantilever vs. three-point bending structure

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are not significant to the infringement analysis. Vuly's argument that the two types of structures are "structurally different" does not directly address the question of whether the structures are equivalent. *See IMS Tech.*, 206 F.3d at 1436 ("[T]he statute requires two structures to be equivalent, but it does not require them to be 'structurally equivalent.'"). Vuly does not explain, and the record does not show, that the structures are *substantially* different in the way that they perform the claimed function of retaining the second end of a leaf spring. *See Hr'g Tr.* 157:3-22, 469:23-473:25. The record does not support Vuly's assertion that the cantilevered structure of the cylindrical holder allows the rod to move in different directions. Instead, Dr. Ball testified that the bending in different directions is primarily due to the use of rods with circular cross-sections: "[T]he way the patent describes the flexible rods providing this bending motion, you really do need a round cross-section, because it's got a moment—or an area moment of inertia that's equal regardless of which direction you bend it. So it can bend in any direction if you hold the end." *Id.* at 466:9-20. Further, when asked why the cantilevering vs. three-point bending is relevant, Dr. Ball testified that the leaf spring moves within the space of the slot and "catches" against the wall of the slot. *Id.* at 474:3-475:25. This testimony, and the record as a whole, does not support Vuly's contention that the movement resulting from the slot in the Vuly Thunder is substantially different than the movement resulting from the disclosed cylindrical holder.

Because the lower frame and slot in the Vuly Thunder perform the identical function as the disclosed structures, the analysis of equivalent structures under the doctrine of equivalents is coextensive with the analysis under § 112, ¶ 6. Therefore, the Vuly Thunder also contains a "second retaining means" under the doctrine of equivalents.

For these reasons, we find that the Vuly Thunder includes a "second retaining means," both literally and under the doctrine of equivalents.

4. “plurality of flexible elongated rods” (claims 1 and 13)

The ALJ found that the leaf springs in the Vuly Thunder do not meet the “plurality of flexible elongated rods” limitation literally, but found infringement under the doctrine of equivalents. ID at 60-61.

Vuly argues that the Vuly Thunder leaf springs are not equivalent to “flexible elongated rods.” Vuly Pet. at 68. Vuly contends that, because the ’174 patent requires rods with a circular cross-section, the rods “flex in multiple directions and planes to tension the mat and provide bounce for various users.” *Id.* Vuly asserts that the leaf springs, by contrast, are bars with a rectangular cross-section that flex about one axis only. *Id.* We agree with the ALJ that Vuly’s arguments largely rest on the incorrect assumption that the claimed invention is limited to the preferred embodiment in which the rods are at a tangential incline, i.e., a swirl pattern, and does not account for other configurations, such as vertically upright rods, that are disclosed by the ’174 patent. *See* ID at 61; RX-200C at Q/A 206.

The disclosures of the patent and Dr. Reinholtz’s testimony show that the leaf springs in the Vuly Thunder perform substantially the same function in substantially the same way to obtain substantially the same result as the claimed “flexible elongated rod.” The claimed rods perform two functions: to support the mat above the support element and to apply tension to the mat. *See* JX-1 at Abstract, 2:53-56, Figs. 1-3; CX-177C at Q/A 256. The flexible elongated rods perform these functions by extending between the mat and the support element and by bending during assembly of the trampoline, thereby exerting a spring force on the mat. *See* JX-1 at 2:53-56, 3:16-20; CX-177C at Q/A 256, 258; Hr’g Tr. 352:4-353:9. As a result of the flexible elongated rods performing these functions in these ways, the mat “extends across the entire upper surface of the trampoline” and a “bouncing surface” is formed. *See* JX-1 at 2:56-59, 4:18-22; CX-177C at Q/A 260.

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Likewise, the leaf springs in the Vuly Thunder hold and support the mat above the frame and, when bent into place during assembly, apply tension to the mat. *See* CX-177C at Q/A 257; CX-159 at 1536. Because the leaf springs are flexible and elongated, they perform the supporting and tensioning functions by extending between the mat and the frame and bending upon assembly of the trampoline, thereby exerting a spring force. *See* CX-177C at Q/A 257, 259; CX-159 at 1539-40; Hr’g Tr. 435:17-436:6. As a result, the mat forms the entire upper surface of the trampoline for bouncing. *See* CX-177C at Q/A 261; CX-159 at 1536-37; Hr’g Tr. 436:3-6.

We therefore agree with the ALJ’s finding of infringement under the doctrine of equivalents, but modify his analysis to align more closely with what the Supreme Court in *Graver Tank & Manufacturing Co. v. Linde Air Products Co.*, 339 U.S. 605, 607 (1950) contemplated in setting forth the separate function, way, and result prongs of the tripartite test. Dr. Reinholtz’s testimony, as well as other record evidence, fully supports this analysis.

Gemalto S.A. v. HTC Corp., 754 F.3d 1364, 1374 (Fed. Cir. 2014) and *Texas Instruments Inc. v. Cypress Semiconductor Corp.*, 90 F.3d 1558, 1566 (Fed. Cir. 1996) require a party seeking to prove infringement under the doctrine of equivalents to provide “particularized testimony and linking arguments” as to equivalence between the claimed invention and the accused product on a limitation by limitation basis. An expert cannot simply provide “[g]eneralized testimony as to the *overall* similarity between the claims and the accused infringer’s product.” *See Tex. Instruments*, 90 F.3d at 1567 (emphasis added). Vuly argues that the ALJ’s determination is not supported by “particularized testimony and linking argument” to show the equivalents are insubstantially different. Vuly Pet. at 69. We disagree. Dr. Reinholtz

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provided testimony that was tailored to each claim limitation and discussed the function-way-result test as to the claim limitation at issue. *See, e.g., CX-177C at Q/A 256-61.*

Neither party petitioned for review of the ALJ's finding that the Vuly Thunder does not literally contain a "flexible elongated rod." We find that the ALJ erred in making this finding. Under the ALJ's broad construction, the weight of the evidence supports a finding that the Vuly Thunder literally contains a "flexible elongated rod."

As discussed above, the ALJ construed the term "flexible elongated rod" consistent with its plain and ordinary meaning and held that the limitation is "readily understood . . . as a rod that is both flexible and elongated." *ID at 37-38.* In construing the term, the ALJ declined to adopt Vuly's construction of "straight cylindrical bar" and expressly rejected the argument that the word "rod" is limited to specific shapes or cross-sections. *Id. at 38.*

But the ALJ's literal infringement analysis is inconsistent with his construction of the term. In analyzing infringement, the ALJ found that the plain and ordinary meaning of "flexible elongated rod" does not include leaf springs and cited the testimony of Dr. Ball for support. *Id. at 59.* Dr. Ball opined that "the Vuly Thunder leaf springs do not meet this limitation, because [his] understanding of the plain and ordinary meaning would not include leaf springs." *RX-200C at Q/A 201.* This testimony is conclusory and, moreover, conflicts with the ALJ's own finding of the term's plain and ordinary meaning. The ALJ also cited the testimony of Dr. Reinholtz. *See ID at 59.* We find that Dr. Reinholtz's testimony does not support the ALJ's conclusion. Although Dr. Reinholtz acknowledged that most people would call a leaf spring a flat bar, he testified that it was not incorrect to call a leaf spring a rod. *Hr'g Tr. 302:15-303:5.* This is consistent with his testimony that rods come in many different shapes, including non-circular cross-sections. *Id. at 246:1-247:14; see also CX-177C at Q/A 114.*

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The ALJ indicated that his finding did not depend simply on the shape of the Vuly leaf spring. ID at 59. He stated that, even if he accepted Dr. Reinholtz's testimony that a rod can have a non-circular cross-section, the Vuly Thunder leaf spring is still not a flexible elongated rod: "A leaf spring is not a slender resilient bar, but rather the evidence shows that each leaf spring has three layers of metal of varying length in a tapered design that are riveted and welded together." *Id.* at 59-60 (citing RX-200C at Q/A 115, 117; RX-145C; RPX-1.c). We find that the ALJ's conclusions do not rebut Springfree's showing of literal infringement. First, the ALJ's construction requiring flexibility does not require resilience. *See* Hr'g Tr. 244:14-18. Second, the parties agree, and the evidence shows, that a leaf spring is a bar. *See, e.g.,* Vuly Pet. at 68; CX-177C at Q/A 254; Hr'g Tr. 247:20-25, 302:15-303:5. Third, the ALJ did not cite to any record evidence showing that a rod cannot include a leaf spring with three layers of metal.

For these reasons, we find that the Vuly Thunder meets the "plurality of flexible elongated rods" limitation literally and under the doctrine of equivalents.

5. "retained at a first and second end by said first and second retaining means respectively" (claim 1)

As noted by Vuly, although the ALJ found infringement of claim 1, he did not make any findings as to whether the Vuly Thunder leaf springs are "retained at a first and second end by said first and second retaining means respectively" as required by claim 1. Vuly Pet. at 71. Vuly argues that this limitation is lacking in the Vuly Thunder but bases its arguments entirely on Vuly's proposed construction of "retained," *see id.* at 71-72, which the ALJ declined to adopt, ID at 41-42.

In view of our analysis of the "first retaining means" limitation, we conclude that the record does not support a finding that the Vuly Thunder meets the limitation of "retained at a first and second end by said first and second retaining means respectively."

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D. Validity

The Commission determined to review the ALJ's findings regarding validity with respect to claims 1 and 13.

1. Anticipation by U.S. Patent 5,336,135

The ALJ found that Vuly failed to prove that claim 1 is anticipated by U.S. Patent 5,336,135 ("the '135 patent"), but found that claim 13 is invalid as anticipated by the '135 patent. ID at 68-69, 71. In particular, the ALJ found that Vuly failed to prove by clear and convincing evidence that the '135 patent discloses the following limitations of claim 1: "first retaining means," "a plurality of first retaining means located around the mat perimeter," and "such that in use on a flat horizontal surface, said mat forms a horizontal plane." *Id.* at 68-71. With respect to claim 13, the ALJ found that the '135 patent discloses each and every limitation of that claim. *Id.* at 71-76. The ALJ also found that Springfree had waived an argument that the '135 patent is not an enabling disclosure because it did not raise enablement in its pre-hearing brief. *Id.* at 76.

To invalidate a patent by anticipation, a prior art reference must disclose each and every limitation of the claim, either expressly or inherently. *Atlas Powder Co. v. Ireco, Inc.*, 190 F.3d 1342, 1347 (Fed. Cir. 1999). To be considered anticipatory, a prior art reference must describe the applicant's "claimed invention sufficiently to have placed it in possession of a person of ordinary skill in the field of the invention." *Helifix Ltd. v. Blok-Lok, Ltd.*, 208 F.3d 1339, 1346 (Fed. Cir. 2000).

Vuly argues that the ALJ erred because he did not compare the structures disclosed in the '174 patent that correspond to the "first retaining means" (as identified by the ALJ) to the structures of the '135 patent to determine if they were equivalent. Vuly Pet. at 78. Vuly

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contends that the '135 patent discloses an equivalent structure, relying in large part on how the ALJ conducted his infringement analysis with respect to “first retaining means.” *Id.* at 78-80.

As the ALJ noted, Vuly admitted in its post-hearing brief that (1) the '135 patent does not disclose a pouch or pocket with an aperture that is associated with the flexible mat and (2) a horizontal bar and strut are not equivalent to a pouch or pocket. *See* ID at 69; Vuly's Post-Hearing Br.¹⁴ at 47-48). Thus, the ALJ did not err in finding that Vuly had failed to show that the '135 patent discloses an identical or equivalent structure to the “first retaining means” disclosed in the '174 patent. Despite bearing the burden of proof, Vuly did not articulate the arguments in its post-hearing brief that it now raises before the Commission. *Compare* Vuly Post-Hearing Br. at 47-48 *with* Vuly Pet. 78-80.

Even if we were to consider Vuly's untimely arguments, Vuly has not persuaded us by clear and convincing evidence that the '135 patent discloses a “first retaining means.” Vuly argues that the disclosed structures and the horizontal bar and strut in the '135 patent share a “striking similarity” in physical appearance and achieve an identical result. Vuly Pet. at 79-80. But Vuly does not address at all whether the horizontal bar and strut in the '135 patent perform the claimed function in substantially the same way as either of the disclosed structures.

We further find that the '135 patent discloses a “flexible mat” as the term is properly construed. The '135 patent discloses a series of trampolines, each of which comprises a trampoline pad that is “situated centrally in the frame 16” and “held in place by springs 20 distributed around the pad 18 between the pad 18 and the frame 16, except along the side 16d.” RX-8 at 1:49-53, 1:65-2:1; *see also* RX-195C at Q/A 43.

¹⁴ Respondent Vuly's Post-Hearing Brief.

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We find no error in, and thus adopt, the ALJ's remaining findings regarding the '135 patent. For these reasons, we affirm the ALJ's finding that the '135 patent does not anticipate claim 1 of the '174 patent; we also affirm the ALJ's finding that the '135 patent anticipates claim 13 of the '174 patent.

2. Anticipation by German Patent Application No. 195 43 662

The ALJ found that Vuly failed to prove by clear and convincing evidence that claims 1 and 13 are anticipated by German Patent Application No. 195 43 662 ("the '662 publication"). ID at 77, 79. Specifically, the ALJ found that the '662 publication does not disclose the following limitations: "first retaining means" and "flexible elongated rod." *Id.* at 77.

We find no error in the ALJ's finding that the '662 publication does not anticipate claim 1 or 13 of the '174 patent and therefore adopt the ALJ's findings on this issue.

3. Obviousness Based on U.S. Patent 5,336,135

The ALJ did not make any findings with respect to whether claim 13 is obvious based on the '135 patent. ID at 79. Instead the ALJ determined that he did not need to address obviousness because he found that claim 13 is anticipated by the '135 patent. *Id.*

Vuly argues that, if the Commission decides to review or modify the ALJ's constructions, claim 13 is nonetheless obvious for the reasons stated in the ID with respect to anticipation of claim 13. *See* Vuly Pet. at 83-84. Vuly's argument regarding obviousness is contrary to law and the Commission rules. Vuly cannot simply rely on reasons cited by the ALJ for anticipation of claim 13 to argue obviousness of the claim. "The tests for anticipation and obviousness are different." *Cohesive Techs. Inc. v. Waters Corp.*, 543 F.3d 1351, 1364 (Fed. Cir. 2008). Vuly's two-sentence argument on obviousness also fails to specify the grounds upon which review is sought and improperly incorporates statements, issues, or arguments by reference. *See* 19 C.F.R. §§ 210.43(b)(1), (2).

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Having found claim 13 invalid as anticipated by the '135 patent, we do not reach the issue of obviousness. *See Beloit Corp. v. Valmet Oy*, 742 F.2d 1421, 1422-23 (Fed. Cir. 1984).

4. Enablement

The ALJ found that Vuly failed to prove by clear and convincing evidence that the '174 patent is invalid “due to lack of enablement of the ball-and-socket joint found in Springfree’s domestic industry products.” ID at 81.

Vuly argues that, if the full scope of the claims extends to cover ball-and-socket designs, then claims 1 and 13 are invalid for not enabling a person skilled in the art to make and use the full scope of the claims. Vuly Pet. at 87-88. Vuly contends that, if the claims are construed broadly, a person of ordinary skill in the art could not practice the claimed invention without undue experimentation “because the '174 patent did not enable a broad ‘first retaining means’ and any possible way of ‘securing’ the rods to the mat. *Id.* at 87. Vuly points to the fact that Dr. Alexander himself tried several iterations of the “first retaining means” over a period of four years after filing the patent application to which the '174 patent claims priority before developing a trampoline with a ball-and-socket design that was “safe for use.” *Id.* at 88-91, 96-99.

A patent specification must enable one of ordinary skill in the art to make and use the claimed invention without undue experimentation. 35 U.S.C. § 112, ¶ 1;¹⁵ *Genentech, Inc. v. Novo Nordisk A/S*, 108 F.3d 1361, 1365 (Fed. Cir. 1997). Enablement is ultimately a question of law, but is based on underlying factual findings. *Bruning v. Hirose*, 161 F.3d 681, 686 (Fed. Cir.

¹⁵ Although this provision has been amended and is now codified as 35 U.S.C. § 112(a), the prior version containing ¶ 1 applies here because the '174 patent was filed before Sept. 16, 2012. *See Leahy-Smith America Invents Act*, Pub. L. No. 112-29 § 4(e), 125 Stat. 284.

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1998). Enablement “is not precluded even if some experimentation is necessary, although the amount of experimentation needed must not be unduly excessive.” *Id.* “Enablement does not require an inventor to meet lofty standards for success in the commercial marketplace.” *CFMT, Inc. v. YieldUp Int'l Corp.*, 349 F.3d 1333, 1338 (Fed. Cir. 2003). “Title 35 does not require that a patent disclosure enable one of ordinary skill in the art to make and use a perfected, commercially viable embodiment absent a claim limitation to that effect.” *Id.* “The enablement requirement is met if the description enables any mode of making and using the claimed invention.” *Engel Indus., Inc. v. Lockformer Co.*, 946 F.2d 1528, 1533 (Fed. Cir. 1991).

The record amply supports the ALJ’s conclusion that the ’174 patent is not invalid for lack of enablement. As the ALJ noted, the record evidence shows that ball-and-socket joints would have been known to those of ordinary skill. *See ID* at 80. During prosecution of the application leading to the ’211 patent, the Patent Office noted that such joints are “notoriously old and well known as a connection means in exercise device[s].” RX-69 at 83. Dr. Alexander also admitted, in response to the Patent Office’s rejection, that he was “well familiar with . . . ball and socket type joints.” *Id.* at 73. Dr. Reinholtz also testified that ball-and-socket joints for connecting mechanical components to each other were “very well known” on the filing date of the application for the ’174 patent. CX-194C at Q/A 243.

Moreover, the record supports the ALJ’s finding that implementation of the ball-and-socket joint was a “matter of routine experimentation.” *See ID* at 80-81. Even Dr. Ball acknowledged that building the “first retaining means” claimed by the ’174 patent in ways other than a rod and a pocket would take “not very much” experimentation:

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JUDGE PENDER: . . . What—is that particular embodiment supported by the specification? I mean, is it—is it enabled, so to speak?

THE WITNESS: I think you can build it the way the specifications [sic] tell you to, with the rod and in a pocket.

JUDGE PENDER: Okay. Could you build it any other way?

THE WITNESS: Yeah, I guess you could, knowing—

JUDGE PENDER: Would it take experimentation?

THE WITNESS: Probably not very much. I mean, I list a bunch of different options under that first retaining—before it was first, you know, means plus function, that the claim construction was broad. I think I listed hooks, duct tape, clasps. There’s all kinds of ways you could secure the rods to the mat in a way that would apply tension.

Hr’g Tr. 529:5-22; *see also* CX-194C at Q/A 243.

Springfree argues that Dr. Alexander’s statements to the Patent Office distinguishing between the “first retaining means” disclosed in the ’174 patent and the ball-and-socket design pertain to commercialization. *See* Springfree Pet. Resp. at 49. We agree with Springfree. We find that the benefits Dr. Alexander attributes to the ball-and-socket design over other alternatives—easier assembly, elimination of cracking due to multiple users jumping on the trampoline, and reduced wear on the mat—all relate to an improved commercial product. *See* RX-69 at 72-75. These are not benefits required by the asserted claims.

For these reasons, we conclude that Vuly failed to satisfy its burden to show that the ’174 patent is not enabled by clear and convincing evidence.

E. Domestic Industry

Sections 337(a)(2) and (3) set forth the requirements for determining the existence of a domestic industry:

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(2) Subparagraphs (B), (C), (D), and (E) of paragraph (1) apply only if an industry in the United States, relating to the articles protected by the patent, copyright, trademark, mask work, or design concerned, exists or is in the process of being established.

(3) For purposes of paragraph (2), an industry in the United States shall be considered to exist if there is in the United States, with respect to the articles protected by the patent, copyright, trademark, mask work, or design concerned—

(A) significant investment in plant and equipment;

(B) significant employment of labor or capital; or

(C) substantial investment in its exploitation, including engineering, research and development, or licensing.

19 U.S.C. §§ 1337(a)(2), (3). Although not expressly required under the statute, the Commission has found it useful to conceptually divide the domestic industry requirement into a technical prong and an economic prong. *See Certain Stringed Musical Instruments and Components Thereof*, Inv. No. 337-TA-586, USITC Pub. No. 4120, Comm'n Op. at 12-14 (May 16, 2008).

1. Technical Prong

The ALJ found that Springfree failed to meet the technical prong of the domestic industry requirement with respect to claims 1 and 13. ID at 66-67. The Commission determined to review these findings.

On review, we reverse the ALJ's finding that Springfree did not satisfy the technical prong of the domestic industry requirement for both claims 1 and 13.

a) Claim 1

The ALJ found that the Springfree products fail to meet the technical prong of the domestic industry requirement with respect to claim 1 of the '174 patent based on his finding of disclaimer of ball-and-socket arrangements. ID at 66-67. Specifically, the ALJ found that the Springfree products use the ball-and-socket design of the '211 patent, which issued from the

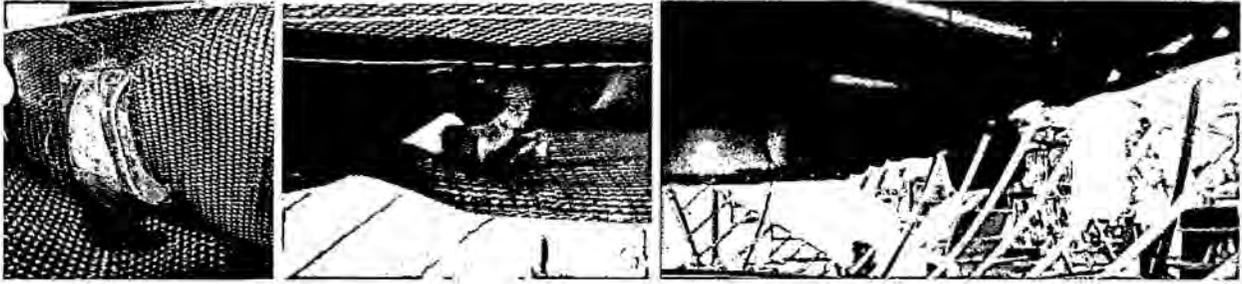
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'572 application discussed above, as a means to retain a first end of a flexible elongated rod. *Id.* at 66. The ALJ stated that, but for the disclaimer, he would have held that the Springfree products have a “first retaining means” based on the same reasoning he found the Vuly Thunder has a “first retaining means.” *Id.* at 66 n.2. As to the other limitations of claim 1, the ALJ found that Springfree’s expert, Dr. Reinholtz, testified in detail that Springfree’s products practice claim 1 and that Vuly challenged Dr. Reinholtz’s testimony only with respect to the “first retaining means” limitation. *Id.* at 64.

In view of our reversal of the ALJ’s finding of prosecution history disclaimer, we conclude that the ALJ erred in finding that Springfree’s products do not practice claim 1. We must therefore conduct a literal infringement analysis and determine whether the relevant structure in the accused product performs the identical function recited in the claim and is identical or equivalent to the corresponding structure in the specification. *See Applied Med. Res.*, 448 F.3d at 1333.

The record shows the Springfree products literally meet the “first retaining means” limitation. Springfree’s products have fabric pockets on the underside of the mat with plastic pieces inserted into each pocket. CPX-4.b; CX-172 at 1521; CX-177C at Q/A 339. The upper end of a rod is equipped with a round structure, which is inserted into the plastic piece in the fabric pocket. CPX-4.a; CX-172 at 1523-24; *see* CX-177C at Q/A 349. The fabric pocket, the plastic piece in the fabric pocket, and the round structure at the end of the rod perform the identical claimed function of retaining a first end of a flexible elongated rod. *See* CX-172 at 1523-24. We find that these components are not identical in structure to either of the structures disclosed in the '174 patent. *See* JX-1 at Fig. 4.

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CX-172 at 1521, 1523-24.

We find, however, that the Springfree structures are equivalent to the disclosed pocket and end-piece. As discussed above in the infringement context, the disclosed end-piece is inserted into and retained within the pouch and the end-piece retains the end of the rod within the pouch. JX-1 at 2:65-66, 3:6-11. The Springfree structures retain a first end of a flexible elongated rod in substantially the same way. The plastic piece is inserted into and retained within the fabric pocket, and the plastic piece retains the end of the rod within the fabric pocket. CX-172 at 1521-24; CPX-4.a & 4.b. The disclosed structures and the Springfree structures accomplish substantially the same result in connecting the top end of the rod with the underside of the mat, tensioning the flexible mat to form a bouncing surface. *See* JX-1 at 2:53-59; CX-172 at 1524-26.

Vuly contends that the statements that Dr. Alexander made to the Patent Office are “probative, credible, non-litigation-induced evidence” that the ball-and-socket design used by the Springfree products is “structurally different” than the “first retaining means” of the ’174 patent. Vuly Pet. at 75. Vuly argues that Dr. Alexander described differences such as the ability of the ball-and-socket design “to pivot, to avoid cracking, ease of assembly, and the safety of the more secure way of ‘securing’ the rods to the mat.” *Id.* at 19. Vuly contends that these differences foreclose a finding of equivalents both under the “way”/“result” standard and the “known interchangeability test.” *Id.* We disagree.

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Dr. Alexander told the Patent Office that the pockets disclosed in the '174 patent are “structurally different” than a ball-and-socket arrangement and that “if a [ball-and-socket] fitting as claimed can be placed ‘within a pocket,’ then it is not the same thing as a pocket.” RX-69 at 62-63. As explained above, literal infringement of a means-plus-function requires “equivalent structure”; it does not require structures to be “structurally equivalent.” *IMS Tech.*, 206 F.3d at 1436 & n.3. Also, the fact that the ball-and-socket arrangement is not the same as a pocket does not preclude a finding of literal infringement because identity of structure is not required. *See Odetics*, 185 F.3d at 1264. Furthermore, the benefits that the ball-and-socket design offers over the structures disclosed in the '174 patent—ease of assembly and elimination of cracked junctures—do not rise to the level of substantially different results. Although a ball-and-socket design may make it easier to connect the rod to the mat and to maintain the connection under extreme conditions, the result is still a connection between the rod and the mat, albeit an improved one.

Vuly does not contest that the Springfree trampolines satisfy the remaining limitations of claim 1. ID at 64; *see also* Vuly Resp. at 10. We find that, with respect to the “flexible mat” limitation, the record supports a finding that the Springfree products include a “flexible mat” under that term’s plain and ordinary meaning because Dr. Reinholtz testified that the Springfree products practice claim 1 using a narrower construction of the term. *See, e.g.*, CX-177C at Q/A 340-41.

We therefore reverse the ALJ’s finding that Springfree’s products do not practice claim 1 of the '174 patent.

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b) Claim 13

The ALJ found that, based on Dr. Reinholtz's testimony, the Springfree products practice claim 13 of the '174 patent. ID at 67. We agree that the record evidence supports the ALJ's finding. See CX-177C at Q/A 382-98.

However, the ALJ concluded that the Springfree products do not meet the technical prong of the domestic industry requirement with regard to claim 13 because he found claim 13 to be invalid as anticipated by the '135 patent. ID at 67. Although not challenged by either party, the ALJ's coupling of the technical prong of the domestic industry requirement with invalidity is contrary to Commission practice. See *Certain Silicon Microphone Packages and Products Containing the Same*, Inv. No. 337-TA-695, USITC Pub. No. 4293, Notice at 3 (Jan. 21, 2011) ("The Commission has determined to review and vacate the ID's conclusion that the technical prong of the domestic industry requirement, 19 U.S.C. § 1337(a)(2) & (a)(3), is not met where all the asserted patent claims are found invalid. It is Commission practice not to couple an analysis of domestic industry to a validity analysis." (citing *Certain Removable Electronic Cards and Electronic Card Reader Devices and Products Containing Same*, Inv. No. 337-TA-396, USITC Pub. No. 3123, Comm'n Op. at 17 (Aug. 13, 1998); *Certain Encapsulated Integrated Circuit Devices and Products Containing Same*, Inv. No. 337-TA-501, Initial Determination at 104-05 (Nov. 22, 2005) (unreviewed) ("A determination that a patent is invalid does not preclude the finding that the [complainant] has met the technical prong of domestic industry . . .")))).

The ALJ cites in support of his finding *Certain Ground Fault Circuit Interrupters and Products Containing Same*, Inv. No. 337-TA-739 ("*Ground Fault Circuit Interrupters*"), Comm'n Op. (June 8, 2012). ID at 67. But that decision does not dictate a finding that a complainant's products cannot meet the technical prong of domestic industry requirement where

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the claim that is practiced by the products is invalid. In that investigation, the Commission found that the alleged domestic industry products practiced three asserted claims, and made no finding as to whether the two claims that were found invalid met the technical prong of the domestic industry requirement. *See Ground Fault Circuit Interrupters*, Comm'n Op. at 71-74. The Commission merely concluded that there was only one "valid patent claim proven to be practiced by [the complainant's] products." *Id.* at 73-74. Thus, the prevailing rule is that a complainant need only show that it practices one claim of an asserted patent (not necessarily an asserted claim) to meet the technical prong of the domestic industry requirement. *See Certain Microsphere Adhesives, Process for Making Same, and Products Containing Same, Including Self-Stick Repositionable Notes*, Inv. No. 337-TA-366, USITC Pub. No. 2949, Comm'n Op. at 16 (Jan. 16, 1996), *aff'd sub nom. Minn. Mining & Mfg. Co. v. Int'l Trade Comm'n*, 91 F.3d 171 (Fed. Cir. 1996).

The ALJ therefore erred in finding that the invalidity of claim 13 is a basis for concluding that Springfree failed to meet the technical prong of the domestic industry requirement. We reverse and find that the Springfree products satisfy the technical prong of the domestic industry requirement with respect to claim 13 based on the ALJ's findings that the Springfree products practice claim 13.

2. Economic Prong

The ALJ found that Springfree failed to satisfy the economic prong of the domestic industry requirement. *Id.* at 99-105. With respect to Springfree's investments in labor and capital, the ALJ considered Springfree's arguments that its domestic industry includes installation, customer service and support, repair, and warranty and return services. *Id.* at 99-101. The ALJ found no credible evidence to support Springfree's arguments that installation services are significant because they are critical to safety. *Id.* at 99-100. The ALJ cited

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“unambiguous evidence” that was contrary to Springfree’s claim regarding the importance of safety of its installation services: (1) Springfree sold some trampolines over the internet without requiring installation; (2) Springfree provided an installation manual to customers; and (3) the stated purpose of the ’174 patent was to make the trampoline easy to assemble. *Id.* at 99. The ALJ further observed that Springfree had not introduced evidence of installation injuries in support of its contentions regarding the importance of purchased installation services apart from one anecdotal account. *Id.* at 99-100. The ALJ stated that he could give Springfree’s testimony regarding the importance of installation services “no meaningful weight” because it lacked credibility. *Id.* at 100. The ALJ therefore concluded that he could not find the installation services claimed by Springfree were qualitatively significant for the purposes of establishing a domestic industry in this investigation. *Id.*

The ALJ also examined the quantitative evidence and, even accepting the inclusion of Springfree’s installation services in the calculation, he found that there was insufficient evidence to determine whether the labor expenses were significant. *Id.* at 100-01. Specifically, the ALJ noted that the labor cost of installation [] of covered trampolines in 2013 was equal to [] of Springfree’s 2013 revenues on the covered products. *Id.* To this amount the ALJ added the labor costs in 2013 of other relevant services (such as returns and repairs) in the amount of []. *Id.* at 100. The ALJ stated that he could not find the cost of [] significant without any credible explanation from Springfree as to why this number was significant or how [] is significant in the context of this industry; he also stated that he could not find the aggregate cost [] to be significant absent some credible evidence of how such costs could possibly be quantitatively significant. *Id.* at 100-01. Thus, the ALJ

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concluded that Springfree had failed to provide evidence to meet its burden of proof. *See id.*

Specifically, the ALJ stated:

I find nothing in the Record to explain why [] of Springfree's revenue base is significant or even what effect it would have if this sum were absent from Springfree's revenue base. Instead, all I find is an assumption that the [] when added to the [] becomes [] and thus significant when added to plant and equipment costs. However, I find specifically, that by and in itself, [], within the context of this investigation, is not a significant expense without a credible explanation of why it is significant, whether within an industry or generally. Since such credible proof is absent, I cannot find the costs to be quantitatively significant. *Id.*

As to Springfree's investments in plant and equipment, the ALJ found that he could not conclude that Springfree, beyond presenting arguments and conclusory testimony, established quantitatively or qualitatively a domestic industry by the preponderance of the evidence for these costs. *Id.* at 101-05. In reviewing the evidence, the ALJ noted that he found "mostly conclusions and estimates, not fully detailed explanations as to why a certain amount of hours or one expense or another expense should be allocated to the domestic industry." *Id.* at 103. Consistent with prior Commission decisions, the ALJ excluded Springfree's activities related to sales and marketing. *See id.* at 102-03. Even including other expenses that the ALJ found questionable, he found that there was no credible proof to substantiate Springfree's allocations nor credible testimony to explain how Springfree's claimed investment was significant in terms of the industry or otherwise. *Id.* at 104-05. Thus, he could not conclude that the amount was significant enough to find a domestic industry. *Id.* The Commission determined to review.

On review, we affirm the ALJ's finding that Springfree has not demonstrated a domestic industry under 19 U.S.C. § 1337(a)(3)(A) or (B).¹⁶ The Commission supports the ALJ's

¹⁶ We affirm based on the record evidence and contentions preserved before the ALJ.

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determination that there was a lack of credible evidence presented by Springfree and that Springfree failed to meet its burden of proof in establishing the significance of the amount of its investments in terms of this industry or in general.

III. CONCLUSION

We affirm the ALJ's determination of no violation. In particular, we construe "flexible mat" in the first instance, modify the ALJ's construction of "first retaining means," and affirm, but on modified grounds, the ALJ's construction of "flexible elongated rod." We affirm, but on modified grounds, the ALJ's findings that claim 13 is infringed and practiced by Springfree's products, but invalid as anticipated by the prior art. We also affirm, on modified grounds, the ALJ's findings that claim 1 is not invalid as anticipated by the prior art and that claims 1 and 13 are not invalid due to lack of enablement. We reverse the ALJ's findings that claim 1 is infringed and not practiced by Springfree's products and that Springfree did not satisfy the technical prong of the domestic industry requirement as to claims 1 and 13. We affirm the ALJ's finding that Springfree did not satisfy the economic prong of the domestic industry requirement. We do not reach the issue of whether claim 13 is obvious. We adopt all findings and conclusions in the final ID that are not inconsistent with this opinion.

By order of the Commission.



Lisa R. Barton
Secretary to the Commission

Issued: May 1, 2015

**CERTAIN SOFT-EDGED TRAMPOLINES AND COMPONENTS
THEREOF**

337-TA-908

CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the attached **COMMISSION OPINION** has been served upon the following parties as indicated, on **May 1, 2015**.



Lisa R. Barton, Secretary
U.S. International Trade Commission
500 E Street, SW
Washington, DC 20436

**On Behalf of Complainants Springfree Trampoline,
Inc., Springfree Trampoline USA Inc., and Spring
Free Limited Partnership:**

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On Behalf of Respondent Vuly Trampolines Pty. Ltd.:

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901 New York Avenue, NW
Washington, DC 20001-4413

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- Via Express Delivery
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UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

In the Matter of

**CERTAIN SOFT-EDGED
TRAMPOLINES AND COMPONENTS
THEREOF**

Inv. No. 337-TA-908

**NOTICE OF COMMISSION DETERMINATION TO REVIEW
THE FINAL INITIAL DETERMINATION IN PART;
SCHEDULE FOR FILING WRITTEN SUBMISSIONS ON THE ISSUES
UNDER REVIEW AND ON REMEDY, PUBLIC INTEREST, AND BONDING**

AGENCY: U.S. International Trade Commission.

ACTION: Notice.

SUMMARY: Notice is hereby given that the U.S. International Trade Commission has determined to review-in-part the final initial determination issued by the presiding administrative law judge ("ALJ") in the above-captioned investigation on December 5, 2014. The Commission requests certain briefing from the parties on the issues under review, as indicated in this notice. The Commission also requests briefing from the parties and interested persons on the issues of remedy, the public interest, and bonding.

FOR FURTHER INFORMATION CONTACT: Lucy Grace D. Noyola, Office of the General Counsel, U.S. International Trade Commission, 500 E Street, S.W., Washington, D.C. 20436, telephone 202-205-3438. Copies of non-confidential documents filed in connection with this investigation are or will be available for inspection during official business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary, U.S. International Trade Commission, 500 E Street, S.W., Washington, D.C. 20436, telephone 202-205-2000. General information concerning the Commission may also be obtained by accessing its Internet server (<http://www.usitc.gov>). The public record for this investigation may be viewed on the Commission's electronic docket (EDIS) at <http://edis.usitc.gov>. Hearing-impaired persons are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on 202-205-1810.

SUPPLEMENTARY INFORMATION: The Commission instituted this investigation on January 30, 2014, based on a complaint filed by of Springfree Trampoline, Inc. of Markham, Canada, Springfree Trampoline USA Inc. of Markham, Canada, and Spring Free Limited Partnership of Markham, Canada (collectively, "Springfree"). 79 Fed. Reg. 4956, 4956 (Jan. 30, 2014). The complaint alleges violations of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, in the importation, sale for importation, or sale within the United States after importation of certain soft-edged trampolines and components thereof by reason of infringement

of one or more of claims 1 and 13 of U.S. Patent No. 6,319,174 (the “’174 patent”). *Id.* The notice of investigation names Vuly Trampolines Pty. Ltd. of Brisbane, Australia (“Vuly”) as the sole respondent. *Id.* at 4957. The Office of Unfair Import Investigations did not participate in the investigation. *Id.*

On December 5, 2014, the ALJ issued a final ID finding no violation of section 337. The ALJ found that Vuly’s accused products infringe claims 1 and 13 of the ’174 patent. The ALJ found that Springfree’s alleged domestic industry products practice claim 13, but found that Springfree failed to satisfy the economic prong of the domestic industry requirement. The ALJ further found that claim 1 was not shown to be invalid, but found that claim 13 is invalid as anticipated by the prior art. On December 18, 2014, the ALJ issued a recommended determination (“RD”) on remedy and bonding. The ALJ recommended that, if the Commission finds a section 337 violation, a limited exclusion order should issue, with an exception for replacement, repair, and warranty parts. The ALJ recommended that the bond rate be set at zero percent.

On December 22, 2014, Springfree filed a petition for review of the ALJ’s construction of the claim term “first retaining means” in claim 1 and the ALJ’s findings with respect to domestic industry and anticipation of claim 13. The same day, Vuly filed a contingent petition for review of nearly all the remaining determinations by the ALJ in the event the Commission determines to review the ID. On January 2, 2015, the parties filed responses to the petitions. The Commission did not receive any post-RD public interest comments from the parties or the public.

Having examined the record of this investigation, including the ID, the petitions for review, and the responses thereto, the Commission has determined to review the ALJ’s determination of no violation. Specifically, the Commission has determined to review (1) the ALJ’s construction of “flexible mat,” “first retaining means,” and “flexible elongated rod”; (2) the ALJ’s findings of infringement of claim 1 and 13; (3) the ALJ’s findings regarding the technical prong of the domestic industry requirement with respect to claims 1 and 13; (4) the ALJ’s findings regarding validity with respect to claims 1 and 13; and (5) the ALJ’s finding regarding the economic prong of the domestic industry requirement.

The parties are requested to brief their positions on the issues under review with reference to the applicable law and the existing evidentiary record. In connection with its review, the Commission requests responses to the following questions only.

1. What is the plain and ordinary meaning of “flexible mat”? Please discuss whether this limitation, based on its plain and ordinary meaning, is met by the accused products, the alleged domestic industry products, and the prior art.
2. Please identify the structures disclosed in the ’174 patent corresponding to the claimed function of the “first retaining means” limitation. Discuss the relevance, if any, of *Micro Chemical, Inc. v. Great Plains Chemical Co.*, 194 F.3d 1250 (Fed. Cir. 1999) and *Ishida Co. v. Taylor*, 221 F.3d 1310 (Fed. Cir. 2000). Please discuss how your response affects the analyses with respect to infringement, the

technical prong of the domestic industry requirement, and validity.

3. What evidence in the record shows that Springfree's alleged domestic industry investment or employment activities are significant in the context of the industry in question, Springfree's relative size, the article of commerce, and the realities of the marketplace?
4. With respect to Springfree's alleged domestic industry products, how do Springfree's domestic industry investments in plant and equipment and/or employment of labor and capital compare to its foreign investments and/or employment? What share of the overall cost of manufacturing and installation of a Springfree trampoline is accounted for by installation service costs in the United States? Does this information support a finding that Springfree's domestic activities are significant?

In connection with the final disposition of this investigation, the Commission may (1) issue an order that could result in the exclusion of the subject articles from entry into the United States, and/or (2) issue one or more cease and desist orders that could result in the respondent(s) being required to cease and desist from engaging in unfair acts in the importation and sale of such articles. Accordingly, the Commission is interested in receiving written submissions that address the form of remedy, if any, that should be ordered. If a party seeks exclusion of an article from entry into the United States for purposes other than entry for consumption, the party should so indicate and provide information establishing that activities involving other types of entry either are adversely affecting it or likely to do so. For background, see *Certain Devices for Connecting Computers via Telephone Lines*, Inv. No. 337-TA-360, USITC Pub. No. 2843 (December 1994) (Commission Opinion).

If the Commission contemplates some form of remedy, it must consider the effects of that remedy upon the public interest. The factors the Commission will consider include the effect that an exclusion order and/or cease and desist orders would have on (1) the public health and welfare, (2) competitive conditions in the U.S. economy, (3) U.S. production of articles that are like or directly competitive with those that are subject to investigation, and (4) U.S. consumers. The Commission is therefore interested in receiving written submissions that address the aforementioned public interest factors in the context of this investigation.

If the Commission orders some form of remedy, the U.S. Trade Representative, as delegated by the President, has 60 days to approve or disapprove the Commission's action. See Presidential Memorandum of July 21, 2005, 70 Fed. Reg. 43251 (July 26, 2005). During this period, the subject articles would be entitled to enter the United States under bond, in an amount determined by the Commission and prescribed by the Secretary of the Treasury. The Commission is therefore interested in receiving submissions concerning the amount of the bond that should be imposed if a remedy is ordered.

WRITTEN SUBMISSIONS: The parties to the investigation are requested to file written submissions on all of the issues identified in this notice. Parties to the investigation, interested government agencies, and any other interested parties are encouraged to file written submissions on the issues of remedy, the public interest, and bonding. Such submissions should address the

recommended determination by the ALJ on remedy and bonding. Complainant Springfree is also requested to submit proposed remedial orders for the Commission's consideration. Springfree is also requested to state the date that the asserted patent expires and the HTSUS numbers under which the accused products are imported, and provide identification information for all known importers of the subject articles. Initial written submissions and proposed remedial orders must be filed no later than close of business on Thursday, February 19, 2015. Initial written submissions by the parties shall be no more than 40 pages, excluding any exhibits. Reply submissions must be filed no later than the close of business on Monday, March 2, 2015. Reply submissions by the parties shall be no more than 20 pages, excluding any exhibits. No further submissions on these issues will be permitted unless otherwise ordered by the Commission. Persons filing written submissions must file the original document electronically on or before the deadlines stated above and submit 8 true paper copies to the Office of the Secretary by noon the next day pursuant to section 210.4(f) of the Commission's Rules of Practice and Procedure (19 C.F.R. 210.4(f)). Submissions should refer to the investigation number ("Inv. No. 337-TA-908") in a prominent place on the cover page and/or the first page. (See Handbook for Electronic Filing Procedures, http://www.usitc.gov/secretary/fed_reg_notices/rules/handbook_on_electronic_filing.pdf). Persons with questions regarding filing should contact the Secretary (202-205-2000).

Any person desiring to submit a document to the Commission in confidence must request confidential treatment. All such requests should be directed to the Secretary to the Commission and must include a full statement of the reasons why the Commission should grant such treatment. See 19 C.F.R. § 201.6. Documents for which confidential treatment by the Commission is properly sought will be treated accordingly. A redacted non-confidential version of the document must also be filed simultaneously with the any confidential filing. All nonconfidential written submissions will be available for public inspection at the Office of the Secretary and on EDIS.

The authority for the Commission's determination is contained in section 337 of the Tariff Act of 1930, as amended (19 U.S.C. § 1337), and in Part 210 of the Commission's Rules of Practice and Procedure (19 C.F.R. Part 210).

By order of the Commission.



Lisa R. Barton
Secretary to the Commission

Issued: February 5, 2015

**CERTAIN SOFT-EDGED TRAMPOLINES AND COMPONENTS
THEREOF**

337-TA-908

CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the attached **COMMISSION NOTICE** has been served by hand upon the following parties as indicated, on **February 5, 2015**.



Lisa R. Barton, Secretary
U.S. International Trade Commission
500 E Street, SW
Washington, DC 20436

**On Behalf of Complainants Springfree Trampoline,
Inc., Springfree Trampoline USA Inc., and Spring
Free Limited Partnership:**

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On Behalf of Respondent Vuly Trampolines Pty. Ltd.:

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Washington, DC 20001-4413

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**UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.**

In the Matter of

**CERTAIN SOFT-EDGED TRAMPOLINES
AND COMPONENTS THEREOF**

)
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) **Investigation No. 337-TA-908**
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**INITIAL DETERMINATION ON VIOLATION OF SECTION 337 AND
RECOMMENDED DETERMINATION ON REMEDY AND BOND**

Administrative Law Judge Thomas B. Pender
(December 5, 2014)

Pursuant to the Notice of Investigation and Rule 210.42(a) of the Rules of Practice and Procedure of the United States International Trade Commission, this is my Initial Determination in the matter of Certain Soft-Edged Trampolines and Components Thereof, Investigation No. 337-TA-908.

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Table of Abbreviations

CDX	Complainant's Demonstrative Exhibit
CIB	Complainant's Initial Post-Hearing Brief
CRB	Complainant's Reply Post-Hearing Brief
CX	Complainant's Exhibit
Dep.	Deposition
JX	Joint Exhibit
RDX	Respondent's Demonstrative Exhibit
RIB	Respondent's Initial Post-Hearing Brief
RRB	Respondent's Reply Post-Hearing Brief
RX	Respondent's Exhibit
Tr.	Transcript
DWS	Direct Witness Statement (Including Revised Direct Witness Statements)
RWS	Rebuttal Witness Statement

I. INTRODUCTION

By publication of a notice in the Federal Register on January 30, 2014, the

U.S. International Trade Commission ordered that:

Pursuant to subsection (b) of section 337 of the Tariff Act of 1930, as amended, an investigation be instituted to determine whether there is a violation of subsection (a)(1)(B) of section 337 in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain soft-edged trampolines and components thereof by reason of infringement of one or more of claims 1 and 13 of the '174 patent, and whether an industry in the United States exists as required by subsection (a)(2) of section 337.

79 F.R. 4956 (January 30, 2014).

A. The Parties

Complainant Springfree Trampoline, Inc. is a corporation organized under the laws of Canada. (CX-179C (Direct Testimony of Steven Holmes) at Q/A 5.) Springfree Trampoline, Inc. is the exclusive licensee of the '174 patent. (*Id.* at Q/A 17.) Complainant Spring Free Limited Partnership is a partnership organized under the laws of Canada and has sub-licensed the right to practice the '174 patent from Springfree Trampoline, Inc. (*Id.* at Q/A 6, 15.) Complainant Springfree Trampoline USA Inc. is a corporation organized under the laws of Canada, and is the general partner to Spring Free Limited Partnership. (*Id.* at Q/A 7.) The three Springfree Complainants share a principal place of business at 151 Whitehall Drive, Unit 2, Markham, Ontario L3R 9T1 Canada. (*See, e.g.,* JX-10C at 14:24-15:11, 20:16-23.) Steven D. Holmes is the President and Chief Executive Officer of Springfree. (CX-179C at Q/A 1, 2.) Springfree is a pioneer in the global market for trampolines. (*See, e.g., id.* at Q/A 8, 9.)

Respondent Vuly Trampolines Pty. Ltd. is an Australian company with a principal place of business at 95 Ingleston Road, Wakerly, Brisbane, Queensland 4154, Australia. (Vuly Response to Complaint at ¶ 2.3.) Springfree's principal place of business at 151 Whitehall Drive, Unit 2, Markham, Ontario L3R 9T1, Canada. (*Id.* at ¶ 2.1.)

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B. Products at Issue

The products Springfree accuses of infringing claims 1 and 13 of the '174 patent are trampolines marketed and sold under the name "Vuly Thunder." The Vuly Thunder trampoline comes in three different sizes—medium, large, and extra-large. (See RX-194C at Q/A 97; CX-158 at 1924.) The three sizes of the Vuly Thunder are equivalent for purposes of this Investigation. (See RX-194C at Q/A 97-101; JX-9C at 195:21-196:13; CX-177C (Reinholtz DWS) at Q/A 145-147.) The Vuly Thunder trampoline is shown in Exhibit CX-158 at 1924.

The products Springfree asserts practice claims 1 and 13 of the '174 patent are trampolines sold under the names: Springfree R54 Compact Round Trampoline ("the R54 Trampoline"); R79 Medium Round Trampoline; O77 Medium Oval Trampoline; O92 Large Oval Trampoline; S113 Large Square Trampoline ("the S113 Trampoline"); and S155 Jumbo Square Trampoline (collectively, "Springfree DI Products"). Springfree asserts the R54 and S113 Trampolines are representative of all of Springfree's Domestic Industry Products and that the other models do not differ from the R54 and S113 Trampolines in how they practice the asserted claims of the '174 Patent.

II. JURISDICTION

In order to have the power to decide a case, a court or agency must have both subject matter jurisdiction and jurisdiction over either the parties or the property involved. 19 U.S.C. § 1337; *Certain Steel Rod Treating Apparatus and Components Thereof*, Inv. No. 337-TA-97, Commission Memorandum Opinion, 215 U.S.P.Q. 229, 231 (1981).

A. Subject Matter Jurisdiction

Section 337 confers subject matter jurisdiction on the International Trade Commission to investigate, and if appropriate, to provide a remedy for, unfair acts and unfair methods of competition in the importation, the sale for importation, or the sale after importation of articles

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into the United States. (See 19 U.S.C. §§ 1337(a)(1)(B) and (a)(2).) Springfree alleges in the Complaint that Vuly has violated Subsection 337(a)(1)(B) in the importation and sale of products that infringe the asserted patent. (See Complaint.) Vuly admits that it has imported, and sold for importation, into the U.S. the Vuly Thunder trampolines accused of infringing Springfree's asserted patent, and that it intends to sell those products after importation into the U.S. (See JX-011C (July 3, 2014 Joint Stipulation Regarding Importation) at ¶¶ 5-7.) Vuly also admits it stores in inventory the accused Vuly Thunder trampolines in the U.S. (See JX-007C at 7-9.) Vuly has agreed not to contest "Springfree's contention that the requirement of importation, sale for importation, and/or sale after importation into the U.S. under 19 U.S.C. § 1337(a)(1)(B) has been satisfied in this Investigation with respect to Vuly." (JX-011C at ¶ 8.) Accordingly, I find the Commission has subject matter jurisdiction over this Investigation under Section 337 of the Tariff Act of 1930. *Amgen, Inc. v. U.S. Int'l Trade Comm'n*, 902 F.2d 1532, 1536 (Fed. Cir. 1990).

B. Personal Jurisdiction

Vuly has fully participated in the Investigation by, among other things, participating in discovery, participating in the evidentiary hearing, and filing pre-hearing and post-hearing briefs. Accordingly, I find Vuly has submitted to the jurisdiction of the Commission. See *Certain Miniature Hacksaws*, Inv. No. 337-TA-237, Pub. No. 1948, Initial Determination at 4, 1986 WL 379287 (U.S.I.T.C., October 15, 1986) (unreviewed by Commission in relevant part).

C. In Rem Jurisdiction

The Commission has *in rem* jurisdiction over the products at issue by virtue of the above finding that the Accused Products have been imported into the United States. See *Sealed Air Corp. v. United States Int'l Trade Comm'n*, 645 F.2d 976, 985 (C.C.P.A. 1981).

III. RELEVANT LAW

A. Infringement

1. Claim Construction

“An infringement analysis entails two steps. The first step is determining the meaning and scope of the patent claims asserted to be infringed. The second step is comparing the properly construed claims to the device accused of infringing.” *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995) (*en banc*) (internal citations omitted), *aff'd*, 517 U.S. 370 (1996). Claim construction is a “matter of law exclusively for the court.” *Id.* at 970-71. “The construction of claims is simply a way of elaborating the normally terse claim language in order to understand and explain, but not to change, the scope of the claims.” *Embrex, Inc. v. Serv. Eng'g Corp.*, 216 F.3d 1343, 1347 (Fed. Cir. 2000).

Claim construction focuses on the intrinsic evidence, which consists of the claims themselves, the specification, and the prosecution history. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (*en banc*); *see also Markman*, 52 F.3d at 979. As the Federal Circuit in *Phillips* explained, courts must analyze each of these components to determine the “ordinary and customary meaning of a claim term” as understood by a person of ordinary skill in art at the time of the invention. 415 F.3d at 1313. “Such intrinsic evidence is the most significant source of the legally operative meaning of disputed claim language.” *Bell Atl. Network Servs., Inc. v. Covad Commc'ns Grp., Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001). When the intrinsic evidence does not establish the meaning of a claim, then extrinsic evidence (*i.e.*, all evidence external to the patent and the prosecution history, including dictionaries, inventor testimony, expert testimony, and learned treatises) may be considered. *Phillips*, 415 F.3d at 1317.

2. Direct Infringement

A complainant must prove either literal infringement or infringement under the doctrine of equivalents. Infringement must be proven by a preponderance of the evidence. *SmithKline Diagnostics, Inc. v. Helena Labs. Corp.*, 859 F.2d 878, 889 (Fed. Cir. 1988). A preponderance of the evidence standard “requires proving that infringement was more likely than not to have occurred.” *Warner-Lambert Co. v. Teva Pharm. USA, Inc.*, 418 F.3d 1326, 1341 n.15 (Fed. Cir. 2005).

a. Literal Infringement

Literal infringement is a question of fact. *Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1332 (Fed. Cir. 2008). Literal infringement requires the patentee to prove that the accused device contains each and every limitation of the asserted claim(s). *Frank's Casing Crew & Rental Tools, Inc. v. Weatherford Int'l, Inc.*, 389 F.3d 1370, 1378 (Fed. Cir. 2004). If any claim limitation is absent, there is no literal infringement of that claim as a matter of law. *Bayer AG v. Elan Pharm. Research Corp.*, 212 F.3d 1241, 1247 (Fed. Cir. 2000).

b. Doctrine of Equivalents

Where literal infringement is not found, infringement nevertheless can be found under the doctrine of equivalents. Determining infringement under the doctrine of equivalents “requires an intensely factual inquiry.” *Vehicular Techs. Corp. v. Titan Wheel Int'l, Inc.*, 212 F.3d 1377, 1381 (Fed. Cir. 2000). According to the Federal Circuit:

Infringement under the doctrine of equivalents may be found when the accused device contains an “insubstantial” change from the claimed invention. Whether equivalency exists may be determined based on the “insubstantial differences” test or based on the “triple identity” test, namely, whether the element of the accused device “performs substantially the same function in substantially the same way to obtain the same result.” The essential inquiry is whether “the accused product or process contain elements identical or equivalent to each claimed element of the patented invention[.]”

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TIP Sys., LLC v. Phillips & Brooks/Gladwin, Inc., 529 F.3d 1364, 1376-77 (Fed. Cir. 2008)

(citations omitted). Thus, if an element is missing or not satisfied, infringement cannot be found under the doctrine of equivalents as a matter of law. *London v. Carson Pirie Scott & Co.*, 946 F.2d 1534, 1538-39 (Fed. Cir. 1991).

c. Indirect Infringement

Section 271(b) of the Patent Act prohibits inducement: “[w]hoever actively induces infringement of a patent shall be liable as an infringer.” 35 U.S.C. § 271(b). *See DSU Med. Corp. v. JMS Co.*, 471 F.3d 1293, 1305 (Fed. Cir. 2006) (*en banc*) (“To establish liability under section 271(b), a patent holder must prove that once the defendants knew of the patent, they actively and knowingly aid[ed] and abett[ed] another’s direct infringement.”)

Section 271(c) of the Patent Act prohibits contributory infringement: “Under 35 U.S.C. § 271(c), a party who sells a component with knowledge that the component is especially designed for use in a patented invention, and is not a staple article of commerce suitable for substantial noninfringing use, is liable as a contributory infringer.” *Wordtech Sys., Inc. v. Integrated Networks Solutions, Inc.*, 609 F.3d 1308, 1316 (Fed. Cir. 2010).

B. Invalidity

It is Respondents’ burden to prove invalidity, and the burden of proof never shifts to the patentee to prove validity. *Scanner Techs. Corp. v. ICOS Vision Sys. Corp. N.V.*, 528 F.3d 1365, 1380 (Fed. Cir. 2008). “Under the patent statutes, a patent enjoys a presumption of validity, *see* 35 U.S.C. § 282, which can be overcome only through facts supported by clear and convincing evidence[.]” *SRAM Corp. v. AD-II Eng’g, Inc.*, 465 F.3d 1351, 1357 (Fed. Cir. 2006).

The clear and convincing evidence standard placed on the party asserting the invalidity defense requires a level of proof beyond the preponderance of the evidence. Although not susceptible to precise definition, “clear and convincing” evidence has been described as evidence

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which produces in the mind of the trier of fact “an abiding conviction that the truth of a factual contention is ‘highly probable.’” *Price v. Symsek*, 988 F.2d 1187, 1191 (Fed. Cir. 1993) (citing *Buildex, Inc. v. Kason Indus., Inc.*, 849 F.2d 1461, 1463 (Fed. Cir. 1988).)

“When no prior art other than that which was considered by the PTO examiner is relied on by the attacker, he has the added burden of overcoming the deference that is due to a qualified government agency presumed to have properly done its job[.]” *Am. Hoist & Derrick Co. v. Sowa & Sons, Inc.*, 725 F.2d 1350, 1359 (Fed. Cir. 1984). Therefore, the challenger’s “burden is especially difficult when the prior art was before the PTO examiner during prosecution of the application.” *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1467 (Fed. Cir. 1990).

1. Anticipation

Under 35 U.S.C. § 102(a), a patent is invalid for anticipation if it was “patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention.”¹ 35 U.S.C. § 102(a). The Federal Circuit has held that “[a] patent is invalid for anticipation if a single prior art reference discloses each and every limitation of the claimed invention. Moreover, a prior art reference may anticipate without disclosing a feature of the claimed invention if that missing characteristic is necessarily present, or inherent, in the single anticipating reference.” *Schering Corp. v. Geneva Pharm., Inc.*, 339 F.3d 1373, 1377 (Fed. Cir. 2003) (citations omitted). “Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.” *Continental Can Company USA v. Monsanto Company*, 948 F.2d 1264, 1269 (Fed. Cir. 1991). To be considered anticipatory, a prior art reference must describe the applicant’s “claimed invention sufficiently to have placed it in possession of a person of ordinary

¹ For patent applications filed before March 16, 2013, the relevant priority date is “before the invention thereof by the applicant for a patent.” See MPEP § 2131.

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skill in the field of the invention.” *Helifix Ltd. v. Blok-Lok, Ltd.*, 208 F.3d 1339, 1346 (Fed. Cir. 2000) (quoting *In re Paulsen*, 30 F.3d 1475, 1479 (Fed. Cir. 1994)). Anticipation is a question of fact. *Texas Instruments, Inc. v. U.S. Int’l Trade Comm’n*, 988 F.2d 1165, 1177 (Fed. Cir. 1993).

2. Obviousness

Under 35 U.S.C. § 103(a), a patent is valid unless “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” 35 U.S.C. § 103(a). The ultimate question of obviousness is a question of law, but “it is well understood that there are factual issues underlying the ultimate obviousness decision.” *Richardson-Vicks Inc. v. Upjohn Co.*, 122 F.3d 1476, 1479 (Fed. Cir. 1997); *Wang Lab., Inc. v. Toshiba Corp.*, 993 F.2d 858, 863 (Fed. Cir. 1993). The underlying factual determinations include: (1) the scope and content of the prior art, (2) the level of ordinary skill in the art, (3) the differences between the claimed invention and the prior art, and (4) objective indicia of non-obviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966).

Although the Federal Circuit has historically required that, in order to prove obviousness, the patent challenger must demonstrate, by clear and convincing evidence, that there is a “teaching, suggestion, or motivation to combine,” the Supreme Court has rejected this “rigid approach.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 417-418 (2007). In *KSR*, the Supreme Court described a more flexible analysis:

Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue... As our precedents make clear, however, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.

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Id. Since *KSR* was decided, the Federal Circuit has announced that, where a patent challenger contends that a patent is invalid for obviousness based on a combination of prior art references, “the burden falls on the patent challenger to show by clear and convincing evidence that a person of ordinary skill in the art would have had reason to attempt to make the composition or device, . . . and would have had a reasonable expectation of success in doing so.” *PharmaStem Therapeutics, Inc. v. Viacell, Inc.*, 491 F.3d 1342, 1360 (Fed. Cir. 2007).

3. Written Description and Enablement

35 U.S.C. § 112 is the basis for the written description and enablement requirements:

The specification shall contain a written description of the invention, and the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same ...

35 U.S.C. § 112, ¶ 1.

The hallmark of the written description requirement is the disclosure of the invention. *Ariad Pharm., Inc. v. Eli Lilly and Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). The test for determining the sufficiency of the written description in a patent requires “an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art. Based on that inquiry, the specification must describe an invention understandable to that skilled artisan and show that the inventor actually invented the invention claimed.” *Id.*

Compliance with the written description requirement is a question of fact and “the level of detail required to satisfy the written description requirement varies depending on the nature and scope of the claims and on the complexity and predictability of the relevant technology.” *Id.*

“To be enabling, the specification of a patent must teach those skilled in the art how to make and use the full scope of the claimed invention without ‘undue experimentation.’”

Genentech, Inc. v. Novo Nordisk, A/S, 108 F.3d 1361, 1365 (Fed.Cir.1997) (quoting *In re Wright*, 999 F.2d 1557, 1561 (Fed. Cir. 1993)). Enablement serves the dual function in the patent system

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of ensuring adequate disclosure of the claimed invention and of preventing claims broader than the disclosed invention. *MagSil Corp. v. Hitachi Global Storage Technologies, Inc.*, 687 F.3d 1377, 1380 -1381 (Fed. Cir. 2012). “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) (quoting *Nat’l Recovery Techs., Inc. v. Magnetic Separation Sys., Inc.*, 166 F.3d 1190, 1195-96 (Fed. Cir. 1999)). The enablement determination proceeds as of the effective filing date of the patent. *Plant Genetic Sys., N.V. v. DeKalb Genetics Corp.*, 315 F.3d 1335, 1339 (Fed. Cir. 2003).

C. Domestic Industry

In a patent-based complaint, a violation of Section 337 can be found “only if an industry in the United States, relating to the articles protected by the patent ... concerned, exists or is in the process of being established.” 19 U.S.C. § 1337(a)(2). Under Commission precedent, this “domestic industry requirement” of section 337 consists of an economic prong and a technical prong. *Certain Stringed Musical Instruments and Components Thereof*, Inv. No. 337-TA-586, Comm’n Op. at 12-14 (May 16, 2008). The complainant bears the burden of establishing that the domestic industry requirement is satisfied. See *Certain Set-Top Boxes and Components Thereof*, Inv. No. 337-TA-454, Initial Determination at 294 (June 21, 2002) (unreviewed by Commission in relevant part).

1. Economic Prong

The economic prong of the domestic industry requirement is defined in subsection (a)(3) of Section 337 as follows:

(3) For purposes of paragraph (2), an industry in the United States shall be considered to exist if there is in the United States, with respect to the articles protected by the patent, copyright, trademark or mask work concerned --

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- (A) Significant investment in plant and equipment;
- (B) Significant employment of labor or capital; or
- (C) Substantial investment in its exploitation, including engineering, research and development, or licensing.

19 U.S.C. § 1337(a)(3). The economic prong of the domestic industry requirement is satisfied by meeting the criteria of any one of the three factors listed above.

Pursuant to Section 337(a)(3)(A) and (B), “a complainant’s investment in plant and equipment or employment of labor or capital must be shown to be “significant” in relation to the articles protected by the intellectual property right concerned.” *Certain Printing and Imaging Devices and Components Thereof*, Inv. No. 337-TA-690, Comm’n Op. at 26 (February 17, 2011). The Commission has emphasized that “there is no threshold test for what is considered ‘significant’ within the meaning of the statute.” *Certain Kinesiotherapy Devices and Components Thereof*, Inv. No. 337-TA-823, Comm’n Op. at 33 (July 12, 2013). Instead, the determination is made by “an examination of the facts in each investigation, the article of commerce, and the realities of the marketplace.” *Certain Male Prophylactic Devices*, Inv. No. 337-TA-546, Comm’n Op. at 39 (August 1, 2007).

Section 337(a)(3)(C) provides for domestic industry based on “substantial investment” in the enumerated activities, including licensing of a patent. See *Certain Digital Processors and Digital Processing Systems, Components Thereof, and Products Containing Same*, Inv. No. 337-TA-559, Initial Determination at 88 (May 11, 2007) (“Certain Digital Processors”). Mere ownership of the patent is insufficient to satisfy the domestic industry requirement. *Certain Digital Processors* at 93 (citing the Senate and House Reports on the Omnibus Trade and Competitiveness Act of 1988, S.Rep. No. 71). However, entities that are actively engaged in licensing their patents in the United States can meet the domestic industry requirement. *Certain Digital Processors* at 93.

2. Technical Prong

The technical prong of the domestic industry requirement is satisfied when the complainant in a patent-based section 337 investigation establishes that it is practicing or exploiting the patents at issue. See 19 U.S.C. §1337 (a)(2) and (3); *Certain Microsphere Adhesives, Process for Making Same and Prods. Containing Same, Including Self-Stick Repositionable Notes*, Inv. No. 337-TA-366, Comm'n Op. at 8 (Jan. 16, 1996). "In order to satisfy the technical prong of the domestic industry requirement, it is sufficient to show that the domestic industry practices any claim of that patent, not necessarily an asserted claim of that patent." *Certain Ammonium Octamolybdate Isomers*, Inv. No. 337-TA-477, Comm'n Op. at 55 (August 28, 2003).

The test for claim coverage for the purposes of the technical prong of the domestic industry requirement is the same as that for infringement. *Certain Doxorubicin and Preparations Containing Same*, Inv. No. 337-TA-300, Initial Determination at 109, (May 21, 1990), *aff'd*, Views of the Commission at 22 (October 31, 1990); *Alloc, Inc. v. Int'l Trade Comm'n*, 342 F.3d 1361, 1375 (Fed. Cir. 2003). "First, the claims of the patent are construed. Second, the complainant's article or process is examined to determine whether it falls within the scope of the claims." Inv. No. 337-TA-300, Initial Determination at 109. To prevail, the patentee must establish by a preponderance of the evidence that the domestic product practices one or more claims of the patent. The technical prong of the domestic industry can be satisfied either literally or under the doctrine of equivalents. *Certain Dynamic Sequential Gradient Devices and Component Parts Thereof*, Inv. No. 337-TA-335, Initial Determination at 44, Pub. No. 2575 (May 15, 1992).

IV. U.S. PATENT NO. 6,319,174

The '174 patent, titled "Soft-Edged Recreational Trampoline," issued on November 20, 2001, from U.S. Patent Application No. 09/695,829, which was filed on October 26, 2000. (*See* JX-001.) The '174 patent claims a priority date of November 2, 1999, based on New Zealand Patent Application No. 500,734. (*Id.*) Keith Vivian Alexander is the sole named inventor of the '174 patent. (*Id.*)

The '174 patent is owned by Board & Batten International Inc., [

] (*See, e.g.*, CX-179C at Q/A 5, 14-19; CX-108C [

]; CX-202C [

]; CX-203 (certified assignment records from the PTO); CX-178C at

Q/A 8-10; Hr'g Tr. at 111:6-25.) This [] authorizes

Springfree Trampoline, Inc. to bring suit in its own name based on infringement of the '174 patent. (CX-108C at 150.) [

] (*See* CX-179C at Q/A 15.) [

] (*See id.* at Q/A 5, 17; CX-108C.)

A. Asserted Claims

Springfree is asserting independent claims 1 and 13 of the '174 patent against Vuly and contends that its own DI products practice at least claims 1 and 13. Claims 1 and 13 are as follows:

1. A trampoline comprising
a flexible mat with a plurality of first retaining means located around the mat perimeter,
a plurality of second retaining means located about the periphery of a support element and
a plurality of flexible elongated rods,

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such that in use on a flat horizontal surface, said mat forms a horizontal plane having an upper contact surface and a lower non-contact surface orientated vertically above said support element, wherein each said flexible rod is retained at a first and second end by said first and second retaining means respectively.

...

13. A trampoline comprising:

a flexible mat

a support element

a plurality of spaced flexible elongated rods secured between said mat and said support element so as to support said mat above said support element.

(JX-001 at 4:37-49, 6:1-9.)

B. Claim Construction

1. Level of Ordinary Skill in the Art

Springfree argues that a person of ordinary skill in the art as of the effective filing date of the '174 patent (approximately 1999) would be a person with a Bachelor of Science degree in mechanical engineering, or equivalent thereof, and one to two years of experience in a relevant field of industry such as trampolines or fitness equipment. Alternatively, more education could substitute for experience, and that experience, especially when combined with training, could substitute for formal college education. (CX-177C (Reinholtz DWS) at Q/A 40-42.)

Vuly argues the level of ordinary skill in the art is a bachelor's degree in mechanical engineering with two to three years of experience. (RIB at 6.)

Springfree and Vuly each propose a similar level of ordinary skill in the art. To the extent there are any differences between the parties' proposals, the parties have not relied on said differences for any purpose. Having considered the parties' arguments, I find a person of ordinary skill in the art as of the effective filing date of the '174 patent would be a person with a Bachelor

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of Science degree in mechanical engineering, or equivalent thereof, and one to two years of experience in a relevant field of industry such as trampolines or fitness equipment.

2. Disputed Claim Terms

The parties dispute the meaning of a number of terms in the asserted claims. Specifically, the parties dispute the meaning of: (1) “flexible mat”; (2) “first retaining means”; (3) “second retaining means”; (4) “support element”; (5) “flexible elongated rod”; (6) “retained”; and (7) “secured between said mat and said support element”.

a. “flexible mat” (claims 1 and 13)

Springfree’s Proposed Construction	Vuly’s Proposed Construction
“Sheet or fabric that is tensioned to provide a bouncing surface.”	“flexible material defining an area exceeding that of the support element”

Vuly’s proposed construction requires the mat to “defin[e] an area exceeding that of the support element.” However, nothing in the language of claims 1 or 13 requires, or even suggests, the mat must have a larger area than the support element. The only support Vuly cites for its construction comes from the ’174 patent’s description of the preferred embodiment. (*See* JX-001 at 2:3-6 (“The diameter of said mat *preferably* exceeds the said base”); 3:45-49 (describing the relative sizes of the mat and the support element in “a preferred embodiment”); 2:42; *see also* Tr. at 517:12-20.) Vuly’s proposed construction impermissibly imports into the claim a limitation from the preferred embodiment of the invention. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005) (*en banc*); *see also Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012) (explaining that courts may only depart from the plain and ordinary meaning of claim terms where (1) the patentee acts as his own lexicographer, or (2) the patentee has disavowed the full scope of a claim term either in the specification or during prosecution). Moreover, the Federal Circuit has “expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that

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embodiment.” *Phillips*, 415 F.3d at 1323. Vuly’s proposed construction is also contradicted by dependent claim 5, which specifically requires that the “mat is larger in plan view than said support element.” (JX-001 at 4:59-60.) The addition of this limitation in claim 5 suggests that the limitation is not present in independent claim 1. Thus, for at least the reasons above, I find Vuly’s proposed construction not persuasive.

b. “first retaining means” (claim 1)

Springfree’s Proposed Construction	Vuly’s Proposed Construction
The function and corresponding structure are the following: Function: to hold or restrain a rod. Corresponding structure: pouch or pocket with an aperture and that is associated with the flexible mat.	The function and corresponding structure are the following: Function: to retain the end pieces of the first end of the flexible elongated rods. Corresponding structure: pouches or pockets sewn into the fabric of the mat with an aperture formed on the lower surface of the mat adapted to retain the first end of the flexible rod and end piece.

The Parties’ Positions

Springfree’s Position

Springfree argues that the ’174 patent specification discloses a first retaining means associated with the flexible mat that holds or restrains an upper end of the flexible elongated rod. (CIB at 9.) Springfree argues that consistent with the specification and the plain and ordinary meaning of the word “retain,” the function of the “first retaining means” is “to hold or restrain a rod.” (*Id.*) With regard to the corresponding structure, Springfree argues the ’174 patent describes the first retaining means as follows:

Preferably, said first retaining means comprises a plurality of pockets/pouches each formed with an aperture on said non-contact surface.

Equidistantly spaced about the periphery of the circular mat (2) are a plurality of first retaining means in the form of pouches (5) sewn into the fabric of the mat with an aperture formed on the lower surface of said mat (2).

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[Claim] 8. The trampoline as claimed in claim 1 wherein said first retaining means comprises a plurality of pockets each formed with an aperture on said non-contact surface.

(*Id.*) Springfree argues that its expert, Dr. Reinholtz, testified that based on these disclosures, a person of ordinary skill in the art would understand the corresponding structure to be a “pouch or pocket with an aperture and that is associated with the flexible mat.” (*Id.*)

Springfree argues Vuly’s proposed construction is flawed because it unnecessarily adds restrictions to the claimed function of the first retaining means based on the configuration of the preferred ends of the rods disclosed in the ’174 patent. (*Id.* at 10.) According to Springfree, the ’174 patent merely states a preference for end pieces on the flexible elongated rods; it does not require them. (*Id.* at 10.) Springfree argues that Dr. Reinholtz testified the end pieces are not necessary for the first retaining means to perform the function of holding or restraining the rod. (*Id.*) Thus, Springfree argues reading such a requirement into the first retaining means would be improper. (*Id.*) Springfree also argues that it would be inconsistent with the description of the first retaining means, which, at its broadest, the patent describes simply as “a plurality of pockets/pouches each formed with an aperture on said non-contact surface.” (*Id.*)

Vuly’s Position

Vuly argues the term “first retaining means” is governed by 35 U.S.C. § 112, ¶ 6. (RIB at 11.) Vuly argues the function is to retain the end-pieces of the first end of the flexible elongated rods. (*Id.*) Vuly argues the corresponding structure is defined in the specification as pouches or pockets sewn into the fabric of the mat with an aperture formed on the lower surface of the mat adapted to retain the first end of the flexible rod and end-piece. (*Id.*) According to Vuly, the ’174 patent links structure to the “first retaining means” as follows:

Preferably said first retaining means comprises plurality of pockets/pouches each formed with an aperture on said non-contact surface. The said first end of each said

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rod preferably includes a smooth-edged enlarged portion capable of releasably engaging with said first retaining means.

(*Id.*) Additionally, Vuly argues that the patent adds:

The end-pieces (6) are configured to be releasably inserted and retained within pouches (5). FIG. 4 a) shows a hemispherical dome-shaped end-piece (6) attached to the end of rod (4) via cylindrical sleeve and collar extending from the flat side of the hemisphere, whilst FIG. 4 b) shows an alternative round edged oblong/lozenge shaped end-piece (6). The sleeve/collar arrangement shown in FIG. 4 a) is used to attach the end piece (6) to the mat (2) by a strap (not shown) in order to alleviate the load on the pouch (5). Both the end-pieces (6) shown are exemplary and alternative shapes may be employed *providing they afford a secure means of retaining rod (4) within a pouch (5) whilst under tension, without damage the mat (2) or its surrounds and prevent injury to user falling on the trampoline edge.*

(*Id.* at 11 (emphasis added by Vuly).) Thus, Vuly argues the '174 patent discloses that the end-pieces of the rods may take alternative shapes, but a pocket or pouch is required, and the end-piece of the rod must be inserted into it. (*Id.* at 11-12.) Vuly argues that the '174 patent does not describe how one of ordinary skill in the art would need to modify the pockets to make a functioning, safe trampoline using a different structure than the one disclosed. (*Id.* at 12.) In addition, Vuly argues its construction is consistent with Dr. Alexander's statements made to the PTO during the prosecution of a later patent. (*Id.*) Vuly argues that when Dr. Alexander was trying to patent a different "retaining means," he made it clear that the structure disclosed by the '174 patent was merely "pouches sewn into the periphery of the mat into which the top ends of the rods fit, with end-pieces fitted to the rods." (*Id.*)

Vuly argues that Springfree's construction fails to include any reference to the end-piece of the rod, which is the structure that is held or restrained. (*Id.*) Vuly argues that even Springfree's expert, Dr. Reinholtz, agreed that including language referencing the end-pieces "would be a good addition" to the proper claim construction. (*Id.*) Vuly argues Springfree's construction ignores a fundamental part of the function that is performed, as well as a fundamental part of the structure that provides the retaining function, and thus cannot be correct. (*Id.*)

Discussion

Springfree agreed, for purposes of this Investigation, that the “first retaining means” is a means-plus-function limitation. (Tr. at 107:15-22.) Vuly also argues that this limitation should be construed as a means plus function limitation. I agree with the parties that the limitation “first retaining means,” is governed by 35 U.S.C. § 112, ¶ 6.

The first step of the analysis is to determine the function of the means. The language of claim 1 states that “each said flexible rod is retained at a first ... end by said first ... retaining means.” (JX-001 at 4:47-49.) Thus, the claim language dictates that the function of the first retaining means is to retain a flexible rod at a first end. *See JW Enterprises, Inc. v. Interact Accessories, Inc.*, 424 F.3d 1324, 1331 (Fed. Cir. 2005) (“[A] court may not construe a means-plus-function limitation by adopting a function different from that explicitly recited in the claim.” (internal quotations omitted)). This is further supported by the specification. (*See id.* at 1:59-61.)

Springfree argues the function of the first retaining means is to hold or restrain a rod. I find Springfree’s proposed function too broad, as the ‘174 patent makes clear that the first retaining means does not just retain the rod, but rather retains the “first end” of the rod. Thus, I find Springfree’s argument in this regard not persuasive.

Vuly argues the function of the first retaining means is to retain the end pieces of the first end of the flexible elongated rods. I disagree. The ‘174 patent does not require that the flexible elongated rods have end pieces. Nor in fact does Vuly’s proposed construction of “flexible elongated rod” require such. As the specification makes clear, it is only the preferred embodiment of a flexible elongated rod that has an end piece. (*See, e.g.*, JX-001 at 2:10-12 (“The said first end of each said rod *preferably* includes a smooth-edged enlarged portion capable of releasably engaging with said first retaining means.”); *id.* at 5:1-4 (“The trampoline as claimed in claim 1 wherein the first end of each said rod includes a smooth edged enlarged portion capable of

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releasably engaging with said first retaining means.”.) Thus, I find Vuly’s argument improperly limits the function of the first retaining means and in so doing seeks to impermissibly read additional limitations into claim 1.

Accordingly, for the reasons above, I find the function of the first retaining means is to retain a first end of a flexible elongated rod.

Having determined the function of the first retaining means, the next step in construing the term is to identify the structure in the specification that corresponds to that function. To that end, the specification states:

Preferably, said first retaining means comprises a plurality of pockets/pouches each formed with an aperture on said non-contact surface [of the flexible mat].

(JX-1 at 2:7-9.) The specification also states:

Equidistantly spaced about the periphery of the circular mat (2) are a plurality of first retaining means in the form of pouches (5) sewn into the fabric of the mat with an aperture formed on the lower surface of said mat (2).

(*Id.* at 2:49-53.) The specification links the claimed function with these disclosed structures, making clear the top ends of the rods are connected to (*i.e.*, retained by) the pouches. (*See id.* at 1:59-61, 2:54-55.) Thus, I find the specification of the ‘174 patent discloses the following structures for retaining a first end of a flexible elongated rod: (1) a pocket or pouch formed with an aperture on the non-contact (a.k.a., lower surface) of the flexible mat; and (2) a pouch sewn into the fabric of the mat with an aperture on the non-contact (a.k.a. lower surface) of the flexible mat.

The specification further states:

The end-pieces (6) are configured to be releasably inserted and retained within pouches (5). FIG. 4 a) shows a hemispherical dome-shaped end-piece (6) attached to the end of rod (4) via cylindrical sleeve and collar extending from the flat side of the hemisphere, whilst FIG. 4 b) shows an alternative round edged oblong/lozenge shaped end-piece (6). The sleeve/collar arrangement shown in FIG. 4 a) is used to attach the end piece (6) to the mat (2) by a strap (not shown) in order to alleviate the load on the pouch (5). Both the end-pieces (6) shown are exemplary and alternative shapes may be employed *providing they afford a secure means of*

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retaining rod (4) within a pouch (5) whilst under tension, without damage the mat (2) or its surrounds and prevent injury to user falling on the trampoline edge.

(JX-1 at 2:65-3:1 (emphasis added).) According to the above paragraph the end-pieces (6) provide a secure means of retaining rod (4) within a pouch 5. Thus, in this embodiment of the invention the end-pieces are necessary structure to accomplish the function of retaining a first end of a flexible elongated rod. As previously discussed, the '174 patent does not require that the flexible elongated rods have end pieces; only the preferred embodiment of a flexible elongated rod has an end piece. Thus, contrary to Vuly's argument I do not find the structure identified above is the only structure corresponding to the claimed function, but rather one or several alternative structures identified in the patent for "retaining a first end of a flexible elongated rod."

Identification of corresponding structure may embrace more than the preferred embodiment. A means-plus-function claim encompasses all structure in the specification corresponding to that element and equivalent structures. ... When multiple embodiments in the specification correspond to the claimed function, proper application of § 112, ¶ 6 generally reads the claim element to embrace each of those embodiments.

Micro Chemical, Inc. v. Great Plains Chemical Co., Inc., 194 F.3d 1250, 1258 (Fed. Cir. 1999).

The prosecution history further informs my analysis. The Federal Circuit has stated that "[j]ust as prosecution history estoppel may act to estop an equivalence argument under the doctrine of equivalents, positions taken before the PTO may bar an inconsistent position on claim construction under § 112, ¶ 6." *Regents of University of Minnesota v. AGA Medical Corp.*, 717 F.3d 929, 942 (Fed. Cir. 2013) (quoting *Alpex Computer Corp. v. Nintendo Co.*, 102 F.3d 1214, 1221 (Fed.Cir.1996)). "Thus, prosecution history disclaimer may limit the range of equivalent structures that fall within the scope of a means-plus-function limitation." *Id.* (citing *see, e.g., J&M Corp. v. Harley-Davidson, Inc.*, 269 F.3d 1360, 1367 (Fed. Cir. 2001).

The asserted '174 patent, issued on November 20, 2001, from U.S. Patent Application No. 09/695,829, ("the '829 application") which was filed on October 26, 2000. (See JX-001.)

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The '174 patent claims a priority date of November 2, 1999, based on New Zealand Patent Application No. 500,734. (*Id.*) Keith Vivian Alexander is the sole named inventor of the '174 patent. (*Id.*) On March 18, 2009, inventor Keith Vivian Alexander filed a separate patent application titled, "edge fittings for soft-edged trampolines." (*See* RX-067; RX-069.) This later application was given U.S. Patent Application No. 12/406,572 ("the '572 application") and eventually matured into U.S. Patent No. 8,105,211 ("the '211 patent"). (*Id.*) The '211 patent claims a priority date of November 20, 2001, based on New Zealand Patent Application No. 513331. (*Id.*)

During prosecution of the '572 application, the patent examiner rejected in an Office Action dated January 21, 2010, the pending claims based on "obviousness-type double patenting." (*See* RX-069.0083.) Specifically, the examiner found the pending claims to be unpatentable over claims 1-13 of the '174 patent at issue in this investigation. (*Id.*) In particular, the examiner wrote:

Although the conflicting claims are not identical, they are not patentably distinct from each other because they are drawn to a trampoline comprising a frame, a flexible mat, with flexible rods having a lower end on the frame and an upper end connected to the flexible mat. The '174 patent fails to disclose limitations drawn to an enlarged rod end in a ball and socket type joint, but such features are considered matters of ordinary design choice absent criticality, as the use of ball and socket joints are notoriously old and well known as a connection means in exercise device as evidenced in U.S. Patents 6,095,950; 6,258,011; and 6,022,303. Specific limitations drawn to shapes and sizes are considered matters of ordinary design choice absent criticality or unexpected results.

(*Id.* at 069.0083-.0084)

In response to this rejection, the applicant could have filed a terminal disclaimer to overcome the rejection, but instead chose to traverse the rejection through both argument and the accompanying declaration of the inventor, Dr. Alexander.

Dr. Alexander confirmed in the declaration submitted to the PTO that a ball-and-socket is a fundamentally different design compared to the retaining means of the '174. (RX-69 at 69.0072-

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0075; RX-200C at Q/A 244-246.) In his declaration, Dr. Alexander stated that the design of the ball-and-socket was not obvious to him based on his designs from the '174 patent. (RX-69 at 69.0072-0075.) Dr. Alexander further discussed numerous problems with the pouch or pocket design disclosed in the '174 patent, including wear upon the mat and cracking and failure of the flexible rods during trampoline use. (*Id.*)

The Response to the Office Action that accompanied Dr. Alexander's declaration explained in detail the significance of the differences between the "pocket-type" retaining means described in the '174 patent and the ball-and-socket design of the new application, describing them as "structurally different" and not the result of an obvious design choice. (RX-69 at 69.0062-0063.) Specifically, the Office Action Response states,

[a]lthough claim 8 of the '174 patent recites that "the first retaining means comprises a plurality of pockets each formed with an aperture on said non-contact surface," that arrangement is structurally different from the Applicant's claimed fittings as set forth in Claim 1 of the present application as discussed above.

(*Id.* at 69.0062.) The Response additionally acknowledged that "if a fitting as claimed can be placed 'within a pocket,' then it is not the same thing as a pocket." (*Id.*)

As outlined above, to try and overcome the patent examiner's double patenting rejection the applicant, and Dr. Alexander in his declaration, distinguished the ball-and-socket design from the first retaining means of the '174 patent. Among other things, the applicant declared the ball-and socket design to be "structurally different" from the first retaining means. Likewise, Dr. Alexander declared the ball-and-socket design to be a non-obvious variant of the first retaining means of the '174 patent. I find the applicant's clear and unmistakable statements made in the response to the Patent Office's double-patenting rejection and those by Dr. Alexander in his declaration distinguishing the ball-and-socket design from the first retaining means of claim 1 of the '174 patent to be prosecution history disclaimer. Thus, whatever the proper construction of first retaining means, I find the applicant disclaimed that the ball-and-socket design of the '572

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application can satisfy that first retaining means limitation. *Goldenberg v. Cytogen, Inc.*, 373 F.3d 1158, 1167 (Fed. Cir. 2004.)

In *Goldenberg*, the patent at issue was U.S. Patent No. 4,460,559 (“the ‘559 patent”). *Goldenberg*, 373 F.3d at 1161. The ‘559 patent issued on July 17, 1984 from application serial no. 374,662 (filed by Goldenberg on May 4, 1982), which was a continuation of application serial no. 126,261 (“the ‘261 application”). *Id.* Filed simultaneously with the ‘261 application, Goldenberg filed a separate application that was given serial no. 126,262 (“the ‘262 application”), which eventually matured into US Patent No. 4,444,744 (“the ‘744 patent”). *Id.* In the first office action after the filings of the ‘261 and ‘262 applications, the Examiner rejected claims 15-22 and 28-29 of the ‘261 application on double patenting grounds over the ‘262 application. *Id.* In an attempt to overcome the examiner’s rejection, Goldenberg distinguished the method and compositions claimed in the ‘261 application from the claims of the ‘262 application.

The District Court, in granting Cytogen’s motion for summary judgment of no literal infringement and of no infringement under the doctrine of equivalents, explained that although the ‘744 patent was not related to the ‘559 patent Goldenberg distinguished the ‘262 application (the application that would become the ‘744 patent) to overcome the examiner’s double-patenting rejection during prosecution. Based on the testimony and the statements from the ‘744 patent the district court concluded the accused product was outside the literal scope of claim 1 of the ‘559 patent.

The Federal Circuit held that the “district court made no error to the extent that it referenced the contents of the ‘262 application as it existed when Goldenberg distinguished the ‘262 application from the ‘261 application in the office action response dated March 24, 1981. The Federal Circuit held that “[t]his response constitutes part of the prosecution history of the ‘261 application, which is a parent application to the ‘559 patent and therefore part of the ‘559 patent’s

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prosecution history.” The Federal Circuit thus concluded that the “district court was entitled to treat the ‘262 application as part of the intrinsic evidence of the ‘559 patent when construing the claim terms.”

Like in *Goldenberg*, in the present case the applicant’s remarks (and those of Dr. Alexander in his declaration) distinguishing the ball and socket design of the ‘572 application from the first retaining means of the ‘174 patent to overcome a double-patenting rejection are part of the prosecution history of the ‘174 patent and part of the intrinsic evidence that may be relied on to construe the first retaining means.

Accordingly, for the reasons above, and with caveat below, I find one of ordinary skill in the art at the time of the invention would construe the term “first retaining means” as either: (1) a pocket or pouch formed with an aperture on the non-contact (a.k.a., lower surface) of the flexible mat; (2) a pouch sewn into the fabric of the mat with an aperture on the non-contact (a.k.a., lower surface) of the flexible mat; or (3) an end piece and a pouch formed with an aperture on the non-contact (a.k.a., lower surface) of the flexible mat adapted to retain the end piece. As discussed above, I find that the applicant disavowed first retaining means comprising a ball and socket arrangement. Thus, my construction of the “first retaining means” is limited accordingly.

c. “second retaining means” (claim 1)

Springfree’s Proposed Construction	Vuly’s Proposed Construction
The function and corresponding structure are the following: Function: to hold or restrain a rod. Corresponding structure: cylindrical holder associated with the support element.	The function and corresponding structure are the following: Function: to retain the second end of the flexible elongated rods. Corresponding structure: inclined tubular cylindrical holders which are closed or pinched at one end.

The Parties' Positions

Springfree's Position

Springfree argues the '174 patent discloses a second retaining means associated with the support element that holds or restrains a lower end of the flexible elongated rod. (CIB at 11.)

Springfree argues that consistent with the specification and the plain and ordinary meaning of the word "retain," the function of the "second retaining means" is "to hold or restrain a rod". (*Id.*)

Springfree argues that as for the corresponding structure, the '174 patent describes the second retaining means as follows:

Preferably said second retaining means comprises a plurality of cylindrical elements attached to the perimeter of said support element.

The said second end (i.e. the opposing end to the said first end with the attached end-piece (6)) of each rod (4) is inserted into a second retaining means in the form of a tubular cylindrical holder (7), which is closed (or pinched) at one end.

[Claim] 11. The trampoline as claimed in claim 1 wherein said second retaining means comprises a plurality of cylindrical elements attached to the perimeter of said support elements.

(*Id.* at 11-12.) Springfree argues that its expert, Dr. Reinholtz, testified that based on these disclosures, a person of ordinary skill in the art would understand the corresponding structure to be "a cylindrical holder associated with the support element." (*Id.* at 12.)

Springfree asserts that Vuly's definition of the function is similar to Springfree's, but its proposed corresponding structure—"inclined tubular cylindrical holders which are closed or pinched at one end"—improperly imports two limitations from the preferred configuration. (*Id.*)

First, Springfree argues there is no requirement that the holders be inclined. (*Id.*) In fact,

Springfree argues this is inconsistent with the '174 patent's disclosure of another embodiment in which the flexible elongated rods (and thus the holders) are vertical. (*Id.*) Second, Springfree

argues the requirement that the holder be closed or pinched at one end is extra structure not

necessary to perform the recited function. (*Id.*) Springfree argues that Dr. Reinholtz testified that

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the rods of the '174 patent can be held or restrained in place without a closed or pinched holder.

(Id.)

Vuly's Position

Vuly argues the term "second retaining means" is governed by 35 U.S.C. § 112, ¶ 6. (RIB at 13.) Vuly argues the function is to retain the second end of the flexible elongated rods. *(Id.)*

Vuly argues the corresponding structure is clearly linked in the specification as inclined tubular cylindrical holders which are closed or pinched at one end. *(Id.)* Vuly argues that the '174 patent also specifies that the "second retaining means" be at an incline to avoid injury. *(Id.)* Vuly argues the figures from the patent disclosing the "second retaining means" only show inclined tubular cylindrical holders. *(Id.)* Vuly argues that the '174 patent describes only one "alternative embodiment" for the second retaining means, which still uses the inclined cylindrical holders, but mounts them at an incline on the interior perimeter of the support element, instead of the exterior. *(Id. at 14.)* According to Vuly, the '174 patent does not describe or disclose any other "second retaining means," nor does it describe how one of ordinary skill in the art would need to modify the claimed invention in order to make a functioning, safe trampoline using a different structure. *(Id.)*

Vuly argues that Springfree's proposed construction does not adequately consider the fact that the cylindrical holders must be inclined as discussed above. *(Id.)* Vuly asserts that the '174 patent specifically warns that "rods (4) orientated vertically upright . . . could lead to user injury and/or trampoline damage" and to avert this risk by "inclining the rods (4) in a substantially tangential direction to the perimeter of the mat (2) as well as in the radial direction." *(Id.)* Vuly argues that after disparaging vertically-oriented rods as defeating the purpose of the '174 patent of avoiding user injury, the claims cannot be construed to now encompass that feature. *(Id.)*

Discussion

Springfree agreed, for purposes of this Investigation, to construe “second retaining means” as a means-plus-function limitation. (Tr. at 107:15-22.). Vuly also argues that this limitation should be construed as a means plus function limitation. I agree with the parties that the limitation “first retaining means,” is governed by 35 U.S.C. § 112, ¶ 6.

The first step of the analysis is to determine the function of the means. The language of claim 1 states that “each said flexible rod is retained at a ... second end by said ... second retaining means.” (JX-001 at 4:47-49.) Thus, the claim language dictates that the function of the second retaining means is to retain a flexible rod at a second end. *See JWV Enterprises, Inc. v. Interact Accessories, Inc.*, 424 F.3d 1324, 1331 (Fed. Cir. 2005) (“[A] court may not construe a means-plus-function limitation by adopting a function different from that explicitly recited in the claim.” (internal quotations omitted)). This is further supported by the specification. (*See id.* at 1:59-61.)

Springfree argues the function of the second retaining means is to hold or restrain a rod. I find Springfree’s proposed function too broad, as the ‘174 patent makes clear that the second retaining means does not just retain the rod, but rather retains the “second end” of the rod. Thus, I find Springfree’s argument not persuasive.

Accordingly, I agree with Vuly that the function of the first retaining means is to retain a second end of a flexible elongated rod.

Having determined the function of the second retaining means, the next step in construing the term is to identify the structure in the specification that corresponds to that function. To that end, claim 11 states that the “second retaining means comprises a plurality of cylindrical elements.” Likewise, the specification states:

Preferably said second retaining means comprises a plurality of cylindrical elements.

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(JX-001 at 2:17-19.) The specification also states:

The said second end (i.e. the opposing end to the said first end with the attached end-piece (6)) of each rod (4) is inserted into a second retaining means in the form of a tubular cylindrical holder (7), which is closed (or pinched) at one end.

(*Id.* at 3:12-16.) The specification links the claimed function with these disclosed structures, making clear the second ends of the rods are inserted into and held by (*i.e.*, retained by) the cylindrical holders. (*See, e.g., id.* at 1:59-61, 3:12-15, 3:16-19, Figs. 1, 2, 5.) Thus, I find the specification of the '174 patent discloses the following structures for retaining a second end of a flexible elongated rod: (1) a cylindrical element; and (2) a tubular cylindrical holder that is closed (or pinched) at one end.

Vuly argues that the specification discloses that the second end of a flexible elongated rod is retained by an inclined tubular cylindrical holder that is closed or pinched at one end. (RIB at 13.) Vuly argues that the only embodiments disclosed in the '174 patent for the "second retaining means" use inclined cylindrical holders. (*Id.* at 13-14.) Vuly argues that the '174 patent does not describe or disclose any other "second retaining means," nor does it describe how one of ordinary skill in the art would need to modify the claimed invention in order to make a functioning, safe trampoline using a different structure. (*Id.* at 14.) I disagree.

Contrary to Vuly's argument nowhere in the two passages I quote from the specification above does it state the cylindrical elements/holders are inclined. The discussion in the specification of attaching the second retaining means at an incline occurs only with reference to a preferred embodiment of the invention that has the flexible elongated rods secured between the mat and support element at an incline. But the '174 patent explicitly teaches that the flexible elongated rods need not be secured in such a fashion. Specifically, the '174 patent states that "[p]referably, each said rod extends upwards from said ring frame at an incline." (JX-001 at 1:62-

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63; *see also id.* at 2:42 (“FIGS 1-6 show a preferred embodiment . . .”). Moreover, the specification teaches that

This bouncing mechanism could be achieved by orientating the rods (4) such that their longitudinal axis extended radially outwards (with respect to the geometric centre of the trampoline) at an upwards incline from the ring frame (3) (i.e. no ‘swirl’ pattern), *or even by rods (4) orientated vertically upright.*

(JX-001 at 3:57-62 (emphasis added).) With the rods vertically oriented the second retaining means would necessarily also be vertically oriented in order to receive the rods, not inclined.

Vuly argues that the ‘174 patent “disparage[es] vertically-oriented rods” and thus any construction based on such would be incorrect. In support Vuly cites *Inpro II Licensing, S.A.R.L. v. T-Mobile USA, Inc.*, 450 F.3d 1350 (Fed. Cir. 2006). I find *Inpro II* distinguishable from the present case on the facts. Moreover, the ‘174 patent does not really disparage vertically oriented rods, but rather points out a potential drawback with orienting the rods vertically and explains why the preferred embodiment is, in fact, preferred:

However, such configurations could lead to user injury and/or trampoline damage in the event of an impact directly on top of a rod/end-piece assembly (2,6). This may be averted by inclining the rods (4) in a substantially tangential direction to the perimeter of the mat (2) as well as in the radial direction. Thus, in the event of such an impact, the rods (4) immediately below and adjacent to the impact point on the mat (2) are readily deflected downwards without causing injury as the force of the impact acts laterally on the side of the rods (4) instead of along the stiffer longitudinal axis.

(JX-001 at 3:63-4:6.) Regardless, I find nothing in the above statement from the specification rises to the level of a disclaimer of vertical rods.

Accordingly, for the reasons above, I find one of ordinary skill in the art at the time of the invention would construe the term “second retaining means” as either: (1) a cylindrical element; or (2) a tubular cylindrical holder that is closed (or pinched) at one end.

d. “support element” (claims 1 and 13)

Springfree’s Proposed Construction	Vuly’s Proposed Construction
Plain and ordinary meaning; or “A rigid frame that supports rods.”	base frame below the flexible mat defining an area smaller than the flexible mat.

The Parties’ Positions

Springfree’s Position

Springfree argues that the term “support element” is readily understood without further construction and thus is entitled to its plain and ordinary meaning. (CIB at 18.) Alternatively, Springfree argues that should the term be construed it is properly construed as “a rigid frame that supports rods.” (*Id.*) Springfree argues its construction is supported by the term’s plain and ordinary meaning, the intrinsic evidence, and Dr. Reinholtz’s testimony. (*Id.*) Specifically, Springfree argues the preferred embodiment of the invention disclosed in the ’174 patent includes “a support element in the form of an annular ring frame.” (*Id.* at 19.) Springfree argues the patent later describes that the ring frame (3) “is formed (in the embodiment shown in the drawings) from interconnecting lengths of square-sectioned steel framework.” (*Id.*) Springfree asserts that this steel frame is undoubtedly rigid. (*Id.*) Moreover, Springfree argues the patent discloses that the ring frame (3) provides support for the flexible elongated rods. (*Id.*) Springfree argues that its expert, Dr. Reinholtz, testified that the support element “has to be relatively rigid to perform the function of providing support.” (*Id.*) Thus, Springfree argues its proposed construction of “a rigid frame that supports rods” is consistent with the patent as it would have been understood by a person of ordinary skill in the art. (*Id.*)

Springfree argues that just as with Vuly’s proposed construction for “flexible mat,” Vuly’s construction goes well beyond the plain and ordinary meaning of “support element” by requiring

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the support element to “defin[e] an area smaller than the flexible mat.” (*Id.*) Springfree argues that this improperly imports a limitation from the preferred embodiment. (*Id.*) Springfree asserts that the only support Vuly cites for its construction comes from the '174 patent's description of the preferred embodiment. (*Id.*) Springfree argues that the Federal Circuit has expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment. (*Id.*) Springfree also argues that Vuly's proposed construction is contradicted by dependent claim 5, which states “wherein said mat is larger in plan view than said support element.” (*Id.* at 20.) Thus, Springfree argues the addition of this limitation in claim 5 raises a presumption that independent claim 1 does not require the support element to be smaller than the mat. (*Id.*) Springfree argues nothing in the specification or prosecution history of the '174 patent rebuts that presumption. (*Id.*)

Vuly's Position

Vuly argues that for the same reasons discussed with regard to the term “flexible mat,” the term “support element” should be construed as a “base frame below the flexible mat defining an area smaller than the flexible mat.” (RIB at 10.) Vuly argues that the patent does not teach or describe any other method of designing the support element. (*Id.*) Vuly argues that to move the springs so they are not “adjacent to the bouncing surface,” the support element has to be smaller than the flexible mat, so that the rods are not adjacent to the bouncing surface, but instead are below it. (*Id.*) Thus, Vuly argues its claim construction conforms to the “present invention,” and Springfree's proposed construction ignores the patent's teachings. (*Id.*)

Vuly argues that Dr. Reinholtz attempted to narrow Springfree's construction when faced with the prior art '135 patent. (*Id.*) Vuly argues that Dr. Reinholtz attempted to distinguish the '135 patent because the “support element” has multiple components, claiming that the construction “a rigid frame that supports rods” means that “a” frame has to be a single structure.

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(*Id.*) Vuly argues there is no such requirement in the patent, and the position is contrary to law.

(*Id.*)

Discussion

I am not persuaded by either party's construction of "support element."

Looking first to the language of the claims, I note asserted claim 1 requires a plurality of second retaining means located about the periphery of the support element. Unlike claim 1, however, claim 13 does not require a second retaining means. Thus, while it may be argued based on the language of claim 1 that the "support element" supports the second retaining means, the language of claim 13 would suggest such an interpretation is incorrect.

Claim 1 requires that each flexible rod is retained at a first end by a first retaining means located around the perimeter of the mat and a second end by the second retaining means located about the periphery of the support element. Claim 13 similarly requires that the plurality of flexible rods be secured between the mat and the support element. Thus, based on the language of claims 1 and 13 it appears the "support element" is intended to support the claimed flexible elongated rods.

Non-asserted dependent claim 4 also aids the interpretation of the term "support element." Specifically, non-asserted dependent claim 4, which depends from claim 3, which depends from claim 2, which depends from asserted claim 1, states that "said support element *comprises* a frame ..." (emphasis added). This language suggests the support element of claim 1 is broader than the frame of dependent claim 5. Thus it appears the applicant intended the "support element" to be broader than the "rigid frame" or "base frame" proposed by the parties.

The specification describes the term "support element" only in the context of the preferred embodiment of the invention as an annular ring frame that may be formed from circular cross-section tubing. As such, the specification does little to enlighten the proper meaning of the term

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beyond that which I have already gleaned from the language of the claims. I do note that consistent with my construction, Figs. 1-3 show each of the plurality of flexible rods supported at its second end by the support element.

Accordingly, based on the language of the claims as supported by the specification, I find one of ordinary skill in the art would construe the term “support element” as “an element that supports the plurality of flexibly elongated rods.”

I find Springfree’s construction not persuasive because it adds the limitation “rigid” found nowhere in the claim. Additionally, as discussed above, the term “support element” is broader than just a frame and thus I find it improper to limit the construction of “support element” to a frame.

I find Vuly’s proposed construction not persuasive for a number of reasons. First, Vuly’s proposed construction impermissibly reads out the word “support” in the term “support element.” Second, as indicated above, the term “support element” is broader than just a frame and thus I find it improper to limit the construction of “support element” to a frame. Third, Vuly’s proposed construction impermissibly reads in limitations from the preferred embodiment of the invention by requiring the base frame to define an area smaller than the flexible mat. Finally, Vuly’s attempt to require the support element to define an area smaller than the mat is contrary to the claim language, specifically, dependent claim 5, which explicitly requires the mat to be larger in plan view than the support element. Adopting Vuly’s proposed construction would impermissibly read out dependent claim 5.

e. “flexible elongated rod” (claims 1 and 13)

Springfree’s Proposed Construction	Vuly’s Proposed Construction
Plain and ordinary meaning; or “Slender resilient bar.”	straight cylindrical bar

The Parties’ Positions

Springfree’s Position

Springfree argues based on the testimony of its expert, Dr. Reinholtz, the phrase “flexible elongated rod” is readily understood without further construction and therefore should be given its plain and ordinary meaning. (CIB at 14.) Alternatively, Springfree argues that if the phrase is construed it should be construed as “slender resilient bar.” (*Id.*) Springfree argues that construction is supported by the term’s plain and ordinary meaning, the patent’s intrinsic evidence, and Dr. Reinholtz’s testimony. (*Id.*)

Specifically, Springfree argues the ’174 patent discloses that flexible elongated rods (4) “may be made of any suitably resilient material, though in practice it has been found advantageous to use pultruded fiberglass of circular cross-section.” (*Id.*) Springfree argues the reference in the patent specification to “pultruded fiberglass of circular cross-section” is a specific embodiment. (*Id.*) Springfree argues that when this statement is considered with the teaching that “[t]he rods (4) may be made of any suitably resilient material,” one of ordinary skill would understand that other types of material and shapes are included within the scope of the patent. (*Id.*) Springfree argues this understanding is consistent with the plain and ordinary meaning of the word “rod,” which does not require a member with a circular cross-section. (*Id.*) Springfree argues that its expert, Dr. Reinholtz, testified that the word “rod” is used to describe a number of different shapes, and is not limited to a cylindrical bar. (*Id.*)

Springfree argues that Vuly’s construction—“straight cylindrical bar”—improperly imports a limitation from the preferred embodiment in the specification. (*Id.* at 15.) Springfree

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also argues Vuly's construction is contradicted by the statement in the specification that says the flexible elongated rods (4) "may be made of any suitably resilient material, though in practice it has been found advantageous to use pultruded fibreglass of *circular* cross-section." (*Id.*)

Springfree argues that under Vuly's construction, the word "circular" in this sentence would be entirely superfluous. (*Id.*) Springfree argues that Vuly's expert, Dr. Ball, acknowledged on cross-examination that it is possible to have rods in shapes other than of circular cross-section. (*Id.*)

Springfree alleges that Dr. Ball's opinion that the claimed "flexible elongated rods" must be of circular cross-section is premised on his belief that the rods must be inclined as in the disclosed embodiment in the '174 specification, and that it would not work if the rods were anything other than circular. (*Id.*) Springfree argues that Dr. Ball is incorrect because inclined rods are preferred but not required. (*Id.* at 16.) Springfree also argues that Dr. Ball agreed that none of the asserted claims require that the rods be "bent in a certain way." (*Id.*) Thus, Springfree argues it is of no consequence that a circular rod has "an infinite number of directions it can bend." (*Id.*)

Springfree argues that "[a]t bottom, Dr. Ball's argument at most relates to whether a trampoline with non-inclined rods is *enabled* by the disclosure of the '174 patent, but that is not a proper basis upon which to construe the claim term." (*Id.*)

Vuly's Position

Vuly argues the term "flexible elongated rod" should be construed as "straight cylindrical bar." (RIB at 15.) Vuly argues the '174 patent describes and illustrates in multiple locations that the flexible elongated rods fit into "cylindrical sleeves," "cylindrical elements," or "cylindrical holders." (*Id.*) According to Vuly, the patent never describes non-cylindrical rods, nor does it have a dependent claim specifying a cylindrical shape. (*Id.*)

Vuly argues the cylindrical design of the rods is inherent in the '174 patent. (*Id.*) Vuly argues the patent teaches to incline the rods "in a substantially tangential direction to the perimeter

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of the mat (2) as well as in the radial direction.” (*Id.*) Vuly argues that because the rods are bending at a nonorthogonal angle in both the horizontal and vertical planes, a circular cross-section is the design that makes engineering sense. (*Id.*) Vuly argues that during the hearing its expert, Dr. Ball, explained that the ’174 patent design requires the rods to bend in different directions based on the weight of the jumper. (*Id.*) Thus Vuly argues, in the cantilevered design of the ’174 patent, the rods need to be cylindrical to allow the design to work as a trampoline. (*Id.* at 16.)

Vuly argues the extrinsic evidence is also consistent with its proposed construction. (*Id.*) Vuly argues that engineering textbooks draw a clear distinction between cylindrical rods and bars made of different shapes because they behave differently. (*Id.*) Vuly argues that evidence of how the term “rod” was used at the time of the invention is consistent with a construction requiring that “rods” be cylindrical. (*Id.*) Vuly notes that the brochure for the first fiberglass materials Dr. Alexander purchased for his prototype clearly illustrates a “rod” as cylindrical, and identifies other shapes for what they are: not rods. (*Id.*) Vuly argues that this evidence demonstrates how one of ordinary skill in the art understood “rod” in the pultruded fiberglass industry, at the time of the invention. (*Id.*) Vuly argues that Dr. Alexander used the term the same way, likening the rods in the ’174 patent to fishing rods, and contrasting cylindrical rods with spring-elements of “other [cross]-sections.” (*Id.*)

Vuly argues Springfree’s proposed construction is inconsistent with the ’174 patent. (*Id.* at 17.) Vuly argues that nowhere in the patent does it state that “other shapes” or “other cross sections” are included within the scope of the ’174 patent. (*Id.*)

Discussion

The limitation “flexible elongated rod” is readily understood from the language of the limitation itself as a rod that is both flexible and elongated. Nothing in the claims or specification

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of the '174 patent indicates the applicant intended this limitation to have any special meaning beyond its plain and ordinary meaning. Accordingly, I find one of ordinary skill in the art would properly construe the term "flexible elongated rod" in accordance with its plain and ordinary meaning at the time of the invention.

Vuly's proposed construction of "flexible elongated rod" as a straight cylindrical bar is not persuasive. The '174 patent discloses that flexible elongated rods (4) "may be made of any suitably resilient material, though in practice it has been found advantageous to use pultruded fiberglass of circular cross-section." (JX-001 at 2:60-62.) The reference in the patent specification to "pultruded fiberglass of circular cross-section" is part of a discussion in the specification of a preferred embodiment of the invention. There is no indication that the applicant intended to limit the plain and ordinary meaning of the word "rod" to specific shapes or cross-sections. That is, I do not find the applicant was acting as his own lexicographer or that the language in the specification amounts to a disclaimer of claim scope. To the contrary, I read the above statement from the specification along with the statement that the "[t]he rods (4) may be made of any suitably resilient material" to indicate that other types of material and shapes are included within the scope of the patent. The fact is, if all rods were of circular cross-section as Vuly argues there would have been no reason for the applicant to describe the rods as having a "circular cross-section." Under Vuly's construction the word "circular" is superfluous. Accordingly, I find Vuly's construction of "flexible elongated rod" as "straight cylindrical bar" to impermissibly import a limitation from the preferred embodiment of the specification into the claims.

Vuly argues the cylindrical design of the rods is inherent in the '174 patent and that the patent teaches to incline the rods in a substantially tangential direction to the perimeter of the mat as well as in the radial direction. Vuly argues that because the rods in the '174 patent are bending

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at a nonorthogonal angle in both the horizontal and vertical planes, a circular cross-section is the design that makes engineering sense. Vuly argues that during the hearing, its expert, Dr. Ball, explained that the '174 patent design requires the rods to bend in different directions based on the weight of the jumper. Thus, Vuly argues, "in the cantilevered design of the '174 patent, the rods need to be cylindrical to allow the design to work as a trampoline."

Vuly's argument that the claimed "flexible elongated rods" must be of circular cross-section is premised on its belief that the rods must be inclined as in the disclosed preferred embodiment in the '174 specification, and that it would not work if the rods were anything other than circular. (See Tr. at 541:2-5 ("Number one, that's the only thing I see in the specifications. Number two, I don't see this trampoline being able to operate with inclined rods that aren't circular.")). This argument fails for multiple reasons. First, *inclined* rods are preferred but not required. (See JX-1 at 1:62-63 ("*Preferably*, each said rod extends upwards from said ring frame at an incline."); Tr. at 516:5-517:11.) Second, as previously discussed in connection with the "second retaining means," the '174 patent explicitly teaches that the rods may be vertically-oriented in which case the rods would not be inclined. (See JX-001 at 3:57-62.)

f. "retained" (claim 1)

Springfree's Proposed Construction	Vuly's Proposed Construction
Plain and ordinary meaning; or "Held or restrained."	connected at an incline

The Parties' Positions

Springfree's Position

Springfree argues that its expert, Dr. Reinholtz, testified that the term "retained" is readily understood without further construction and therefore should be given its plain and ordinary meaning. (CIB at 16.) Springfree asserts that if the term is construed, however, it should be

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construed as “held or restrained.” (*Id.*) Springfree argues that this is supported by the term’s plain and ordinary meaning, the patent’s intrinsic evidence, and Dr. Reinholtz’s testimony. (*Id.*)

Springfree argues that the ’174 patent uses the term “retain” (and the variations “retaining” and “retained”) in describing how the flexible elongated rods are secured to the flexible mat and the support element by first and second retaining means. (*Id.*) Springfree argues that in each instance, the patent uses the word “retain” to mean held or restrained, which is consistent with Springfree’s proposed construction. (*Id.* at 16-17.)

Springfree argues that Vuly, on the other hand, has proposed construing the term “retained” as “connected at an incline.” (*Id.* at 17.) Springfree argues that Vuly’s proposed construction goes well beyond the plain and ordinary meaning by improperly importing a limitation from the preferred embodiment disclosed in the specification. (*Id.*) Moreover, Springfree argues the doctrine of claim differentiation demonstrates that Vuly’s proposed construction is incorrect. (*Id.*) In particular, Springfree argues that dependent claim 2 specifies that “each said rod extends upwards from said support element at an incline.” (*Id.*) Springfree argues that because the “at an incline” limitation is the only meaningful difference between claims 1 and 2, there is an “especially strong” presumption that the limitation is not required for claim 1. (*Id.*) Springfree argues that there is nothing in the specification or the prosecution history that would overcome this strong presumption. (*Id.*)

Springfree argues that Dr. Ball asserts that the ’174 patent “teaches away from ‘retaining’ the ‘flexible elongated rods’ in any other formation.” (*Id.*) But Springfree argues that as Dr. Reinholtz testified, rather than teach away, the passage relied on by Dr. Ball explicitly discloses that vertically oriented rods can be used. (*Id.*) Springfree argues that while the passage does discuss potential safety drawbacks, it does so in order to explain the motivation behind using inclined rods in the preferred embodiment. (*Id.*) Springfree argues that explaining why inclined

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rods are preferred is quite different from saying that vertically oriented rods would not work or should not be used. (*Id.*) Springfree argues that a person of ordinary skill in the art at the time of the invention and patent application would have recognized that distinction. (*Id.*)

Vuly's Position

Vuly argues that the term “retained” should be construed as “connected at an incline.” (RIB at 17.) Vuly argues that this construction is supported by the intrinsic evidence, which teaches only one way to retain the rods to achieve the “present invention”—inclining the rods at a radial and tangential direction. (*Id.*) Vuly argues that the '174 patent teaches away from “retaining” the “flexible elongated rods” in any other formation. (*Id.*) Vuly argues that the patent teaches that, to avoid injury, one must incline the rods in a “substantially tangential direction to the perimeter of the mat, as well as a radial direction.” (*Id.*) Vuly argues the '174 patent does not include any description or figures to teach one of ordinary skill in the art to “retain” the “flexible elongated rods” in any other direction except tangentially and radially inclined. (*Id.* at 17-18.) Vuly argues that inclining the rods is essential to the invention to avoid user injury, and the Court should construe the claim element “retained” to include this requirement. (*Id.* at 18.)

Vuly argues Springfree's proposed construction for “retained” tries to expand the claims of the '174 patent beyond what Dr. Alexander invented, violating the basic tenets of claim construction. (*Id.*) Vuly argues that the specification's emphasis on the “present invention” is an important factor in defining the claims. (*Id.*)

Discussion

The parties dispute the proper meaning of the word “retained” in the limitation “said flexible rod is retained at a first and second end by said first and second retaining means respectively.” The word “retained” is a commonly used and understood term. I find nothing in the patent claims or specification to indicate the applicant intended the word to have a specific or

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unique meaning. Accordingly, I find the word “retained” is properly construed to have its plain and ordinary meaning of “to hold or keep something in place.”

I find Vuly’s proposed construction not persuasive. Vuly’s proposed construction goes beyond the plain and ordinary meaning of the term by impermissibly importing a limitation from the preferred embodiment disclosed in the specification. Also, the doctrine of claim differentiation suggests Vuly’s proposed construction is incorrect. In particular, dependent claim 2 specifies that “each said rod extends upwards from said support element at an incline.” Because the “at an incline” limitation is the only meaningful difference between claims 1 and 2, there is a presumption that the additional limitation of claim 2 (in this case “at an incline”) is not required for claim 1.

Vuly argues that its construction is correct because the ’174 patent teaches away from “retaining” the flexible elongated rods in any formation other than at an incline. Contrary to Vuly’s argument, however, the ’174 patent explicitly discloses that vertically-oriented rods can be used. CX-177C (Reinholtz DWS) at Q/A 126; JX-1 at 3:57-62 (“This bouncing mechanism could be achieved . . . by rods (4) orientated vertically upright.”). While it is true that the passage discusses potential safety drawbacks of such a design, I agree with Springfree that it does so in order to explain the motivation behind using inclined rods in the preferred embodiment. Nowhere does the specification say that vertically oriented rods would not work or should not be used. As Springfree’s expert, Dr. Reinholtz, testified, one of ordinary skill would know that implementing a trampoline with vertically oriented rods based on the disclosure in the ’174 patent simply would be a matter of changing the orientation of the cylindrical holders and the retaining means associated with the mat so that the rods would no longer be inclined. (See CX-177C (Reinholtz DWS) at Q/A 126.)

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g. “secured between said mat and said support element” (claim 13)

Springfree’s Proposed Construction	Vuly’s Proposed Construction
Each flexible elongated rod extends between, and is held or restrained by, the flexible mat and the support element.	connected at an incline with the end piece of the first end of the flexible elongated rod within pockets or pouches of the mat, and the second end of the flexible elongated rods within cylindrical elements attached to the perimeter of support element.

The Parties’ Arguments

Springfree’s Position

Springfree argues that its expert, Dr. Reinholtz, testified that a person of ordinary skill in the art at the time of the invention and patent application filing would understand the claim phrase requiring the flexible elongated rods to be “secured between said mat and said support element” to mean that “each flexible elongated rod extends between, and is held or restrained by, the flexible mat and the support element.” (CIB at 20.) Springfree argues that this construction is supported by the phrase’s plain and ordinary meaning, the patent’s intrinsic evidence, and Dr. Reinholtz’s testimony. (*Id.*) Specifically, Springfree argues that the ’174 patent discloses that “each rod is secured at one end to the mat and at the other end to the support frame.” (*Id.*) Springfree argues the ’174 patent discloses structures associated with the flexible mat and with the frame for retaining the rods. (*Id.*) More specifically, Springfree argues the patent discloses that in the preferred embodiment, the flexible mat has pockets or pouches (5) formed with an aperture on the non-contact surface (*i.e.*, underside) of the mat that hold or restrain a first end of the flexible elongated rod. (*Id.*) Springfree also argues that the preferred embodiment of the support frame or support element has tubular cylindrical holders (7) that hold or restrain a second end of the flexible elongated rod. (*Id.* at 20-21.) Thus, Springfree argues the specification teaches the flexible elongated rods extend between the flexible mat and the support element and are held or restrained by the structures described above. (*Id.* at 21.) Accordingly, Springfree argues its construction for

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the phrase “secured between said mat and said support element”—*i.e.*, that “each flexible elongated rod extends between, and is held or restrained by, the flexible mat and the support element”—is consistent with the disclosure in the ’174 patent. (*Id.*)

Springfree argues that Vuly’s proposed construction goes well beyond the plain and ordinary meaning of the claim phrase by importing limitations from the preferred embodiments disclosed in the specification. (*Id.*) Springfree argues that Dr. Ball’s testimony is illustrative of this point. (*Id.*) For example, Springfree argues that in support of Vuly’s construction, Dr. Ball testified that “[t]he ’174 patent teaches a specific way to secure flexible elongated rods to a mat and a support element that is unique to the geometric configuration of the disclosed trampoline.” (*Id.*) Springfree notes that the Federal Circuit has warned repeatedly against limiting the plain and ordinary meaning of a claim to the preferred embodiment disclosed in the specification.

Springfree argues that a review of the various dependent claims also makes clear that independent claim 13 should not be so limited. (*Id.* at 22.) For example, Springfree argues that some of the dependent claims demonstrate that the applicant knew how to claim physical elements of the preferred embodiment and that the applicants’ decision not to include such limitations in claim 13 indicates that claim 13 has a broader claim scope. (*Id.*)

Vuly’s Position

Vuly argues that the term “secured between said mat and said support element” should be construed as “connected at an incline with the end piece of the first end of the flexible elongated rod within pockets or pouches of the mat, and the second end of the flexible elongated rods within cylindrical elements attached to the perimeter of support element.” (RIB at 18.) Vuly argues that this construction is supported by the intrinsic evidence. (*Id.*) Additionally, Vuly argues that its construction provides the proper deference to the statements in the specification that define “the present invention.” (*Id.*)

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Vuly argues that the '174 patent teaches only one way to secure flexible elongated rods to a mat and a support element to achieve the goal of avoiding injury of a user from contact with exposed springs or frame: move the springs and frame so they are no longer adjacent to the bouncing surface, and extend the mat over the entire top surface so there is no way a user can contact the springs and frame. (*Id.*) Vuly argues that to implement this objective, the patent teaches that the rods must be (1) connected at an incline (because vertical rods will cause injury or damage); (2) have the end piece of the first end of the flexible elongated rod within pockets or pouches of the mat; and (3) the second end of the flexible elongated rods must be within cylindrical elements attached to the perimeter of support element (because that is the structure that can incorporate the tubular rods bending outward in the radial and tangential directions). (*Id.*)

Vuly argues that claim 13 cannot extend to all possible structures that hold or restrain a rod to a mat and support element, because all such structures would not achieve the object of moving the springs and frame such that no possible contact with a jumping user is possible. (*Id.*) Vuly asserts that Springfree's expert acknowledged that claim 13's seemingly boundless construction provides "very broad coverage" and may be a potential "invention by patent attorney." (*Id.*) Vuly argues that Springfree's interpretation of this claim element would expand the scope of claim 13 far beyond anything Dr. Alexander invented. (*Id.*)

Vuly argues that realizing the broadness of its claim construction, Springfree's expert selectively narrowed the scope of the term "secure" during the hearing, specifically in response to the '135 patent. (*Id.*) Vuly asserts that Dr. Reinholtz even tried to argue that "secured" should have two different definitions within the same claim limitation, one for the connection between the rod and pocket (which allows movement) and one for the connection between the rod and support element (no movement). (*Id.*) Vuly argues that Dr. Reinholtz further testified that "secured" should be construed to cover the structure that "secures" in the '174 patent and equivalents. (*Id.*)

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Thus, Vuly argues that even Springfree acknowledges that its broad construction of “secured” dooms the ’174 patent to invalidity. (*Id.*)

Discussion

I have already construed, *supra*, the limitations “flexible mat” and “support element.” Thus, beyond providing some clarity as to meaning of the word “secured,” I find no reason to construe this limitation further as its meaning is readily understood.

With regard to the word “secured,” the abstract states that “each rod is secured at one end to the mat and at the other end to the support frame.” Further, in describing the preferred embodiment of the invention the specification states that “the rods (4) are each equipped at a first end with a protective end-piece (6),” “the protective end piece configured to be releasably inserted and retained within pouches (5).” The specification also states that “the end-pieces (6) shown are exemplary and alternative shapes may be employed providing they afford a secure means of retaining a rod (4) within a pouch (5) whilst under tension.” Additionally, the specification describes the second end of the rod as being “inserted into a cylindrical holder (7), which is closed (or pinched) at one end. Thus, as illustrated above, the word “secured” is used in the specification in accordance with its plain and ordinary meaning. Nothing in the specification indicates that the applicant intended the word “secured” to have a specialized meaning. Therefore, I am persuaded by Springfree’s argument that “secured” means “held or restrained.”

I am not persuaded by Vuly’s proposed construction. Vuly’s construction impermissibly imports limitations from the preferred embodiment into the claims. Additionally, the language of the claims counsels against adopting Vuly’s construction as there are a number of dependent claims that clearly demonstrate that the applicant knew how to claim the elements of the preferred embodiment when intended. For example, dependent claim 2 states “each said rod extends upwards from said support element *at an incline*”, claim 8 states “said first retaining means

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comprises a plurality of pockets each formed with an aperture on said non-contact surface, and claim 11 states “said second retaining means comprises a plurality of cylindrical elements attached to the perimeter of said support elements.” That the applicant chose not to include such limitations in claim 13 indicates that the claim has a broader scope.

Accordingly, based on the intrinsic evidence, I find one of ordinary skill in the art would construe the limitation “secured between said mat and said support element” to require each of the plurality of spaced flexible elongated rods to be “held or restrained between the mat and the support element.”

C. Infringement

1. Claim 1

Springfree’s expert, Dr. Reinholtz, testified in detail that the accused Vuly Thunder products infringe claim 1 of the ‘174 patent. (CX-177C (Reinholtz DWS) at Q/A 146, 152-276.)

Vuly argues that its Vuly Thunder trampolines do not infringe claim 1 of the ‘174 patent, because the Vuly Thunder does not have: (1) “a flexible mat”; (2) “first retaining means”; (3) “second retaining means”; (4) “a support element”; or (5) “flexible elongated rods”.

For the reasons discussed in detail below, I find Vuly’s arguments are not persuasive. Accordingly, based on the testimony of Dr. Reinholtz and my discussion of the record evidence, *infra*, I find Springfree has proven by a preponderance of the evidence that the accused Vuly Thunder trampolines infringe claim 1 of the ‘174 patent.

a. “flexible mat”

Vuly argues only that “[u]nder Vuly’s construction, ‘flexible material defining an area exceeding that of the support element,’ there is no literal infringement and no infringement under the doctrine of equivalents. As discussed in detail, *supra*, I did not adopt Vuly’s construction of

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the limitation “flexible mat.” Accordingly, based on the unrebutted testimony of Dr. Reinholtz, I find the Vuly Thunder literally includes the claimed “flexible mat.”

b. “first retaining means”

Springfree argues the Vuly Thunder literally includes a plurality of first retaining means. Alternatively, Springfree argues the Vuly Thunder has a plurality of first retaining means under the doctrine of equivalents. Vuly argues that the structure used by the Vuly Thunder is not the same or structurally equivalent to the claimed first retaining means.

(1) literal infringement

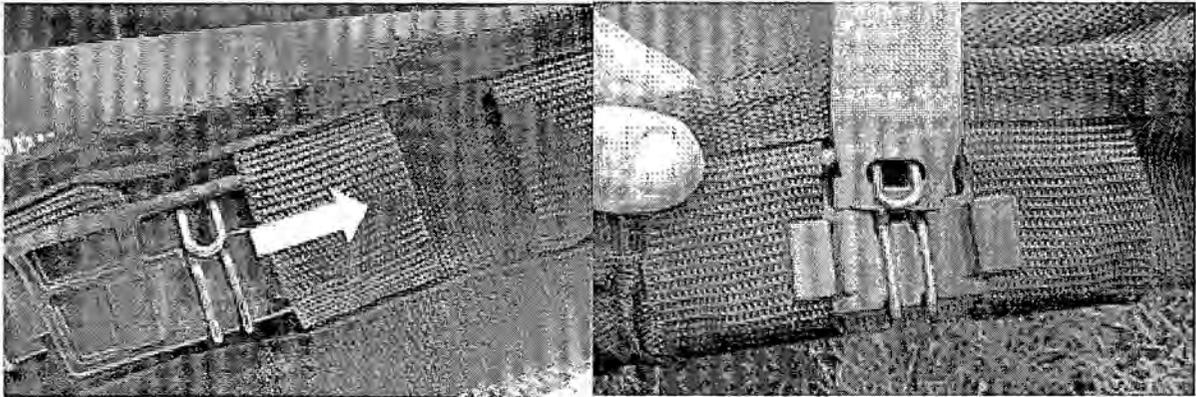
“Literal infringement of a means-plus-function limitation requires that the relevant structure in the accused device perform the identical function recited in the claim and be identical or equivalent to the corresponding structure in the specification.” *Applied Med. Res. v. U.S. Surgical Corp.*, 448 F.3d 1324, 1333 (Fed. Cir. 2006). A structure in the accused device constitutes an equivalent to the corresponding structure in the patent only if the accused structure performs the identical function “in substantially the same way, with substantially the same result.” *Id.*; see *Kemco Sales, Inc. v. Control Papers Co.*, 208 F.3d 1352, 1364 (Fed. Cir. 2000) (stating that in order to literally infringe, “the accused structure must either be the same as the disclosed structure or be a section 112, paragraph 6 ‘equivalent,’ i.e., (1) perform the identical function and (2) be otherwise insubstantially different with respect to structure”).

I have held herein the function of the first retaining means is to retain a first end of a flexible elongated rod. I have identified the structure in the specification of the ‘174 patent corresponding to that function (*i.e.*, I have construed the first retaining means) as: (1) a pocket or pouch formed with an aperture on the non-contact (a.k.a., lower surface) of the flexible mat; (2) a pouch sewn into the fabric of the mat with an aperture on the non-contact (a.k.a., lower surface) of

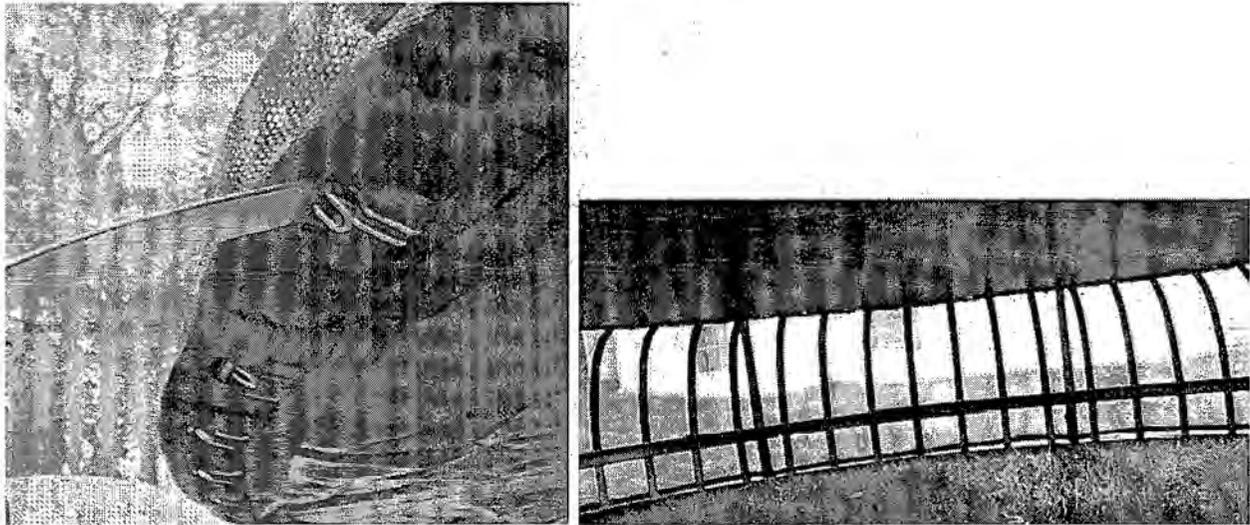
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the flexible mat; or (3) an end piece and a pouch formed with an aperture on the non-contact (a.k.a., lower surface) of the flexible mat adapted to retain the end piece.

The portion of the Vuly thunder relevant to this discussion of the first retaining means is illustrated in the two pictures below.



The pictures show the non-contact surface of the flexible mat of the Vuly Thunder. Sewn to the non-contact surface are shown two straps of material (like belt loops), each strap open on two sides. Also shown is a hook assembly, which is inserted between the two straps such that the metal hook of the hook assembly is located in the space formed between the two straps. As plainly shown in the picture on the right, the two straps retain the hook assembly. As shown in the picture on the right above and the picture on the left below, the metal hook of the hook assembly hooks through a slot in a first end of a leaf spring (which I have held herein to be equivalent to a flexible elongated rod).



By doing so, as shown in the pictures above, the hook assembly retains the first end of the leaf spring.

Because the straps (*i.e.*, belt loops) retain the hook assembly and the hook assembly retains a first end of a leaf spring, I find the first end of the leaf spring is retained by the straps. The fact that the straps do not *directly* retain the first end of the leaf spring is of no consequence as there is no such requirement in claim 1. Claim 1 requires only that the first end of the flexible elongated rod (*i.e.*, leaf spring) is retained by the first retaining means and certainly without the straps the leaf spring would not be retained at a first end.

Moreover, the applicant's use of the word "comprising" as a transition from the preamble to the body of the claim "signals that the entire claim is presumptively open-ended." *Gillette Co. v. Energizer Holdings, Inc.*, 405 F.3d 1367, 1371 (Fed.Cir.2005) "The transition 'comprising' creates a presumption that the recited elements are only a part of the device, that the claim does not exclude additional, unrecited elements." *MagSil Corp. v. Hitachi Global Storage Technologies, Inc.*, 687 F.3d 1377, 1383 (Fed. Cir. 2012) (citing *Crystal Semiconductor Corp. v. TriTech Microelectronics Int'l, Inc.*, 246 F.3d 1336, 1348 (Fed.Cir.2001)).) Thus the fact that the

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first end of the leaf spring is retained by the straps through the hook assembly will not overcome Springfree's infringement allegations.

Moreover still, one of the corresponding structures identified in the specification of the '174 patent for retaining the first end of the flexible elongated rod is "an end piece and a pouch formed with an aperture on the non-contact (a.k.a., lower surface) of the flexible mat adapted to retain the end piece." In this embodiment, the hook assembly (*i.e.*, end piece) is specifically contemplated.

Accordingly, for the reasons above, I find the straps in the Vuly Thunder, as well as the straps plus the hook assembly, perform the claimed function of retaining a first end of a flexible elongated rod. Having determined the structures in the Vuly Thunder identified by Springfree's expert perform exactly the same function as the claimed first retaining means, I will now examine whether those structures are identical or equivalent to any of the corresponding structures identified in the '174 patent for performing the function of retaining a first end of an elongated rod.

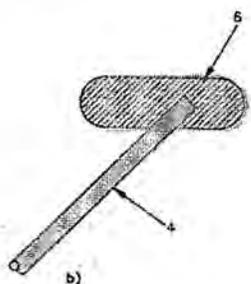
Springfree's expert, Dr. Reinholtz, opined that the "Vuly Thunder has pockets around the perimeter of the mat which retain the hook assembly." (CX-177C (Reinholtz DWS) at Q/A 187) I disagree. One of ordinary skill in the art would not understand the straps of material referred to by Dr. Reinholtz as a pocket or pouch. As previously discussed the straps of material are open on two sides. A pocket or pouch, by contrast, has only a single opening. Thus, I do not find the straps in the Vuly Thunder to be the same as a pocket or pouch formed with an aperture on the non-contact side (a.k.a., lower surface) of the flexible mat or a pouch sewn into the fabric of the mat with an aperture on the non-contact side (a.k.a., lower surface) of the flexible mat. Neither for the same reason do I find the hook assembly and straps to be the same as an end piece and a pouch formed with an aperture on the non-contact side (a.k.a., lower surface) of the flexible mat adapted

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to retain the end piece. (RX-200C at Q/A 164-165; RX-194C at Q/A 122-129; *see also* Reinholtz Tr. at 287:10-288:25.)

That being said, however, I do find the straps, as well as the hook assembly and straps, to be equivalent structure. In the Vuly Thunder the straps are sewn to the non-contact side of the flexible mat. Additionally, each pair of straps used to retain a hook assembly form an opening (*i.e.*, aperture) between the straps where the hook protrudes. The evidence shows the straps in the Vuly Thunder retain the hook assembly to the mat in substantially the same way as the pocket or pouch disclosed in the '174 patent retains the first end of the flexible elongated rod to the mat. Moreover, in both cases the results are identical,

Further, the evidence shows the hook assembly and straps in the Vuly Thunder retain a first end of a leaf spring in practically the identical way in which the end piece and pouch retain the first end of the flexible elongated rod in the preferred embodiment of the '174 patent. The striking similarity between the two structures is shown below.



JX-1 at FIG. 4(b)



CX-159 at 1541(coloring added)

The '174 patent teaches that the end piece may be removed from the first end of the flexible elongated rod. (JX-1 at 2:10-14, 5:5-6.) Likewise the hook assembly in the Vuly Thunder is removable from the first end of the leaf spring. The '174 patent also teaches that the pocket or pouch retains the end piece. Substantially similarly, the straps in the Vuly Thunder retain the hook assembly. Additionally, just as the pocket or pouch in the '174 patent allows some relative

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motion between the rod, its end cap, and the mat, the evidence shows so to do the straps of the Vuly Thunder between the leaf spring, its hook assembly, and the mat. Moreover, in both cases the result is identical.

Accordingly, I find the straps of the Vuly Thunder to be equivalent to a pocket or pouch formed with an aperture on the non-contact side (a.k.a., lower surface) of the flexible mat. I also find the straps of the Vuly Thunder to be equivalent to a pouch sewn into the fabric of the mat with an aperture on the non-contact side (a.k.a., lower surface) of the flexible mat. Further, I find the hook assembly and straps to be the same as an end piece and a pouch formed with an aperture on the non-contact side (a.k.a., lower surface) of the flexible mat adapted to retain the end piece.

(2) infringement under the doctrine of equivalents

As this court has recently clarified, a structural equivalent under § 112 must have been available at the time of the issuance of the claim. *See Chiuminatta*, 145 F.3d at 1310. An equivalent structure or act under § 112 cannot embrace technology developed after the issuance of the patent because the literal meaning of a claim is fixed upon its issuance. An “after arising equivalent” infringes, if at all, under the doctrine of equivalents. *See Warner–Jenkinson*, 117 S.Ct. at 1052; *Hughes Aircraft Co. v. U.S.*, 140 F.3d 1470, 1475, 46 USPQ2d 1285, 1289 (Fed.Cir.1998). Thus, the temporal difference between patent issuance and infringement distinguish an equivalent under § 112 from an equivalent under the doctrine of equivalents. *See Chiuminatta*, 145 F.3d at 1310. In other words, an equivalent structure or act under § 112 for literal infringement must have been available at the time of patent issuance while an equivalent under the doctrine of equivalents may arise after patent issuance and before the time of infringement. *See Warner–Jenkinson*, 117 S.Ct. at 1053. An “after-arising” technology could thus infringe under the doctrine of equivalents without infringing literally as a § 112, ¶ 6 equivalent. Furthermore, under § 112, ¶ 6, the accused device must perform the identical function as recited in the claim element while the doctrine of equivalents may be satisfied when the function performed by the accused device is only substantially the same. *See Cybor*, 138 F.3d at 1456; *Hughes Aircraft*, 140 F.3d at 1475.

Although § 112, ¶ 6 and the doctrine of equivalents are different in purpose and administration, “a finding of a lack of literal infringement for lack of equivalent structure under a means-plus-function limitation may preclude a finding of equivalence under the doctrine of equivalents.” *Chiuminatta*, 145 F.3d at 1311. Both equivalence analyses, after all, apply “similar analyses of insubstantiality of the differences.” *Id.* This confluence occurs because infringement requires, either literally or under the doctrine of equivalents, that the accused product or process incorporate each limitation of the claimed invention. *See Warner–Jenkinson*, 117

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S.Ct. at 1049; *Pennwalt*, 833 F.2d at 935. Therefore, if an accused product or process performs the identical function and yet avoids literal infringement for lack of a § 112, ¶ 6 structural equivalent, it may well fail to infringe the same functional element under the doctrine of equivalents. See *Chiuminatta*, 145 F.3d at 1311. This same reasoning may be applied in reverse in certain circumstances. Where, as here, there is identity of function and no after-arising technology, a means-plus-function claim element that is found to be infringed only under the doctrine of equivalents due to a jury instruction failing to instruct on § 112, ¶ 6 structural equivalents is also literally present in the accused device.

Al-Site Corp. v. VSI Intern., Inc., 174 F.3d 1308, 1320-21 (Fed. Cir. 1999)(internal footnote omitted).

Neither party has argued that the structures identified by Springfree in the Vuly Thunder as the first retaining means are after-arising equivalents. Additionally, as discussed *supra*, the structures identified by Springfree as the first retaining means perform the identical function as the first retaining means in the '174 patent. Thus, in this instance, the analysis of statutory equivalents under 112 ¶ 6 and the doctrine of equivalents are coextensive.

c. "second retaining means"

Springfree argues the Vuly Thunder literally includes a plurality of second retaining means. Alternatively, Springfree argues the Vuly Thunder has a plurality of second retaining means under the doctrine of equivalents. Vuly argues that the structure used by the Vuly Thunder is not the same or structurally equivalent to the claimed second retaining means.

(1) literal infringement

The Parties' Arguments

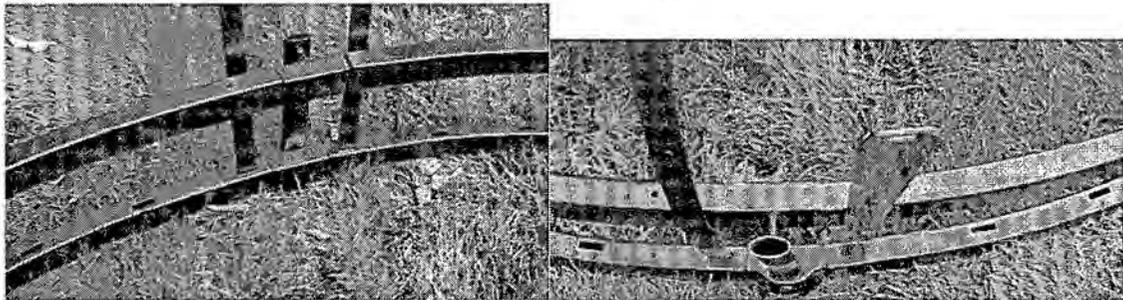
Discussion

"Literal infringement of a means-plus-function limitation requires that the relevant structure in the accused device perform the identical function recited in the claim and be identical or equivalent to the corresponding structure in the specification." *Applied Med. Res. v. U.S. Surgical Corp.*, 448 F.3d 1324, 1333 (Fed. Cir. 2006).

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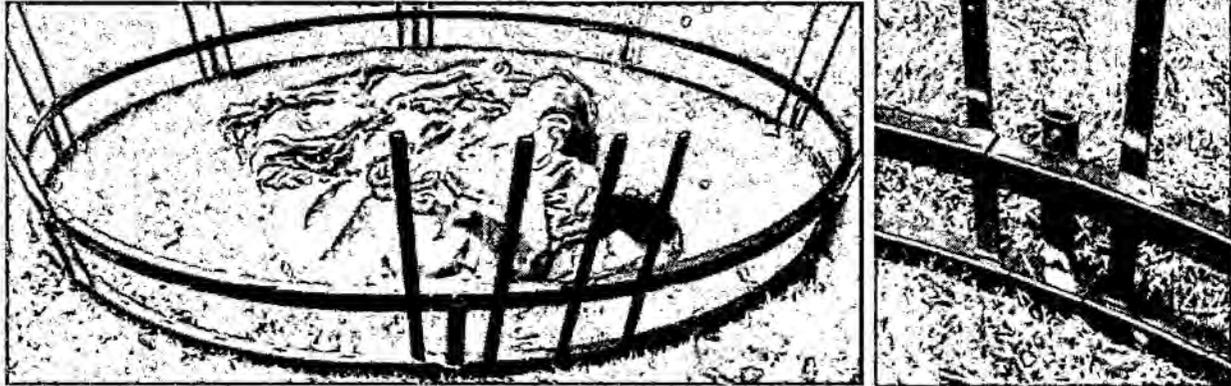
I have held herein that the function of the second retaining means is to retain a second end of a flexible elongated rod. I have identified the structure in the specification of the '174 patent corresponding to that function (*i.e.*, I have construed the second retaining means) as: (1) a cylindrical element; or (2) a tubular cylindrical holder that is closed (or pinched) at one end.

The portion of the Vuly thunder relevant to this discussion of the second retaining means is illustrated in the two pictures below.



The above pictures show a portion of the upper and lower frame of the Vuly Thunder.

Springfree's expert, Dr. Reinholtz, opined that the slots in the lower frame are the claimed plurality of second retaining means. As is plainly seen in the pictures above and the pictures below, the evidence shows each slot (*i.e.*, rectangular hole) in the lower frame supports a second end of a leaf spring.



Accordingly, I find a slot in the lower frame of the Vuly Thunder performs the claimed function of retaining a second end of a flexible elongated rod. Having determined the structure in the Vuly Thunder identified by Springfree's expert performs exactly the same function as the claimed second retaining means, I will now examine whether that structure is identical or equivalent to any of the corresponding structures identified in the '174 patent for performing the function of retaining a second end of an elongated rod.

As is self-evident from the pictures above, a slot in the lower frame of the Vuly Thunder is not a cylindrical element or a cylindrical holder. Thus, I do not find the slot to be the same as the structure identified in the '174 patent for retaining the second end of a flexible elongated rod. That being said, I find the slot to be equivalent structure.

The cylindrical element and the cylindrical holder with closed end disclosed in the '174 patent have an open end that receives the second end of the rod. In the preferred embodiment of the invention the rod has a circular cross-section to match the shape of the opening of the

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cylindrical element/holder. Substantially similarly, the slot in the lower frame of the Vuly Thunder receives the second end of the leaf spring. Likewise, the opening (*i.e.*, the slot) in the lower frame of the Vuly Thunder is rectangular in shape to match the shape of the leaf spring, which has a rectangular cross-section at its second end. Additionally, substantially similar to the cylindrical holder with closed end disclosed in the '174 patent, the underside of the lower frame in the Vuly Thunder acts a closed end supporting the end of the leaf spring and preventing the leaf spring from going through the frame. Moreover, identically to the cylindrical element/holder of the '174 patent, a slot in the lower frame of the Vuly Thunder retains a second end of the leaf spring (*i.e.*, flexible elongated rod) such that the other end of the leaf spring (*i.e.*, flexible elongated rod) is allowed to bend and provide the spring force in the trampoline. Thus, I find a slot in the lower frame of the Vuly Thunder retains a second end of the leaf spring in substantially the same way to achieve substantially the same result as the cylindrical element/holder of the '174 patent.

(2) infringement under doctrine of equivalents

Neither party has argued that the structures identified by Springfree in the Vuly Thunder as the second retaining means are after-arising equivalents. Additionally, as discussed *supra*, the structures identified by Springfree as the second retaining means perform the identical function as the second retaining means in the '174 patent. Thus, in this instance, the analysis of statutory equivalents under 112 ¶ 6 and the doctrine of equivalents are coextensive.

d. “support element”

Vuly argues that “[u]nder Vuly’s claim construction, the support element must be smaller than the mat, and because the Vuly Thunder has a mat that is smaller than the area of the support element, there is no literal infringement.” As discussed in detail, *supra*, I did not adopt Vuly’s construction of the limitation “support element.” Rather, I held the limitation “support element” is

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properly construed to mean “an element that supports a plurality of flexible elongated rods.”

Accordingly, I find Vuly’s non-infringement argument based on its construction not persuasive.

Vuly also argues that under Springfree’s construction of the limitation “support element” there is no infringement. Specifically, Vuly argues that the frame of the Vuly Thunder identified by Dr. Reinholtz as meeting the “support element” limitation is not “rigid,” as required by Springfree’s construction. Vuly argues that the leaf springs lock the frame tubes and joiners of the Vuly Thunder together. Thus, Vuly argues without the leaf springs the frame tubes and joiners of the Vuly Thunder are not rigid.

I find this argument not persuasive for at least two reasons. First, as construed herein, the support element is not required to be rigid. Second, even if the support element were required to be rigid, Springfree’s infringement allegations are based on an assembled Vuly Thunder trampoline (*see* Tr. at 361:10-20) and when assembled the evidence shows the lower ring of the Vuly Thunder is rigid. (*See* CX-159 at 1549-50; Tr. at 408:4-20.)

As construed herein, the “support element” is “an element that supports the plurality of flexibly elongated rods.” As can be plainly seen in the picture of the partially-assembled Vuly Thunder below the lower ring provides support for the plurality of leaf springs.



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(CX-159 at 1550; CX-177C (Reinholtz DWS) at Q/A 211, 215, 217; Tr. at 524:2-8.) Thus, the lower ring is an element that supports the plurality of flexibly elongated rods. Accordingly, I find the Vuly Thunder includes a “support element.”

a. “flexible elongated rods”

Springfree argues that the plurality of “leafsprings” in the Vuly Thunder are a plurality of flexible elongated rods under either party’s construction of “flexible elongated rods.” (CIB at 23.)

(1) literal infringement

Springfree argues that under its proposed construction of the term “flexible elongated rods” the leafsprings in the Vuly Thunder are literally “flexible elongated rods.” (*Id.*) Springfree argues that the leafsprings are straight elongated bars having defined ends (*i.e.*, an upper end to engage and be retained at the mat, and a lower end that inserts into an aperture on the frame). (*Id.*)

Springfree also argues that its expert, Dr. Reinholtz, testified that manufacturers’ data for composite rods and fiberglass rods showed that the term “rod” was used to describe multiple non-circular cross-sectional shapes including rods that were rectangular in cross-section, and even square, dog bone, and oval shapes. (CRB at 18-19.) Further, Springfree argues that the leafsprings are flexible so that they can be bent into their position during assembly. (CIB at 23.)

Contrary to Springfree’s argument, I do not find the leaf springs used in the Vuly Thunder to literally be flexible elongated rods. Based on the evidence of record, the plain and ordinary meaning of “flexible elongated rod” would not include leaf springs. (*See* RX-200C (Ball RWS) at Q/A 201; *see also* Tr. at 302:7- 305:15.) There is no evidence that persons skilled in the art referred to leaf springs—a known mechanical component—as rods in the 1999 time frame. Moreover, even if I accept Dr. Reinholtz’s testimony that the term “rod” includes non-circular cross-sectional shapes, the Vuly Thunder leaf springs are still not literally flexible elongated rods. A leaf spring is not a slender resilient bar, but rather the evidence shows each leaf spring has three

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layers of metal of varying length in a tapered design that are riveted and welded together. (*Id.* at Q/A 115, 117; RX-145C; RPX-1.c.) At the top of the leaf spring, closest to the mat, there is only one layer, and the bottom has three layers. (*Id.*) Thus, for the reasons above, I find the leaf springs used in the Vuly Thunder are not literally the claimed “flexible elongated rods.”

(2) infringement under the doctrine of equivalents

Springfree argues that even if the leaf springs do not literally infringe they still infringe under the doctrine of equivalents. (CIB at 23.) To infringe under the doctrine of equivalents, the Vuly Thunder leaf springs must be insubstantially different from the claimed flexible elongated rods. One way to show such insubstantial difference is to show that the leaf springs perform substantially the same function, in substantially the same way, to produce substantially the same result. This is known in Federal Circuit jurisprudence as the triple identity test. *TIP Systems, LLC v. Phillips & Brooks/Gladwin, Inc.*, 529 F.3d 1364, 1376 (Fed. Cir. 2008) (“Whether equivalency exists may be determined based on the ‘insubstantial differences’ test or based on the ‘triple identity’ test, namely, whether the element of the accused device ‘performs substantially the same function in substantially the same way to obtain the same result.’ ”).

As discussed in more detail below, the evidence shows the rods in the ’174 patent connect the mat to the support element so as to support the mat above the support element and provide a spring force to the mat (function) by providing an elongated member that is capable of bending and that extends between and is retained by the support element and the flexible mat (way) such that the mat is suspended above the support element by the elongated members so as to provide a bouncing surface (result). (CX-177C (Reinholtz DWS) at Q/A 255-261.) Because the evidence shows the leaf springs perform substantially the same function, in substantially the same way, to achieve substantially the same result, I find the leaf springs used in the Vuly Thunder to be

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equivalent to the claimed flexible elongated rods of the '174 patent. The Vuly Thunder leaf springs are flexible bar assemblies and are equivalent to the claimed "flexible elongated rods."

Vuly, and its expert Dr. Ball, attempt to distinguish the functionality and the way the rods work. However, Vuly's argument relies entirely on an improper attempt to limit the '174 patent to the preferred embodiment of the invention where the rods are at a tangential incline (*i.e.*, swirl pattern). In so doing, Vuly ignores the explicit teaching of the '174 patent that the rods can be arranged in a "no swirl pattern" or a vertically upright pattern. (*See* JX-1 at 3:51-62.) Thus, I find Vuly's argument not persuasive.

(a) Function

The leaf springs in the Vuly Thunder perform substantially the same function as the flexible elongated rods. Specifically, the Vuly leaf springs support the mat above the support element and provide a spring force or bouncing force to the mat. (*See* CX-159 at 1536-1537, 1540.) When fully assembled, the leaf springs hold and support the mat above the frame. (*Id.*) The evidence shows the leaf springs are flexible as force is applied to bend the leaf springs into place during assembly. (*Id.* at 1539, 1554.) The leaf springs, when bent, exert a force opposite in direction to the bending force. The evidence shows this force exerted by the bent leaf spring is utilized by the Vuly Thunder as the bouncing force. (CX-177C (Reinholtz DWS) at Q/A 256-257.)

(b) Way

The Vuly Thunder leaf springs perform this function in substantially the same way as the circular rods in the '174 patent. Like the flexible elongated rods, the leaf springs provide an elongated member that is capable of bending and that extends between and is retained by the support element and the flexible mat. (CX-159 at 1539, 1551-1552.) When assembled, the leaf

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springs extend between and are retained by the frame (support element) and the mat. (*Id.* at 1536, 1548, 1553; CX-177C (Reinholtz DWS) at 258-259.)

(c) Result

The leaf springs also achieve substantially the same result as the flexible elongated rods (*i.e.*, the mat is suspended above the support element by the elongated members so as to provide a bouncing surface). By inserting the lower end of the leaf springs into the frame and engaging the upper end with the perimeter of the mat, the Vuly Thunder mat is supported above both the leaf springs (rods) and above the frame (support element). (*See, e.g.*, CX-159 at 1536-1540, 1546-1550.) The resulting mat has an upper surface that a user can bounce on. (*Id.* at 1554; CX-160 at 1900.)

Specifically, the evidence shows the Vuly Thunder's leaf springs are inserted into and held in place by the holes in the frame, are spaced apart at regular intervals, and extend upwards to engage with the mat. The leaf springs are bent into place so that their top ends engage with and are secured by the mat. (*See, e.g.*, CX-158C at 1922; CX-160C at 1899.) Thus, like the elongated rods of the '174 patent, the leaf springs of the Vuly Thunder support the mat above the support element. (*See* CX-160 at 1900.)

2. Claim 13

Springfree's expert, Dr. Reinholtz, testified in detail that the accused Vuly Thunder products infringe claim 13 of the '174 patent. (CX-177C (Reinholtz DWS) at Q/A 146, 277-304.)

Vuly argues its Vuly Thunder Trampolines do not infringe claim 13, because the Vuly Thunder does not have: (1) "a flexible mat"; (2) "a support element"; (3) "a plurality of flexible elongated rods"; or (4) "a plurality of spaced flexible elongated rods secured between said mat and said support element so as to support said mat above said support element." (RIB at 33.)

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For the reasons discussed in detail below, I find Vuly's arguments are not persuasive. Accordingly, based on the testimony of Dr. Reinholtz and my discussion of the record evidence, *infra*, I find Springfree has proven by a preponderance of the evidence the accused Vuly Thunder trampolines infringe claim 13 of the '174 patent.

a. terms appearing in claim 1

As discussed *supra*, with regard to claim 1, I find the Vuly Thunder has: (1) "a flexible mat"; (2) "a support element"; and (3) "a plurality of flexible elongated rods".

b. "a plurality of spaced flexible elongated rods secured between said mat and said support element"

I have construed herein the term "secured between said mat and said support element" to require each of the plurality of spaced flexible elongated rods to be "held or restrained between the mat and the support element." The evidence shows the leaf springs of the Vuly Thunder trampoline extend between the mat and the support element. (*See, e.g.*, CX-160 at 1897-1900; CX-159 at 1551-1553, 1539.) The evidence also shows the leaf springs are held or restrained by both the mat and the support element. (CX-177C (Reinholtz DWS) at Q/A 289-295.) Specifically, the evidence shows that the hook assembly is secured to the underside of the flexible mat and the metal hook of the hook assembly holds or restrains the upper end of the leaf spring. Additionally, the evidence shows the lower ring frame of the Vuly Thunder holds or restrains the lower ends of the leaf springs. (*See* CX-159 at 1538-1540, 1546-1548, 1551-1553; CX-161; CX-177C (Reinholtz DWS) at Q/A 295.) Accordingly, as properly construed, the Vuly Thunder has "a plurality of spaced flexible elongated rods secured between said mat and said support element so as to support said mat above said support element."

Vuly argues the Vuly Thunder does not have "a plurality of spaced flexible elongated rods secured between said mat and said support element" under its proposed construction of the term "secured between said mat and said support element" as "connected at an incline with the end

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piece of the first end of the flexible elongated rod within pockets or pouches of the mat, and the second end of the flexible elongated rods within cylindrical elements attached to the perimeter of support element.” As discussed, *supra*, I did not adopt Vuly’s proposed construction. Thus, I find Vuly’s argument not persuasive.

D. Technical Prong

Springfree asserts the following Springfree trampolines practice claims 1 and 13 of the ’174 patent: Springfree R54 Compact Round Trampoline (“the R54 Trampoline”); R79 Medium Round Trampoline; O77 Medium Oval Trampoline; O92 Large Oval Trampoline; S113 Large Square Trampoline (“the S113 Trampoline”); and S155 Jumbo Square Trampoline. Springfree asserts the R54 and S113 Trampolines are representative of all of Springfree’s DI Products and that the other models do not differ from the R54 and S113 trampolines in how they practice the asserted claims of the ’174 Patent.

1. Claim 1

Springfree’s expert, Dr. Reinholtz, testified in detail that Springfree’s DI Products practice claim 1 of the ’174 patent. (*See* CX-177C (Reinholtz DWS) at Q/A 335-381.)

Vuly argues the DI Products do not practice claim 1 because they do not have a first retaining means. (RIB at 35.) Vuly offers no other arguments challenging Dr. Reinholtz’s testimony that the DI Products meet the other limitations of claim 1.

The Parties’ Positions

Springfree’s Position

Springfree argues that the Springfree DI Products practice claim 1 of the ’174 patent. (CIB at 43.) Springfree argues that under either party’s constructions, all of the limitations of claim 1 are literally present in the Springfree DI Products. (*Id.*) Springfree argues that the only real issue

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is whether the Springfree DI Products have a “first retaining means,” because that is the only limitation Vuly has contested. (*Id.*)

Springfree argues the R54 and S113 Trampolines both comprise a flexible mat with a plurality of first retaining means located around the mat perimeter. (*Id.* at 44.) For example, Springfree argues the R54 Trampoline has pockets attached to the underside of the mat in which flexible elongated rods are retained. (*Id.*) More specifically, Springfree argues the R54 Trampoline has fabric pockets around the perimeter of the mat with plastic pieces inserted into the fabric pockets. (*Id.*) Springfree also argues the plastic pieces can be considered pockets or their equivalents. (*Id.*) Springfree argues that both the fabric pockets and the plastic pieces help to retain the upper ends of the rods. (*Id.*) Springfree asserts the mat of the S113 Trampoline has the same types of pockets. (*Id.*) Once assembled, Springfree argues that it can be clearly seen that the mat of the S113 Trampoline has a plurality of pockets around its perimeter. (*Id.*) Springfree argues the pockets located on the underside perimeter of the mat retain the rounded end pieces of the rod. (*Id.*)

Vuly’s Position

Vuly argues that the Springfree domestic industry products do not have structure that is the same or equivalent to the corresponding structure in the ’174 patent, which both Springfree and Vuly describe to be pouches or pockets. (RIB at 38.) Vuly argues that Dr. Alexander explained at length to the PTO (at a time when expanding the scope of the ’174 patent for litigation purposes was not an issue) that there are significant and substantial differences between the structure of a ball-and-socket and the structure disclosed in the ’174 patent. (*Id.*) Vuly argues that the ball-and-socket design is not the same as or equivalent to the structure of the patent for several reasons, including the ability of the ball-and-socket design to pivot, to avoid cracking, ease of assembly, and the safety of the more secure way of “securing” the rods to the mat. (*Id.*)

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Vuly asserts that Springfree alleges that the “socket,” i.e., the “fitting” is the same or structurally equivalent to a pocket, but notes that Dr. Alexander told the PTO exactly the opposite, claiming that “if a fitting as claimed can be placed ‘within a pocket’, then it is not the same thing as a pocket.” (*Id.*) Vuly argues there is nothing ambiguous about Dr. Alexander’s statements that the ball-and-socket design is different from the rod end in a pocket design of the ’174 patent. (*Id.*)

Vuly asserts that another test for equivalents involves the “known interchangeability test,” which “looks to the knowledge of a skilled artisan to see whether that artisan would contemplate the interchange as a design choice.” (*Id.*) Vuly argues that the PTO rejected the ball-and-socket design as an obvious “design choice” over the ’174 patent and that in response, Dr. Alexander’s representatives stated that the “features of the Applicant’s claimed trampoline that distinguish it from the trampoline claimed in the ’174 patent are not obvious matters of design choice.” (*Id.* at 38-39.) Vuly argues that Dr. Alexander further specifically described and illustrated the “design solutions which were obvious” to him in his declaration, and specifically declared that the ball and sockets joints were not. (*Id.*) As a result, Vuly argues that Springfree cannot meet the technical prong of domestic industry using claim 1, either literally or under the doctrine of equivalents. (*Id.*)

Discussion

The evidence shows that the Springfree DI Products use the ball-and-socket design of the ‘211 patent as the means to retain a first end of the flexible elongated rod. (*See* RX-067, Claim 1, Figs. 4-8; RX-200C at Q/A 246-249; RX-069 at 69.0075, ¶ 10; Tr. at 374:17-25; CPX-004.) I have found herein that the applicant disclaimed ball-and socket arrangements as the first retaining means of claim 1 of the ’174 patent. Thus, I find the Springfree DI Products do not have a first retaining means.² Accordingly, I find Springfree has failed to prove by a preponderance of

² But for the disclaimer I would have held, based on the same reasoning I found the Vuly Thunder has a first retaining means, that the Springfree DI Products have a first retaining means.

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the evidence that its DI Products practice claim 1 of the '174 patent. Therefore, I find Springfree fails to meet the technical the prong of the domestic industry requirement with regard to claim 1.

2. Claim 13

Springfree's expert, Dr. Reinholtz, testified in detail that Springfree's DI Products practice claim 13 of the '174 patent. (See CX-177C (Reinholtz DWS) at Q/A 382-398.)

Vuly argues the DI Products do not practice claim 13 because they do not have flexible elongated rods "secured between said mat and said support element" under Vuly's proposed construction of that limitation. (RIB at 35, 39-40.) However, Vuly admits that "if 'secured' is given a broad meaning of 'held or restrained,' then any way of connecting the rods to the mat would be encompassed, and Springfree's domestic industry products would practice claim 13." (*Id.* at 39.) Vuly offers no other arguments challenging Dr. Reinholtz's testimony that the DI Products meet the other limitations of claim 13.

I have properly construed herein the term "secured" to mean "held or restrained." Thus, based on the unrebutted testimony of Dr. Reinholtz I find the Springfree DI Products practice claim 13 of the '174 patent. Although I have found Springfree's DI Products to practice claim 13, I have found herein below claim 13 to be invalid as anticipated by US Patent No. 5,336,135. Accordingly, Springfree's DI Products cannot meet the technical prong of the Domestic Industry requirement with regard to claim 13 of the '174 patent. See *In Certain Ground Fault Circuit Interrupters and Products Containing Same*, Inv. No. 337-TA-739, Comm'n Op. (June 8, 2012) ("To prevail, the patentee must establish by a preponderance of the evidence that the domestic product practices **one or more valid claims** of the patent, either literally or under the doctrine of equivalents. It is sufficient to show that the products practice **any valid claim** of the asserted patent, not necessarily an *asserted* claim of that patent.") (bolded emphasis added) (emphasis in original) (internal citations omitted).

E. Invalidity

Vuly asserts that the asserted claims of the '174 patent are anticipated by U.S. Patent No. 5,336,135 ("the '135 patent") and DE Patent Application No. 195 43 662 ("the '662 publication"). Vuly also asserts the asserted claims of the '174 patent are obvious in light of the '135 patent and obvious in light of the '135 patent in view of the '662 publication. Further, Vuly argues the asserted claims are not enabled.

1. Anticipation

a. U.S. Patent No. 5,336,135 (RX-008)

U.S. Patent No. 5,336,135 ("the '135 patent") issued on August 9, 1994, more than one year prior to the effective filing date of the '174 patent and is therefore prior art under 35 U.S.C. § 102(a) and (b). (RX-008.)

(1) Claim 1

Vuly makes a half-hearted attempt to show that claim 1 of the '174 patent is anticipated by the '135 patent. (*See* RIB at 47-51.) Many of the arguments Vuly asserts are not fully developed and thus cannot possibly amount to clear and convincing evidence.

Springfree argues that claim 1 is not anticipated by the '135 patent. In particular, Springfree argues that the '135 patent does not anticipate claim 1 because the '135 patent fails to disclose "a plurality of first retaining means located around the mat perimeter," "a plurality of second retaining means located about the periphery of a support element," "a support element," and "such that in use on a flat horizontal surface, said mat forms a horizontal plane." (CIB at 50-52.)

As discussed in detail below, I find Vuly has failed to prove by clear and convincing evidence at least that the '135 patent discloses the following limitations of claim 1: (1) "first retaining means;" (2) "a plurality of first retaining means located around the mat perimeter;" and

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(3) “such that in use on a flat horizontal surface, said mat forms a horizontal plane.” Accordingly, I find Vuly has failed to prove that claim 1 is anticipated by the ‘135 patent.

(a) “first retaining means”

I have held herein the function of the first retaining means is to retain a first end of a flexible elongated rod. I have identified the structure in the specification of the ‘174 patent corresponding to that function (*i.e.*, I have construed the first retaining means) as: (1) a pocket or pouch formed with an aperture on the non-contact (a.k.a., lower surface) of the flexible mat; (2) a pouch sewn into the fabric of the mat with an aperture on the non-contact (a.k.a., lower surface) of the flexible mat; or (3) an end piece and a pouch formed with an aperture on the non-contact (a.k.a., lower surface) of the flexible mat adapted to retain the end piece.

Vuly argues that “if Springfree’s scope of structural equivalents essentially extends to all structures that confine the upper end of the rod to the particular position on the mat perimeter within the boundaries of the structure, then Springfree risks a finding that the ‘135 patent discloses such structure.” (RIB at 48.) Vuly provides no further argument.

Vuly admits that the ‘135 patent discloses structure that holds or restrains the flexure bars, but does not disclose “a pouch or pocket with an aperture.” (RIB at 47.) Likewise, Vuly admits that the horizontal bar and strut of the ‘135 patent are not equivalent to a pouch or pocket. (*Id.* at 48.) Vuly fails to explain why the horizontal bars and struts of the ‘135 patent are “first retaining means” as that term is construed herein. Moreover, Vuly adduces no evidence showing such. Accordingly, I find Vuly has failed to show by clear and convincing evidence that the ‘135 patent discloses the claimed “first retaining means.”

(b) “a plurality of first retaining means located around the mat perimeter”

Vuly argues that the retaining structure of the ‘135 patent is located “around the mat perimeter” as required by claim 1. (RIB at 48.) Vuly asserts that while Figures 2 and 6 of the

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'135 patent illustrate only one side of the mat with the horizontal bar 30 and struts 34 connecting the mat to the flexure bars, the specification discloses that the inner boundary of the mat could have the same structure. (*Id.*) As such, Vuly argues there would be a plurality of first retaining means "around the perimeter." (*Id.*) Vuly also argues that "one skilled in the art would understand also that all four sides of the trampoline mat could use the same structure, thereby eliminating a rigid frame around the mat entirely."³ (*Id.*)

Vuly provides no support for its conclusion that having retaining means on two of the four sides of the rectangular mat constitutes around the perimeter of the mat. Vuly's failure to adduce any evidence in support of its conclusion is fatal. "Around the perimeter" is a phrase that is readily understood and the plain and ordinary meaning of "around the mat perimeter" would seemingly at least require first support means on each side of the rectangular mat, not just on two of the four sides. Accordingly, I find Vuly has failed to prove by clear and convincing evidence that the '135 patent discloses a plurality of first retaining means "around the mat perimeter."

(c) "such that in use on a flat horizontal surface, said mat forms a horizontal plane"

Vuly argues that the '135 patent illustrates the mat forming a horizontal plane having an upper contact surface and a lower non-contact surface oriented vertically above said support element. (RIB at 50.) Vuly admits that the '135 patent discloses a preferred embodiment designed to be placed on a sloped surface, not a flat horizontal one. (*Id.*) However, Vuly argues based on the testimony of its expert, Dr. Ball, that the structure of Figure 6, in conjunction with the teaching of the specification at 6:19-28, would result in a trampoline that could be used on a flat surface.

³ Vuly admits the '135 patent at most discloses the horizontal bar and strut on two of the four sides. Thus, Vuly argument that "one skilled in the art would understand also that all four sides of the trampoline mat could use the same structure, thereby eliminating a rigid frame around the mat entirely" is an obviousness argument, not an anticipation argument.

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Vuly admits that the “trampoline” disclosed in the preferred embodiment of the ’135 patent is designed to be used on a *sloped* surface and I find nothing anywhere in the ’135 patent of using the disclosed “trampoline” in any other way. Contrary to the disclosure of the ’135 patent, claim 1 of the ’174 patent expressly requires use on a flat surface. Further, there is no evidence from Vuly or testimony from Dr. Ball that “use on a flat horizontal surface” is an inherent feature of the invention described in the ’135 patent. Accordingly, I find Vuly has failed to show by clear and convincing evidence that the ’135 patent discloses a trampoline that “in use on a flat horizontal surface, said mat forms a horizontal plane...” See *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999) (“Anticipation ... requires that each and every element [of] the claim is found, either expressly or inherently described, in a single prior art reference.” (quotation marks omitted)).

(2) Claim 13

Vuly’s expert, Dr. Ball, testified in detail that the ’135 patent discloses each of the limitations of asserted claim 13. (RX-195C (Ball DWS) at Q/A 37-43, 48-49, 55-63.)

Springfree argues that claim 13 is not anticipated by the ’135 patent. Specifically, Springfree argues that the ’135 patent does not anticipate claim 13 because the ’135 patent fails to disclose a “support element” and a plurality of flexible elongated rods “secured between said mat and said support element.” (CIB at 47-49.) Springfree also argues that the ’135 patent cannot be an anticipatory reference because the ’135 patent does not enable a trampoline supported by the claimed support assembly. (*Id.* at 49-50.)

For the reasons discussed in detail below, I find Springfree’s arguments are not persuasive. Accordingly, based on the testimony of Dr. Ball and my discussion of the record evidence, *infra*, I find Springfree has proven by clear and convincing evidence that the ’135 patent anticipates claim 13 of the ’174 patent.

(a) "support element"

I have construed "support element" herein to mean "an element that supports the plurality of flexible elongated rods." Under this construction I find the '135 patent discloses a "support element."

Below are Figures 3 and 4 from the '135 patent.

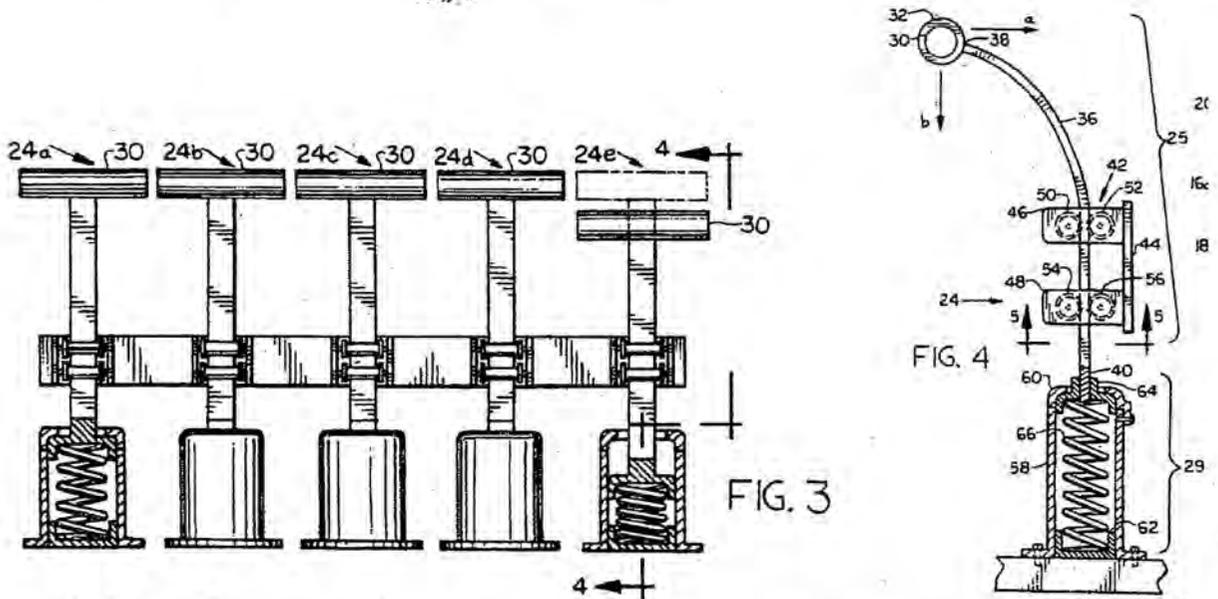


Fig. 3 is a front view showing five support assemblies 24a – 24e. Fig. 4 is the side view of a support assembly sectioned through 4-4 of FIG. 3. The '135 patent teaches that the support assembly 24 comprises a first portion 26 a second portion 28.⁴ (RX-008 at 2:35-37.) The second portion 28 has a container 58, which has a removable cap 60, a lower retainer 62 and an upper retainer and guide 64.

Figure 4 shows the second control portion (in particular container 58 of the control portion) connected to a foundation. At the hearing, Springfree's expert, Dr. Reinholtz, admitted that "those members, the cans that are bolted to the ground are part of a rigid foundation, a

⁴ I note Fig. 4 incorrectly labels the first portion 26 as 25 and the second portion 28 as 29. For clarity, I will refer to these components as they are identified in the text of the specification and not as they are labeled in Fig. 4.

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structure.” (Tr. (Reinholtz) at 588:18-23; *see also* Tr. (Ball) at 478:18-23 “[t]hat sort of can-shaped thing at the bottom, that’s rigid.”.) Thus, the evidence shows the five second control portions shown in Figure 3 are each connected to a common foundation, and therefore are interconnected.

The ‘135 patent also teaches that the second portion 28 provides vertical support to the flexure bars. In particular, the specification of the ‘135 patent states, “The support assembly 24 comprises a first portion 26 defining a lateral support portion and a *second portion 28 defining a vertical support portion.*” (RX-008 at 2:35-37 (emphasis added).) Additionally, the specification teaches that “[t]he second support portion 28 (vertical support portion[]) is vertically downwardly moveable against the upward biasing force of spring 66.” (*Id.* at 3:44-46.) This can also be readily seen in Fig. 3. (*Id.*, Fig. 3.)

Although the ‘135 patent makes clear that the second portions provide support to the flexure bars, Dr. Reinholtz would not agree at the hearing the second portions support the flexure bars because of the degree of motion of the flexure bars afforded by the springs in the second portions. Contrary to Dr. Reinholtz testimony, however, the ‘135 patent makes clear that the spring can be selected so that it will not move against the force exerted by the flexure bar. Specifically, claim 8 of the ‘135 patent teaches that the “flexure bar and vertically collapsible spring” can have a “preselected biasing force to operate in a mode selected from one of the following upon application of force having vertical and lateral components: (a) the flexure bar alone will flex and the vertical spring will not collapse. ...”

Dr. Reinholtz also argues the second portions do not support the flexure bars because the ‘135 patent states the control assembly 42 provides lateral support for the flexure bar and the ‘135 patent mentions the control assembly 42 as the only structure providing lateral support to the flexure bar. Dr. Reinholtz appears to be arguing that because the second portions do not

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completely support the flexure bars (*e.g.*, the control assembly 42 provides lateral support), the second portions cannot be the claimed support element. But neither claim 13, nor the specification of the '174 patent, requires the support element to completely support the plurality of flexible elongated rods. In fact, to require the support element to completely support the plurality of flexible elongated rods as Springfree suggests would be impermissibly adding a limitation to the language of claim 13.

Moreover, the applicant's use of the word "comprising" as a transition from the preamble to the body of the claim "signals that the entire claim is presumptively open-ended." *Gillette Co. v. Energizer Holdings, Inc.*, 405 F.3d 1367, 1371 (Fed.Cir.2005) "The transition 'comprising' creates a presumption that the recited elements are only a part of the device, that the claim does not exclude additional, unrecited elements." *MagSil Corp. v. Hitachi Global Storage Technologies, Inc.*, 687 F.3d 1377, 1383 (Fed. Cir. 2012) (citing *Crystal Semiconductor Corp. v. TriTech Microelectronics Int'l, Inc.*, 246 F.3d 1336, 1348 (Fed.Cir.2001)).) Thus, the fact that the control assembly 42 provides additional support to the flexure bars is not prohibited by claim 13 and does not cut against a finding that the '135 patent discloses the claimed "support element."

As discussed above, the '135 patent states the support assembly 24 includes "a second portion 28 defining a vertical support portion." Thus, the '135 patent makes clear that the second portion supports the flexure bars. The interconnected second portions therefore support a plurality of flexure bars. Hence, I find the '135 patent discloses an element that supports the plurality of flexibly elongated rods. Accordingly, I find the '135 discloses the claimed "support element."

(b) a plurality of flexible elongated rods "secured between said mat and said support element"

The '135 patent discloses that during use of the trampoline, the upper ends of the flexible rods are retained to the mat by horizontal bars and struts. (RX-195C (Ball DWS) at Q/A 62; RX-008 at 2:52-53 ("A flexure bar 36 is attached at its upper end 38, to the horizontal bar 30 and

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terminates at a lower end 40.”); *see also* RX-008, claim 4 (“connecting elements between said support structure and said pad to support said pad.”).) Thus there can be no question that the upper ends are “held or restrained” to the mat. Springfree’s expert does not contest this fact. (Tr. at 573:2-7.) Additionally, as Dr. Ball testified, “the top end of that flexure bar is obviously secured to the mat or it wouldn’t work.” (Tr. at 479:21-22.)

The ‘135 patent also discloses that the lower end 40 of the flexure bar 36 is fixed onto the upper retainer and guide 64 of the second portion. (RX-008 at 3:3-5.) At the hearing, Dr. Reinholtz admitted that the flexure bars are held or restrained by the second portions.

Q. Well, I can see that the lower part of flexure bar 36 is fixed to the retainer 64, right?

A. Right, and the – yes, go ahead.

Q. So those two are held or restrained together, right, those two elements?

A. Yes.

(Tr. at 589:5-10; *see also id.* at 589:15-17.) The ‘135 patent also teaches that the “flexure bar and vertically collapsible spring” can have a preselected biasing force to operate such that “the flexure bar alone will flex and the vertical spring will not collapse.” (RX-008, claim 8; Tr. at 552:22-553:12.) Accordingly, with the spring fixed (*i.e.*, non-collapsible), the retainer is bound within the second portion 28 and there can be no question that the lower part of the flexure bar is thus held or restrained by the second portion 28.

Springfree argues the rods in the ‘135 patent extend through the control assembly 42 and the second portion (collectively referred to by Springfree as the “green structures”) and that the green structures simply help to guide the lower portion of the flexure bar 36 during upward and downward movement so that it does not move laterally. (CIB at 48.) Thus, Springfree argues the structures do not “secure” the flexible elongated rods, as a person of ordinary skill in the art would understand that term as used in the ‘174 patent. (*Id.* at 49.) Likewise, Springfree’s expert, Dr. Reinholtz, took particular issue with the vertical spring 66 as allowing vertical movement

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inside the support element. (*See* Reinholtz Tr. 586:4-15.) Contrary to Springfree and Dr. Reinholtz's position, however, the '135 patent makes clear the spring can be selected so that it will not move against the force exerted by the flexure bar. Specifically, claim 8 of the '135 patent teaches that the "flexure bar and vertically collapsible spring" can have a "preselected biasing force to operate in a mode selected from one of the following upon application of force having vertical and lateral components: (a) the flexure bar alone will flex and the vertical spring will not collapse. ..." In this embodiment will not be the upward and downward movement about which Springfree and Dr. Reinholtz complain. Thus, I find Springfree's argument not persuasive.

(c) Does the '135 Patent Enable a Trampoline Supported by the Claimed Support Assembly?

Springfree argues the '135 patent teaches having the support assembly 24 on the outer edge 16d of the trampoline. (CIB at 49.) Springfree argues that at most, the '135 patent mentions having the support assembly 24 on *two sides* of the rectangular (*i.e.*, 4-sided) bouncing surface. (*Id.*) Springfree argues there is no explicit disclosure or implicit suggestion anywhere in the '135 patent to place the support assembly on *all four* sides of the trampoline. (*Id.*) Springfree argues that Vuly has pointed to no evidence, and Dr. Ball offered no testimony, that the tensioning of only two sides of a rectangular mat can provide a functional bouncing surface. (*Id.*) Thus, Springfree argues the '135 patent is not enabled and therefore not a proper anticipatory reference. (*Id.*)

Springfree did not raise this argument in its pre-hearing brief. Consequently, pursuant to my Ground Rules in this investigation, Springfree waived such argument.

b. DE Patent Application No. 195 43 662 (RX-012)

German Patent Application No. 195 43 662 ("the '662 publication") was filed on November 23, 1995 and published on May 28, 1997, more than a year before the effective filing date of the '174 patent. (*See* RX-012.) Thus, the '662 publication is prior art under 35 U.S.C.

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§ 102(a) and (b). The '662 publication discloses a catcher net for occupational safety and accident protection for working on high structures. (*Id.*) Vuly argues the '662 publication anticipates claims 1 and 13 of the '174 patent.

(1) Claim 1

Springfree argues that the '662 publication does not anticipate claim 1 because it fails to disclose: (1) "a trampoline;" (2) "a flexible mat;" (3) "flexible elongated rods;" (4) "a plurality of first retaining means located around the mat perimeter;" (5) "a plurality of second retaining means located about the periphery of a support element;" and (6) "each said flexible rod is retained at a first and second end by said first and second retaining means."

As discussed in detail below, I find Vuly has failed to prove by clear and convincing evidence at least that the '662 publication discloses the following limitations of claim 1: (1) "first retaining means;" and (2) "flexible elongated rods." Accordingly, I find Vuly has failed to prove that claim 1 of the '174 patent is anticipated by the '662 publication.

(a) "first retaining means"

Vuly argues the '662 publication discloses that "[t]he catcher net and/or jump cloth is fastened to the prop heads via the carrying ropes." Vuly argues that Dr. Reinholtz admitted that using ropes "could form a very good joint at the mat." (*Id.*) Vuly asserts that it "does not contend that the ropes are equivalent structure to the pockets of the '174 patent." (*Id.*) However, Vuly argues that to the extent Springfree's "equivalents" analysis for "first retaining means" is "stretched to have virtually no limits, *i.e.* include hooks and slots, it risks a finding that these ropes are equivalent." (*Id.*) Vuly makes no other argument regarding the first retaining means.

Vuly's argument is confused and not well developed. Vuly admits the ropes are not equivalent structure to the pockets of the '174 patent, yet goes on to insinuate that they could nevertheless be found to meet the first retaining means limitation depending on the breadth of

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Springfree's means-plus-function equivalents analysis. However, the record is clear that Vuly chose not to offer any invalidity opinions under Springfree's means-plus-function constructions. (Tr. at 545:1-546:1.) Moreover, Vuly offers no equivalents analysis. Accordingly, I do not find Vuly has shown by clear and convincing evidence that the '662 publication discloses a "first retaining means."

(b) "flexible elongated rods"

Vuly argues that the '662 publication discloses props that are slender and flex during use of the device and are therefore slender and resilient bars, meeting Springfree's construction for "flexible elongated rod." (RIB at 53.) In support, Vuly relies on the language of claim 1 of the '662 publication, which states that "[s]caffolding for catcher net, characterized in that the propping and tensioning of the catcher net is achieved by a plurality of props slanted outwardly at the top, which are mounted on a base frame." (See RX-195C (Ball DWS) at Q/A 166.) Vuly also relies on a single citation to the specification of the '662 publication, which states that "[t]he structural setup of the scaffolding (Fig. 1a and 1b) is comprised of four or more slanted props that are articulately positioned at the base frame (1) and held at the prop head by the ropes (4; 5; and 6)." (*Id.* at Q/A 167.). Vuly provides no other support.

It is readily apparent that the two passages relied on by Vuly in support of its argument that the '662 patent discloses the claimed flexible elongated rods of the '174 patent do not teach that the props are flexible. The passages merely disclose that the props are slanted outwardly at the top and articulately positioned at the base frame. Thus, I find that Vuly has failed to show by clear and convincing evidence that the '662 publication discloses flexible elongated rods. Accordingly, I find Vuly has failed to prove that claim 1 of the '174 patent is anticipated by the '662 publication.

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(2) Claim 13

Springfree argues that the '662 publication does not anticipate claim 13 because it fails to disclose: (1) "a trampoline;" (2) "a flexible mat;" (3) "flexible elongated rods;" and (4) "a plurality of spaced flexible elongated rods secured between said mat and said support element."

As discussed in detail above, I find Vuly has failed to prove by clear and convincing evidence at least that the '662 publication discloses the "flexible elongated rods" of claim 13. Accordingly, I find Vuly has failed to prove that claim 13 of the '174 patent is anticipated by the '662 publication.

2. Obviousness

Vuly argues that to the extent claim 13 is not anticipated, it is rendered obvious by the following references and combinations: (1) the '135 patent and (2) the '135 patent in combination with the '662 publication. (RIB at 56.)

I have found herein that claim 13 is anticipated by the '135 patent. Accordingly, I need not address Vuly's alternative obviousness arguments based on the '135 patent. *See Yorkey v. Diab*, 605 F.3d 1297, 1300 (Fed. Cir. 2010) ("Because we find that the asserted Yorkey patent claim was anticipated by the corresponding claim of the Diab application, we need not address the question of obviousness."); 3 Moy's Walker on Patents § 9:49 (4th ed.2013) (stating that, where claims are found to be anticipated, "the issue of obviousness need not be reached").

3. Lack of Enablement

The Parties' Positions

Vuly's Position

Vuly argues that asserted claims 1 and 13 of the '174 patent are invalid due to lack of enablement. (RIB at 63.) Vuly asserts that Springfree argues based on its broad constructions of the limitations "first retaining means" in claim 1 and "flexible elongated rods secured between

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said mat and said support element” in claim 13 that the ball-and-socket arrangement of its domestic industry products satisfies the “first retaining means” and the flexible elongated rods “secured between said mat and said support element” limitations of the ‘174 patent. (*Id.*) Vuly alleges that contrary to Springfree’s argument the ‘174 patent does not enable one of ordinary skill in the art to implement the ball-and-socket arrangement of Springfree’s domestic industry products without undue experimentation. (*Id.*) Vuly argues that “Dr. Alexander provided sworn testimony to the PTO explaining that the ‘174 patent, combined with his extraordinary skill level in the art, did not enable him to create the ball and socket design until he engaged in extensive experimentation. And it was only after years of prototyping and some disastrous results that he came up with the ball-and-socket design.” (*Id.* at 63-64.)

Discussion

“[E]nablement does not require an inventor to meet lofty standards for success in the commercial marketplace.” *CFMT Inc. v. Yieldup Int’l Corp.*, 349 F.3d 1333, 1338 (Fed. Cir. 2003). “The enablement requirement is met if the description enables any mode of making and using the claimed invention.” *Engel Indus., Inc. v. Lockformer Co.*, 946 F.2d 1528, 1533 (Fed. Cir. 1991). Vuly argues that the ball-and-socket design is not enabled based solely upon Dr. Alexander’s declaration that was submitted during the prosecution of U.S. Patent No. 8,105,211 (“the ‘211 patent”). However, even Dr. Alexander admitted that that as a mechanical engineer he was well familiar with ball and socket type joints. (RX-69 at 69.0073, ¶7.) Furthermore, as the Patent Office recognized and as Dr. Reinholtz testified at the hearing, both ball-and-socket and ball-and-pocket joints would have been known to those of ordinary skill, and could have been implemented without undue experimentation. (*See* RX-69 at 69.0083 (ball-and-socket joints are “notoriously old and well known as a connection means”); Tr. at 494:25-495:4.) As both Dr. Reinholtz and Dr. Ball acknowledged, since the ball-and-socket joint was already well

known, implementation of such a joint in the trampoline of the '174 patent would have been a matter of routine experimentation. (CX-0194C at Q/A 243; Tr. at 529:15-22.) Such routine experimentation, however, does not call enablement into question. *See In re Wands*, 858 F.2d 731 (Fed. Cir. 1988) (explaining that enablement of patent is not precluded by necessity of some experiments.)

Accordingly, I find Vuly has failed to carry its burden to show by clear and convincing evidence that the '174 patent is invalid due to lack of enablement of the ball-and-socket joint found in Springfree's domestic industry products.

V. DOMESTIC INDUSTRY: ECONOMIC PRONG

The Parties Arguments

Springfree's Initial Argument

Investment in Plant and Equipment

Springfree alleges it operates facilities in [] (CIB at 65, citing CX-179C at Q/A 25.) Springfree claims that within these facilities, it performs a number of business functions related to the exploitation of the '174 Patent, to include (1) installation; (2) customer service and support; (3) repair; (4) warranty and return services; and (5) sales, marketing, and distribution. (*Id.*) Springfree employed [] performing the five functions. (*Id.*, citing Q/A 53.) Springfree claims its efforts generated [] (*Id.* citing Q/A 48; *see also* CX-80C.)

According to Springfree, it sells six soft-edged trampolines that are protected by the '174 patent, to include: (1) the R54 - Compact Round Trampoline; (2) the R79 - Medium Round Trampoline; (3) the O77 - Medium Oval Trampoline; (4) the O92 - Large Oval Trampoline; (5) the S113 - Large Square Trampoline; and (6) the S155 - Jumbo Square Trampoline. (*Id.*,

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citing CX-177C (Reinholtz DWS) at Q/A 31, 328-330; JX-10C (Deposition of Steven Holmes as Springfree's 30(b)(6) Designee) at 252:25-254:6.)

Springfree avers it has invested [] in plant and equipment within the U.S. for the purpose of selling the soft-edged trampolines protected by the '174 patent, including investments and lease expenditures for facilities in [] (*Id.* citing CX-179C at Q/A 25-34; CX-76C ([])); CX-77C ([])). Moreover, Springfree alleges its domestic investments include equipment it uses in these facilities allegedly related to domestic industry products. (*Id.*)

Springfree explains that it leases and operates facilities in [] for use as Springfree Trampoline "Experience Centers." (CIB at 66, citing CX-179C at Q/A 25-34; CX-76C; CX-77C.) []

[] (*Id.*, citing CX-179C at Q/A 28, 32; CX-76C; CX-77C. According to Springfree, these facilities support its five business activities related to trampolines covered by the '174 Patent. (*Id.*, citing CX-179C at Q/A 25.) As of the date of the filing of the Complaint in this Investigation, Springfree alleges it spent []

[] (*Id.*, CX-179C at Q/A 30, 34; CX-76C; CX-77C.)⁵

Springfree alleges it made substantial investments in developing its Experience Centers, including []

(*Id.*, citing Tr. at 183:8-15, 188:22-189:1; CX-179C at Q/A 43-45.) []

[] (*Id.*, citing CX-179C at Q/A 30, 34.) [] in capital investments such as leasehold improvements, trucks, signage, office equipment, and other items

⁵ Springfree also alleges it has made additional investments (after filing the complaint) at other locations. (CIB at 66).

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pertaining to Springfree's facilities in the U.S. (*Id.*, citing CX-179C at Q/A 43-45.) Continuing, Springfree claims the [] for computer software, [] for transportation equipment including company vehicles and mobile jump zones to use at shows, [] for warehouse equipment including forklifts, and [] for building improvements including store renovations and new signage, and office equipment including computers. (CIB at 66-67, citing CX-179C at Q/A 44.)

Employment of Labor and Capital

Within its [], Springfree alleges it employs labor and capital for domestic industry activities including: (1) installation; (2) customer service and support; (3) repairs; (4) warranty and return services; and (5) sales, marketing, and distribution. (CIB at 67, citing CX-179C at Q/A 25.) [

[] (*Id.*, citing Tr. at 184:4-6; CX-179C at Q/A 48, 53; CX-80C.) Springfree's claims its labor expenditures within the U.S. totaled [] (*Id.*, citing CX-179C at Q/A 62; CX-80C, 6400-Wages and 6405-Commission.) Of the [] Springfree alleges it spent more than [] in labor directed specifically to installation, support, and warranty services. (*Id.*, citing Tr. at 187:13-21.)

Installation Activities

The primary intended benefit of the '174 patent is increased safety for users of the trampolines. (*Id.*, citing CX-179C at Q/A 9; Tr. 178:20-25 and see JX-1 at 1:10-40.) Springfree alleges that to make the trampoline safe, it must be properly installed. (*Id.*, citing CX-179C at Q/A 56; Tr. at 180:25-181:9, 184:24-186:1.) This is not easy, for the Springfree trampoline is a unique design and installation is not easy for the average consumer. (CIB at 67-68, citing CX-179C at Q/A 56.) In consequence of difficulty of installing its trampolines, Springfree claims an important part of its domestic industry is installation and related services for the asserted

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trampolines performed by Springfree personnel based at Springfree's Experience Centers in the U.S. (CIB at 68.)

Customer Service Activities

Springfree claims it provides its U.S. customers with "extensive services for its products that are protected by the '174 patent." (*Id.*, citing CX-179C at Q/A 55.) Springfree alleges its service activities include communicating with consumers who buy their trampolines, in order to assist them regarding installation and use. (*Id.*) Post-purchase, Springfree alleges it provides customers with assistance on any aspect of their ownership of a Springfree trampoline including activities related to: (1) product warranties; (2) returns and repairs related to the products protected by the '174 Patent; and (3) telephone customer support services. *Id.* Springfree states its telephone customer support personnel are based in the [] Experience Centers. (*Id.*)

Springfree's Domestic Employment of Labor

Springfree claims [] perform customer service and installation activities. (*Id.*, citing CX-179C at Q/A 59; Tr. at 184:14-18.) According to Springfree, its employees spent [] on customer service activities, including [] performing telephone customer support, [] performing on-site service, repair or warranty work, [] processing returns and [] performing installation services. (*Id.*, citing CX-179C at Q/A 60.)

Springfree claims it spent a total of [] on labor in 2013, including for customer support, warranty, return and repair services, and installation services. (CIB at 69, citing CX-179C at Q/A 62.) Of that [] Springfree claims it spent at least []46 for installation services labor and [] for labor for telephone customer support, warranty,

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returns, repairs and installation services. (*Id.*, citing CX-80C, 5140-Installation Expense and 6115-Casual Labor; Tr. at 187:13-16.)

Activity Related to U.S. Authorized Dealers

According to Springfree, it has authorized dealers in the U.S. that provide customer support, repair, and installation services in the U.S. in addition to selling the asserted trampolines (*Id.*, citing CX-179C at Q/A 64-67; CX-195C, Tr. at 187:22-188:12.) Springfree alleges it has [] exclusively dedicated to training and educating its dealers on the installation, use, and maintenance of the asserted trampolines. (*Id.*) Springfree has [] exclusively dedicated to these activities, visiting the dealers, and training their employees, including sales staff, installers, and customer service personnel. (*Id.*) Springfree alleges its authorized dealers also engage in domestic industry activities, including customer support, repair, and installation that exploit the patented technology, and thus may be considered domestic industry activities. (*Id.*) According to Springfree, its four largest authorized dealers employed approximately [] who devoted at least a portion of their time to installation, customer service and repair activities with respect to the patented Springfree trampolines and these authorized dealers incur annual expenditures of approximately [] for installation, customer support, and repair activities related to the trampolines in the U.S. (*Id.*, citing CX-179C at Q/A 71; CX-84C; Tr. at 188:13-21.)

Significance of Springfree's Plant and Equipment and Employment of Labor Capital

Springfree acknowledges it must show there exists a significant investment in plant or equipment, or a significant employment of labor or capital, or a substantial investment in the exploitation of the patents. (CIB at 70.) Springfree alleges the Commission evaluates whether the investment in plant and equipment or the employment of labor or capital is significant in the context of the product and the marketplace, *e.g.* (*Id.* (citing *In the Matter of Certain*

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Kinesiotherapy Devices and Components Thereof, Inv. No. 337-TA-823, Comm'n Op. at 33 (July 12, 2013) (EDIS Doc. 513323) (“[g]iven the importance of context in the Commission’s analysis, there is no threshold test for what is considered ‘significant’ within the meaning of the statute. Instead, the determination is made by ‘an examination of the facts in each investigation, the article of commerce, and the realities of the marketplace.’ The term ‘significant’ in section 337(a)(3) is not expressly defined in the statute.”.)

Springfree notes the Commission evaluates whether the investment in plant and equipment or the employment of labor or capital is significant or whether an investment in the exploitation of the patents is substantial by looking at, for example, whether the activities or investments are significant or substantial “in relation to the articles protected by the intellectual property right concerned,” which requires an assessment “with respect to the nature of the activities and how they are ‘significant’ to the articles protected by the intellectual property right.” (*Id.* (citing *Printing & Imaging Devices & Components Thereof*, USITC Inv. No. 337-TA-690, Comm'n Op. at 26 (Feb. 17, 2011) (Public Version).)

Springfree reiterated that an intended benefit of the patented technology is increased safety in the use of the trampoline. (*Id.*) But, increased safety requires proper installation, which in turn may also require improvements to the customer’s property so that the trampoline is properly and safely positioned. (CIB at 71 (citing JX-10C at 184:20-24).)

Springfree alleges it is a U.S. small business in the U.S. and reiterates its 2013 sales of for the trampolines protected by the '174 patent totaled[] (*Id.*) Hence, in the context of its business, Springfree’s asserted domestic activities are significant. (*Id.*)

Springfree explains that it engages in domestic activities to ensure the proper installation, use and maintenance of the Springfree trampolines, which are important to facilitate the safety features of the trampolines by supporting the proper installation and use of the products. (*Id.*)

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(citing CX-179C at Q/A 55 and 56.) Relevant activities include installation services, service and repair, and customer service and support. (*Id.*) To perform these activities, Springfree employs labor at its [] facilities and in addition, Springfree's authorized dealers provide installation, repair and customer support services. (*Id.*) Further, as previously mentioned, Springfree [] dedicated to training the dealers and their staff, including regarding the installation, use, and maintenance of the trampolines. (*Id.*)

Springfree claims that: [

] (*Id.* (citing CX-179C at Q/A 56).) Thus,

Springfree contends proper installation is a significant factor in the context of the business operations of the asserted products at issue in this Investigation. (*Id.*) What is more, according to Springfree, is that approximately [] purchase installation services when they purchase an asserted trampoline from Springfree, while approximately [

] who purchase the asserted trampolines from Springfree's authorized dealers also purchase installation services. (*Id.* at 71-72 (citing CX-179C at Q/A 57; Tr. at 186:2-6).)

Springfree contends the purchase and use of installation services by a [] of purchasers proves the significance of the installation services provided by Springfree and its authorized dealers to consumers. (CIB at 72).

Continuing its discussion of the significance of installation services, Springfree alleges the retail price of the installation services relative to the retail price of the trampolines is further proof of significance. (*Id.*) Specifically, the retail price of the installation service is [], while the Manufacturer's Suggested Retail Price ("MSRP") of the trampolines ranges between [] and [] depending on the size and shape of the trampoline. (*Id.* (citing CX-179C at Q/A 58; Tr. 187:5-12; CX-86C at 1026).) This means the retail price of installation service is between [

] of the suggested retail price of the trampolines. (*Id.*) According to

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Springfree, because the retail value of the installation services accounts for as much as [] of the price of the trampoline and that the [] of consumers purchase the installation services, the installation services are significant in the context of this industry. (*Id.*)

Vuly's Initial Argument

Vuly begins by pointing out that none of Springfree's domestic activities include manufacturing, production, packaging, inspection, R&D, or testing of its alleged domestic industry products in the United States. (CIB at 67.) Vuly asserts the domestic activities Springfree relies upon are related to marketing and the selling of its foreign made trampolines with only a small amount of ancillary investments related to service and installation. (*Id.*) Hence, "Springfree's domestic industry activities are more analogous to 'an ordinary importer ordering and purchasing foreign goods to be manufactured abroad for importation into the United States.'" (*Id.* (quoting *Schaper Mfg. Co. v. U.S. Int'l Trade Comm'n*, 717 F.2d 1368, 1373 n.10 (Fed. Cir. 1983)).)

Springfree's Investments in Subsection (A) Plant and Equipment

Vuly notes that Springfree relies on its [] retail stores and rented warehouse space as its domestic industry under subsection (A), even though Springfree's investments at those sites relate "overwhelmingly" to sales, marketing, and warehousing. (*Id.* at 67.) Next, Vuly asserts that Springfree relies on its total investments in rent at its [] retail stores [] (*Id.* (citing CX-179C at Q/A 45).) Moreover, despite labeling its retail stores "Experience Centers," Vuly asserts these sites are, by Springfree's own public statements, retail stores. (*Id.* (citing CX-107; JX-10C at 263:11-268:11).) Further, Mr. Holmes, Springfree's "Chief Bouncing Officer," testified that [

] are used to assist in customer service, support, and installation, among other activities. (*Id.* (citing CX-179C at Q/A 46).) Mr. Homes admitted sales and marketing activities

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take place in these [] locations as well. (*Id.* (citing Holmes Tr. 191:25-192:8; RX-72C and 73C; JX-10C at 101:20-102:3 and 116:23-117:22).) Vuly alleges that as a retail store, the principal function is obviously sales and marketing. (*Id.*) Under cross-examination, Mr. Holmes admitted [] (*Id.*, Tr. at 191:4-192:4.) However, as Vuly points out, sales, marketing, and warehousing investments are not a domestic industry. (RIB at 67-68 (citing *Certain Cases for Portable Electronic Devices*, Inv. Nos. 337-TA-861/867, Order No. 15, 2013 WL 5702593, at *18 (U.S.I.T.C. Sept. 10, 2013) (unreviewed by the Commission) (“*Cases for Portable Electronic Devices*”)).)

Vuly also faults Springfree for relying on lease payments for warehouse space without being able to apportion any specific amount of that investment toward customer service and installation. (RIB at 68 (citing Tr. at 194:7-10).) Vuly asserts activities such as “warehousing” should not be included in a domestic industry analysis because warehousing involves marketing and sales considerations. (*Id.* (citing *Cases for Portable Electronic Devices*, Order No. 15, 2013 WL 5702593, at *15 and 18).) Similarly, Springfree is also wrong to rely on an investment of [] in leasehold improvements because that investment relates to sales, marketing, and warehousing because the improvements are merely store improvements such as lighting and signage, as outlined in [] (*Id.* (citing CX-77C at 3-4; Tr. at 195:11-23).) Nor did Springfree present documentary evidence of any actual improvements or apportion the improvements to customer service or installation. (*Id.*) Accordingly, Vuly argues that Springfree’s investments in leasehold improvements and warehousing should not be counted toward its domestic industry investments for the ’174 patent. (*Id.*) Vuly notes that even accepting Springfree’s allocations of [], the investments for plant and equipment is [] (*Id.*)

Springfree's Investments in Subsection (B) Labor and Capital

While Springfree initially attributed [] towards its investments in labor and capital, it later admitted (during the Hearing) that only about [] of this investment is allocable labor and capital relating to customer service and installation. (*Id.* (citing Tr. at 187:13-21).) However, Vuly also disputes the [] number because Springfree produced only redacted W2 forms of its U.S. employees as the only supporting documentary evidence. (RIB at 68-69.) Vuly argues that Springfree's late allocation of salary costs, "while simultaneously impermissibly redacting exactly the information needed to perform such an allocation, should be rejected." (RIB at 69.) Vuly alleges it should be rejected because Springfree admitted that some of its investments in employees it is relying on for domestic industry were part-time employees with an unknown salary and that some of these employees' activities may relate to sales or take place in Canada. (*Id.* (citing Tr. 197-200).) Vuly contends that such investments in unknowns should not be counted towards domestic industry because a complainant cannot meet its burden of proof of proving a significant investment in labor by selectively redacting needed proof, which is within its control. (*Id.*)

Springfree's Dealer's Investments

Vuly also challenges Springfree's reliance on third-party dealers as part of its domestic industry as speculative. (*Id.*) Specifically, Vuly asserts that Springfree's reliance on activities of a Canadian employee, [] a sales account manager, who allegedly assists with dealer training is improper because "Springfree provided no evidence regarding how often [] traveled to the United States, met with dealers, or provided any service or materials to dealers related to installation in 2013. (*Id.* (citing Tr. at 205:25-206:2).) Vuly also argues the costs or efforts of Springfree's dealers should be discounted, since they are not subcontractors, but rather

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operate in their own capacity without any sort of contractual agreement to conduct installation or service and support services. (*Id.* (citing Tr. at 203:21-204:16).)

Springfree's Alleged Domestic Industry Investments Are Not Significant

Springfree's Investments Are Not Qualitatively Significant

Vuly argues that while one of the explicit teachings of the '174 patent is one of the ease of assembly, Springfree "presented a litigation-induced argument at the Hearing that its installation services are significant because installation of its products is dangerous." (RIB at 70 (citing JX-001 at 1:46-48).) Vuly asserts that while claiming assembly is dangerous, Springfree provided no documentary evidence supporting its claim that installing its trampolines is dangerous. (*Id.*)

Vuly asserts that even though Springfree would know best how many injuries have occurred during installation or due to the installation process, there is no such evidence in the Record. (*Id.*)

Further disputing danger, Vuly notes that Springfree's website contains videos starring Dr. Alexander (the inventor) walking customers through every step of the installation process. (*Id.* (citing Tr. at 155:19-23).) Further, the user manuals provided with the trampolines come with a QR code, which allows purchasers to scan the code and watch the installation video on their smartphone as they install the product in their backyard. (*Id.*) Vuly notes that approximately [] of Springfree's customers purchasing Springfree trampolines from dealers do not purchase installation services. (*Id.* (citing CX-179C at Q/A 57).)

Another point made by Vuly is that Springfree sells its trampolines on-line to customers who cannot purchase professional installation services, which is "apparently without regard for this new "safety" concern." (*Id.* (citing Tr. at 205:3-12).) Further, Vuly asserts that Springfree neither requires "*nor even recommends* professional installation in any of its installation videos or its user manuals, which is inconsistent with the newfound criticality of professional installation services." (*Id.* (citing Tr. at 202:21-203:20; CX-99).) This is consistent with the patent, which

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specifically states that one of the objects of the invention is ease of installation, a goal of Dr. Alexander (*Id.* (citing Tr. at 155:8-18).) Vuly also contends that Dr. Alexander's later patents, directed to the later iterations of the ball-and-socket designs, repeated that easy assembly was an invention goal and "that users would typically receive the product in boxes and need to assemble it themselves." (RIB at 70-71 (citing RX-64 at 3:42-47 and RX-174.8 at ¶ 009; Tr. at 152:17-155:18).) Therefore, it is Vuly's contention that the documentary evidence [prepared in before the advent of the current investigation] establishes that the Springfree trampolines can and are assembled by end users. (RIB at 71.) Thus, Vuly argues that "Springfree's last-minute unsupported testimony cannot provide the sole basis for the significance of its domestic industry." (*Id.*)

Vuly contends that if Springfree trampolines are dangerous to install, "logically Springfree would provide some sort of special training to its dealers on how to install the trampolines safely, and how to appropriately warn customers." (*Id.*) Nevertheless, Vuly asserts that Springfree does no such thing, rather [

] (available on Springfree's website), which teach end users how to install them without any professional help. (*Id.* (citing Tr. at 205:13-206:7).) Instead, [

]

(*Id.* (citing Tr. at 205:13-206:2 and CX-86C).)

Vuly asserts that while Springfree recommends its dealers charge [] for installation services, its dealers may charge up to [] for installation. (*Id.* (citing Tr. at 201:16-19 and 187:5-9).) Moreover, Springfree admits that installation only costs Springfree (or its dealers) [] to do an installation, which means there is a margin of [] on what is alleged to be a critical safety issue. (*Id.* (citing Tr. at 201:20-25).) According to Vuly, this "disparity" proves

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Springfree really uses installation as an additional sales tool and profit center, which means it is not significant for domestic industry. (*Id.*)

While admitting that installation can support a domestic industry in combination with other activities, Vuly asserts Springfree's activities fall short. (*Id.* (citing *Certain Airtight Cast-Iron Stoves*, Inv. No. 337-TA-069, Comm'n Op., 1980 WL 41970 at *5 (U.S.I.T.C. 1981).) Vuly notes that unlike the complainant in *Cast-Iron Stoves*, Springfree has no facility where every imported trampoline is repaired and tested. (RIB at 71-72.) Vuly further alleges that Springfree has failed to provide any evidence it designs and prints a service manual in the U.S. or that it even has a service manual.

Springfree's Investments Are Not Quantitatively Significant

Vuly reiterates that Springfree's claimed investments in plant and equipment total [] which it calculates is [] (RIB at 72.) Further, Vuly alleges Springfree's alleged investments in labor and capital total [] (*Id.*) Vuly posits that bearing in mind that Springfree performs no manufacturing, testing, engineering, or R&D in the United States, its investments in plant and equipment and labor and capital are insignificant. (*Id.* (citing *Certain Printing and Imaging Devices and Components Thereof*, Inv. No. 337-TA-690, Comm'n Op. at 31-33, 2011 WL 7628059 (U.S.I.T.C. Feb. 17, 2011).)

Vuly claims that Springfree's foreign investments, to the degree it was able to obtain information about them, also prove the insignificance of the U.S. investments. (*Id.*) While admitting a comparison between foreign and domestic investments is not required, Vuly alleges the disparity informs the context of Springfree's investments. (*Id.* (citing *Certain Male Prophylactic Devices*, Inv. No. 337-TA-546, Comm'n Op. at 43 n.15, 2008 WL 2952724

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(U.S.I.T.C. Aug. 1, 2007).) Vuly notes that Springfree's foreign activities dwarf its domestic industry investments in a number of ways, that is:

[

]

(RIB at 72-73.) On this basis, Vuly alleges "It is clear Springfree's alleged domestic industry investments are insignificant compared to Springfree's investments around the globe." (RIB at 73.)

Springfree's Responsive Argument

Springfree investment in Plant and Equipment

Springfree notes that Vuly does not dispute that installation, customer support, and warranty services are handled out of its Experience Centers, but instead argues only a portion of the investment in those facilities (stores) should be allocated to Springfree's domestic industries because Springfree performs other activities at these facilities. (CRB at 44.) Springfree alleges Vuly is wrong about the need for further allocation. (CRB at 45.) Springfree alleges this is wrong because it "[does not] have any specific boundaries [in the Experience Centers]," and "all of [Springfree's] activities in the experience center is about customer service and customer care," (*Id.* (citing Tr. at 214-215).) Springfree also alleges Vuly's argument is irrelevant because there is testimony (by Mr. Holmes) approximating the percentage of each facility's lease expenditures which can be allocated to various customer support activities, including installation. (*Id.* (citing CX-179C at Q/A 46-47).)

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Springfree also alleges Vuly's position regarding its investment in its warehouses is irrelevant because Springfree does not rely on these investments for purposes of domestic industry in this Investigation. (*Id.*) Springfree also discounts Vuly's argument that Springfree's investment in leasehold improvements for its Experience Centers relates only to "sales, marketing, and warehousing" because it alleges its "investment in leasehold improvements relates to installation, support, and warranty services, including at least investment in computer software, transportation equipment, building improvements, and office equipment such as computers. (*Id.* (citing CX-179C at Q/A 44).)

Employment of Labor and Capital Related to the Domestic Industry Products

Springfree rejects Vuly's challenges to the reliability of Springfree's investment in labor and capital because: (1) the only supporting evidence of Springfree's investment in labor and capital is the W2s produced by Springfree; and (2) the W2s are unreliable because certain portions were redacted. (*Id.*) Springfree notes that in addition to relying on W2s, it also "relies on its 2013 profit & loss statement and the testimony of Mr. Holmes. (CRB at 46.) In addition, Springfree admits certain personal information was redacted from the W2s, but asserts that Vuly failed to explain why these redactions are relevant to the domestic industry inquiry and they are not. (*Id.*)

Investment of Springfree's Authorized Dealers

Springfree also rejects Vuly's challenges to the investment of Springfree's authorized dealers. (*Id.*) Rejecting Vuly's allegation that these costs are speculation, Springfree claims it obtained this information directly from its four largest dealers in the United States. (*Id.* (citing CX-179C at Q/A 70-73).) Springfree notes that Vuly did nothing to challenge the veracity of this information by cross examining Mr. Holmes and did not.

Investment in Plant and Equipment and the Employment of Labor and Capital Is Qualitatively Significant

Springfree next discusses Vuly's arguments that Springfree's installation services are not qualitatively significant because: (1) Springfree provides no evidence that installing its trampolines is dangerous; (2) Springfree provides installation manuals to its customers; (3) Springfree's customers cannot purchase installation services when purchasing a trampolines on-line; [] and (5) Springfree and its dealers make a profit on the installation services. Springfree rejects Vuly's five points as either wrong or immaterial. (*Id.*) Springfree reiterated that its installation services are a critical part of its business in the United States. (*Id.*)

Springfree claims it did provide evidence about the potential dangers associated with installing and using a Springfree trampoline, even presenting testimony that Springfree has received a number of installation-related injury claims from its customers and an example of a gruesome injury that a customer obtained during installation. (CRB at 47 (citing Tr. at 184:24-186:1).) Springfree argues that providing installation manuals to its customers is consistent with its contention that its installation services are qualitatively significant because installing the trampolines can be potentially dangerous and use of an improperly installed trampoline can be dangerous. (*Id.*) Springfree alleges it is its goal is to install 100% of the trampolines it sells in the United States and it does install [] (*Id.*) Springfree explains that it provides the instruction because it is critical that the remaining [] of customers have some instruction as to how to properly install and use the Springfree trampoline in an effort to avoid injury. (*Id.* (citing CX-93 at 1199-1202, 1205, 1207).)

Springfree claims that Vuly's contention that Springfree customers who purchase a trampoline on-line cannot purchase installation service is misleading and immaterial. (*Id.*)

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Springfree alleges that it strives to directly engage with customers through its Experience Centers and that [] (*Id.* (citing Tr. at 182:6-23).)

Springfree claims Vuly's assertion that [] is false because there is testimony that it is a critical part of Springfree's business to [] (*Id.*)

Springfree notes it is just irrelevant whether Springfree and its dealers make a significant profit on installation services to the issue of qualitative significance and can cite not authority in support. (CRB at 47 – 48.)

Investment in Plant and Equipment and the Employment of Labor and Capital Is Quantitatively Significant

Springfree also alleges Vuly uses “misguided calculations for Springfree’s investments related to the domestic industry products in the United States” in an attempt to show that Springfree’s investments are quantitatively insignificant. (CRB at 48.) Springfree disagrees with Vuly’s “narrow apportionment” and calculations. (*Id.*) Springfree maintains that based on Vuly’s own calculations, which it disputes, Springfree’s investment related to the domestic industry products in the United States is roughly [] (*Id.*)

According to Springfree Vuly cannot cite a single case stating that [] is insignificant because none exist. (*Id.*) Instead, whether the number is []

[] Springfree alleges the investment in installation, support, and warranty services is critical to Springfree’s business in the United States. (*Id.*) Springfree also notes that no comparison of Springfree’s investment in the United States verses its foreign investment is required. (*Id.*) Hence, there is no reason to consider the matter.

Vuly's Responsive Argument

Vuly reiterates that Springfree cannot satisfy the economic prong of the domestic industry requirement for the reasons set forth in its post-hearing brief. (RRB at 48.) What is more, according to Vuly, Springfree's Post-Hearing Brief raises a number of inconsistencies and omissions meriting a response. (*Id.*)

Vuly notes that even though Springfree confirmed it did not intend to rely on investments after it filed its Complaint, Springfree states that it has made additional investments in other retail stores after December 24, 2013. (*Id.*) Secondly, despite the allocations contained in Mr. Holmes's witness statement, Springfree now ignores these allocations. (*Id.* (citing CIB at 65-67).) Vuly also notes that even though Springfree argued the '174 patent is commercially successful because Springfree made [] in its non-obviousness argument, Springfree argues it is a small business in the U.S. to make its alleged economic prong investments appear more significant than they are.

Vuly alleges Springfree's brief contains a particularly troubling omission in light of the burden Springfree bears to establish domestic industry. (*Id.*) Vuly asserts that Springfree failed to establish how it determined that of the alleged [] it spent on employment of labor and capital, [] of it was invested in labor directed specifically to installation, support, and warranty services. (RRB at 48-49 (citing CIB at 67).) Vuly maintains that without evidence, neither the [] nor the [] amounts are reliable. (RRB at 49.)

Vuly also notes that Springfree failed to provide any:

documentary evidence or statistics related to the dangers or frequency of injury caused by installing its trampolines, especially considering that (1) it sells trampolines online to individuals that cannot get installation support (Holmes Tr. at 205:3-12), and []

(*Id.*) Nor, according to Vuly, was Springfree able to quantify how often it provides its “customer service activities” as described in its brief (*Id.* (citing Tr. at 199:17-201:15).) Thus, Vuly argues Springfree failed to carry its burden to establish the economic prong of domestic industry through credible, consistent, and reliable evidence. (*Id.*)

Discussion

A. Significance of Springfree’s Investments in Subsection (B) Labor and Capital

1. Alleged Installation Services Costs

One of the key areas of dispute between the parties concerns the issue of whether or not Springfree’s trampoline installation revenues can serve qualitatively as proof of domestic industry. After complete consideration of this issue and the evidence available to me, I find that Springfree’s arguments concerning the alleged criticality or importance of the installation services lack credibility. For me to accept installation services to be as critical as Springfree now claims, requires that I must ignore or give very little weight to unambiguous evidence that existed before this investigation. This evidence, which Vuly outlined in convincing detail, (RIB at 70-72), includes:

the stated purpose of the ’174 patent and invention underlying the domestic industry products is to provide a trampoline that may be easily assembled and disassembled with a minimum of tools (JX-01, at 1:46-48);

Springfree did not require purchasers to buy installation services;

Springfree provided installation instructions or access to installation instructions, including a video of the inventor assembling a trampoline to end users; and

Springfree sold some trampolines over the internet without requiring installation.⁶

As could be envisioned or predicted by the very existence of the foregoing evidence, Springfree was incapable or unable to, beyond offering one anecdotal account of one gruesome

⁶ I accept that it is a limited number as Springfree avers, but note the limited number were still sold without installation.

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injury to a person assembling a trampoline, (Tr. at 184:24-186.1) to offer any other specific or credible evidence of the number of injury claims it had received or how many injuries had occurred during assembly of its trampolines. This is inexplicable, for the number of injury claims associated with an athletic device such as a trampoline, is exactly the kind of information that any prudent business executive would have at his fingertips. Hence, Springfree should have had and offered such information if the problem of safety was as serious as represented. Given this baffling absence of proof and the existing evidence outlined above, I can give no meaningful weight to the testimony of Mr. Holmes on this subject. Accordingly, I cannot find the installation services claimed by Springfree are qualitatively significant for the purposes of establishing domestic industry under this investigation, for there is no credible evidence the installation services are critical to the safety of the end users or otherwise.

As discussed by both parties, it is undisputed that Springfree incurred [] (See e.g., CX-179C at Q/A 48.) It is also undisputed, if unexplained how it was specifically calculated, that Springfree expended [\$] in labor and capital expenses for trampoline installation, customer support, and warranty service expenses in 2013. (Tr. at 187:13-21.) Nevertheless, the amount does not appear to be in dispute. Of that[] Springfree contends it spent [] for employees providing installation services and the remainder is for part-time employees involved in telephone customer support, warranty, returns, repairs, and other installation services. Accepting the [] figure, I find the installations it represent, equate to []

I find nothing in the Record to explain why [] is significant or even what effect it would have if this sum were absent from Springfree's revenue base. Instead, all I find is an assumption that the [] when added to the [] becomes [] and thus significant when added to plant and equipment costs. However, I find

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specifically, that by and in itself, [] within the context of this investigation, is not a significant expense without a credible explanation of why it is significant, whether within an industry or generally. Since such credible proof is absent, I cannot find the cost to be quantitatively significant.

2. Significance of Other Labor Capital Costs

As mentioned, Springfree now agrees that it has only invested [] in labor costs beyond those spent on installation services. Since: (1) Vuly does not materially challenge these costs; (2) these are the kind of costs the Commission usually accepts for domestic industry; and (3) these costs are generally supported by the evidence, I find them to be allocable to Springfree's domestic industry.

However, I find that these costs, in the amount of [] are not quantitatively significant by themselves. These costs only represent [

] In addition, I see no credible testimony claiming these revenues are quantitatively significant in the Record. Even when combined with the other Subsection (B) costs I have found are not properly domestic industry costs (installation), these costs account for only [] Absent some credible evidence of how these aggregated costs could possibly be quantitatively significant, beyond argument, I cannot find them to be.

B. Significance of Springfree's Investments in Subsection (A) Plant and Equipment Costs

One difficult problem I faced in evaluating the facts pertaining to the Economic Prong of Domestic Industry in this investigation is appreciating why the plant and equipment costs Springfree claims are allocable and allowable domestic industry expenses actually are. After considering the Record, the filings, and testimony, I cannot conclude that Springfree, beyond

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presenting arguments and conclusory testimony, established either qualitative or quantitative domestic industry by the preponderance of the evidence for these costs.

Springfree alleges it incurred [] in plant and equipment investments (costs) in 2013, including [] to lease facilities in [] (CX-179C at Q/A 30, 34.) The [] also included [] in capital investments such as leasehold improvements, trucks, signage, office equipment, and other items pertaining to Springfree's facilities in the U.S. (CX-179C at Q/A 43-45.) The [] also included [] for computer software, [] for transportation equipment including company vehicles and mobile jump zones to use at shows, [] for warehouse equipment including forklifts, and [] for building improvements including store renovations and new signage, and office equipment including computers. (CX-179C at Q/A 44.)

The costs Springfree seeks to allocate to domestic industry were spent at its [] "Experience Centers" (retail stores or facilities). The problem is how to determine whether the costs Springfree seeks to allocate to normally domestic industry acceptable costs like customer service and support and for the sake of argument, installation.⁷ Springfree's witness, Mr. Holmes, testified that [] are used to assist in customer service, support and installation. (CIB at 66-67; CX-179C at Q/A 46; Tr. at 191:4-192:4.) Plainly, the real or greatest purpose of these facilities is to sell and market the Springfree trampolines. (Tr. 191.25-192:8.) Further, another purpose would be to sell or market the installation services, especially since, as Vuly argues, installation services were a []

] In any event, Springfree admits that []

] are used for sales and marketing, which are not domestic industries. *Certain*

Cases for Portable Electronic Devices, Inv. Nos. 337-TA-861/867, Order No. 15, 2013 WL

⁷ I have found the installation costs are not proper domestic industry costs.

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5702593, at *18 (U.S.I.T.C. Sept. 10, 2013) (unreviewed by the Commission) (“*Cases for Portable Electronic Devices*”). Hence, any lease costs or improvement expenses for purposes not directly allocable to domestic industry expenses would be likewise not proper domestic industry expenses.

My immediate dilemma was that Springfree used the phrase “related to” (or some similar variant, to justify its allocation of plant and equipment domestic industry costs. (See CIB at 66-67; see also CX-179C at Q/A 30, 34, 43-45.) In addition, in reviewing testimony, I found mostly conclusions and estimates, not fully detailed explanations as to why a certain amount of hours or one expense or another expense should be allocated to domestic industry. (See CX-179C at 46, 47, 61; JX-001C at 162-167.) Thus, while Mr. Holmes could explain what a customer service or installation task consisted of, I find he only proffered conclusions or estimates as to how he allocated total time.

In the instant investigation, Springfree allocates lease costs as [

]

This is a total of [] Taken together, this equals a [] aggregate percentage that Springfree should have assigned to all experience center costs and which I do assign since the costs in question are clearly assignable/allocable to the experience centers.

After deducting lease expenses from the [] remains in plant and equipment costs. (CIB at 66-67.) This [] is supposedly further broken down into leasehold improvement expenses such as trucks, signage, office equipment and other items, including [] for software and [] for transportation equipment such as company vehicles and mobile jump zones to use at shows, [] for warehouse equipment, including forklifts, [] for building improvements including renovations and new signage, plus

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computers. (CX-179C at Q/A 44.) (These sums do not perfectly add up to [] but instead [] which is statistically irrelevant.)

The problem for Springfree is that at best, the [] seems only tangentially related to customer service or installation support. Obviously, the warehouse expenses bear no relationship to either category of domestic industry and given that Mr. Homes has already admitted that of [] in lease costs for [] that [] is allocable on a space basis by Mr. Holmes. Under his logic, [] of other associated costs should also the best I can permit for the rest of the [] on a percentage basis, after deducting the warehouse expenses and other unallowable marketing expenses included in the mobile jump zones to use at shows.

Accordingly, I find, at the best, that the most in plant and equipment that can be allocated to domestic industry is less than [] In so finding, I have not deducted expenses for non-domestic industry costs like the shows, because I can only guess at them. Thus the [] is arguably an over allocation. In a more harsh light, it could be reasonably argued that the entirety of the [] in costs should be deducted since there is no specific or credible proof as to their allocability beyond Mr. Holmes vague and conclusory testimony on space allocation. However, I have declined to do so in this instance, for I find it to be ultimately insignificant to the ultimate question of whether the costs are significant.

Under the circumstances, I cannot find [] to be a significant expense for [] in annual revenues. The percentage in question, [] is too insignificant to qualify as domestic industry and there is no credible testimony of its significance.

Even when the [] is added to the costs of installation []⁸, allocable labor for customer service and warranty, etc. [] and allocable lease expenses [], all of Springfree's claimed domestic industry costs do not exceed [] of its

⁸ A sum I found not to be qualitatively significant. Hence, the actual percentage is actually []

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revenues or approximately [] Since there is no credible testimony that explains how [] (even including the installation costs I have found are not qualitatively significant) is significant in terms of the industry or otherwise I cannot conclude it is significant enough to find domestic industry.

C. Conclusion

In consideration of the foregoing, I determine that Springfree has failed to satisfy the economic prong of the domestic industry requirement. As noted, Springfree failed to establish qualitative or quantitative significance for its claimed Subsection (B) installation costs. Nor did Springfree establish quantitative significance for any of its remaining Subsection (B) or (A) costs discussed above. Finally, even if Springfree's arguably allowable domestic industry costs are aggregated, they consist of only [] of its 2013 revenues, as amount too small to facially support quantitative significance to prove domestic industry. Rather, what we have here, as Vuly asserts, is an entity that does almost everything of any real significance to its patented trampolines, but selling them, overseas.

VI. CONCLUSIONS OF LAW

1. The Commission has personal jurisdiction over the parties and subject-matter jurisdiction over the accused products.
2. The importation or sale requirement of Section 337 is satisfied.
3. The accused Vuly Thunder Trampolines infringe claims 1 and 13 of U.S. Patent No. 6,319,174.
4. The Springfree DI Products do not practice claim 1 of the '174 patent.
5. The Springfree DI Products practice claim 13 of the '174 patent.
6. Claim 1 of the '174 patent has not been shown to be invalid.
7. Claim 13 is invalid as anticipated pursuant to 35 U.S.C. § 102.
8. The domestic industry requirement is not met.
9. There has been no violation of Section 337.

VII. INITIAL DETERMINATION AND ORDER

Based on the foregoing,⁹ it is the Initial Determination of this Administrative Law Judge that there is no violation of Section 337 of the Tariff Act of 1930, as amended, in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain soft-edged trampolines and components thereof, in connection with the claims of U.S. Patent No. 6,319,174. Furthermore, it is the determination of this Administrative Law Judge that a domestic industry in the United States does not exist that practices or exploits U.S. Patent No. 6,319,174.

The undersigned hereby CERTIFIES to the Commission this Initial Determination AND Recommended Determination on Remedy and Bond, together with the record of the hearing in this investigation consisting of the following: the transcript of the evidentiary hearing, with appropriate corrections as may hereafter be ordered; and the exhibits accepted into evidence in this investigation as listed in the appendices hereto.¹⁰

Pursuant to 19 C.F.R. § 210.42(h), this Initial Determination shall become the determination of the Commission unless a party files a petition for review pursuant to 19 C.F.R. § 210.43(a) or the Commission, pursuant to 19 C.F.R. § 210.44, orders on its own motion a review of the Initial Determination or certain issues therein.

⁹ The failure to discuss any matter raised by the parties or any portion of the record herein does not indicate that said matter was not considered. Rather, any such matter(s) or portion(s) of the record has/have been determined to be irrelevant, immaterial or meritless. Arguments made on brief which were otherwise unsupported by record evidence or legal precedent have been accorded no weight.

¹⁰ The pleadings of the parties filed with the Secretary need not be certified as they are already in the Commission's possession in accordance with Commission rules.

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This Initial Determination and Recommended Determination is being issued as confidential, and a public version will be issued pursuant to Commission Rule 210.5(f). Within seven (7) days of the date of this Initial Determination and Recommended Determination, the parties shall jointly submit: (1) a proposed public version of these opinions with any proposed redactions bracketed in red; and (2) a written justification for any proposed redactions specifically explaining why the piece of information sought to be redacted is confidential and why disclosure of the information would be likely to cause substantial harm or likely to have the effect of impairing the Commission's ability to obtain such information as is necessary to perform its statutory functions.¹¹

SO ORDERED.



Thomas B. Pender
Administrative Law Judge

¹¹ Under Commission Rules 210.5 and 201.6(a), confidential business information includes:

information which concerns or relates to the trade secrets, processes, operations, style of works, or apparatus, or to the production, sales, shipments, purchases, transfers, identification of customers, inventories, or amount or source of any income, profits, losses, or expenditures of any person, firm, partnership, corporation, or other organization, or other information of commercial value, the disclosure of which is likely to have the effect of either impairing the Commission's ability to obtain such information as is necessary to perform its statutory functions, or causing substantial harm to the competitive position of the person, firm, partnership, corporation, or other organization from which the information was obtained, unless the Commission is required by law to disclose such information.

See 19 C.F.R. § 201.6(a). Thus, to constitute confidential business information the disclosure of the information sought to be designated confidential must **likely have the effect of** either: (1) impairing the Commission's ability to obtain such information as is necessary to perform its statutory functions; or (2) **causing substantial harm** to the competitive position of the person, firm, partnership, corporation, or other organization from which the information was obtained.

CERTIFICATE OF SERVICE

I, Lisa R. Barton, hereby certify that the attached **PUBLIC INITIAL DETERMINATION** has been served upon the following parties via first class mail and air mail where necessary on

~~APR 15 2015~~ 2015.



Lisa R. Barton, Secretary
U.S. International Trade Commission
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