

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CHOIROCK CONTENTS FACTORY CO., LTD.,
Petitioner,

v.

SPIN MASTER LTD.,
Patent Owner.

IPR2019-00897
Patent 8,500,508 B2

Before HYUN J. JUNG, NEIL T. POWELL, and BRENT M. DOUGAL,
Administrative Patent Judges.

Opinion for the Board filed by *Administrative Patent Judge* JUNG.

Concurring Opinion filed by *Administrative Patent Judge* DOUGAL.

JUNG, *Administrative Patent Judge.*

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

I. INTRODUCTION

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

A. *Background and Summary*

Choirock Contents Factory Co., Ltd. (“Petitioner” or “Choirock”) filed a Petition (Paper 1, “Pet.”), requesting institution of an *inter partes* review of claims 1–5 of U.S. Patent No. 8,500,508 B2 (Ex. 1001, “the ’508 patent”). Concurrently with the Petition, Petitioner also filed a “Motion for Joinder to Related *Inter Partes* Review of U.S. Patent No. 8,500,508 ([*Mattel, Inc. v. Spin Master Ltd.*] IPR2018-01672) Under 35 U.S.C. § 315(c) and 37 C.F.R. § 42.122(b).” Paper 3. Spin Master Ltd. (“Patent Owner” or “Spin Master”) filed a Preliminary Response (Paper 14) and an Opposition to Petitioner’s Motion for Joinder to IPR2018-01672 (Paper 7). Petitioner thereafter filed a Reply to Patent Owner’s Opposition (Paper 8), and with our authorization (Paper 15), Petitioner further filed a Reply to Patent Owner’s Preliminary Response (Paper 16). Pursuant to 35 U.S.C. § 314, we instituted an *inter partes* review of the ’508 patent and at the same time denied the Motion for Joinder. Paper 17 (“Dec. to Inst.”).

After institution, Patent Owner filed a Response (Paper 30, “PO Resp.”), to which Petitioner filed a Reply (Paper 33, “Pet. Reply”). Patent Owner thereafter filed a Sur-reply (Paper 38, “PO Sur-reply”). An oral hearing in this proceeding was held on June 25, 2020; a transcript of the hearing is included in the record (Paper 41, “Tr.”).

For the reasons below, Petitioner persuades us by a preponderance of the evidence that claims 1–5 of the ’508 patent are unpatentable.

B. Real Parties in Interest

Petitioner indicates that Choirock is the real party in interest. Pet. 1; Paper 25, 2. Patent Owner indicates that Spin Master is the real party in interest and notes that Spin Master, Inc. is a subsidiary. Paper 5, 2.

C. Related Matters

The parties indicate that a complaint alleging infringement of the '508 patent was filed on April 24, 2018 in *Spin Master Ltd. v. Mattel, Inc.*, Case No. 2:18-cv-3435 (C.D. Cal.). Pet. 1; Paper 5, 2; Paper 25, 2; Ex. 1014 (“Spin Master Ltd.’s Complaint for Patent Infringement”); Ex. 1015 (“Spin Master Ltd.’s First Amended Complaint for Patent Infringement”).

The parties also indicate that, on September 7, 2018, petitions requesting *inter partes* review of the '508 patent and related U.S. Patent Nos. 9,868,073 and 9,975,058 were filed in, respectively, IPR2018-01672, IPR2018-01673, and IPR2018-01674. Pet. 2; Paper 5, 2; Paper 25, 3. We granted joint motions to terminate those proceedings. Pet. 2; Paper 5, 2; Paper 25, 3. The present Petition was filed before termination. Paper 4.

D. The '508 Patent (Ex. 1001)

The '508 patent issued August 6, 2013, from an application filed June 23, 2010, which is a continuation of an application filed December 22, 2006, and claims priority to a foreign application filed on February 20, 2006. Ex. 1001, codes (22), (45), (63), 1:6–11; *see also* Pet. 12 (noting the same).

The '508 patent particularly relates to “a toy that transforms by means of . . . a magnetic force.” Ex. 1001, 1:17–18. Figure 7 of the '508 patent is reproduced below.

Figure 7

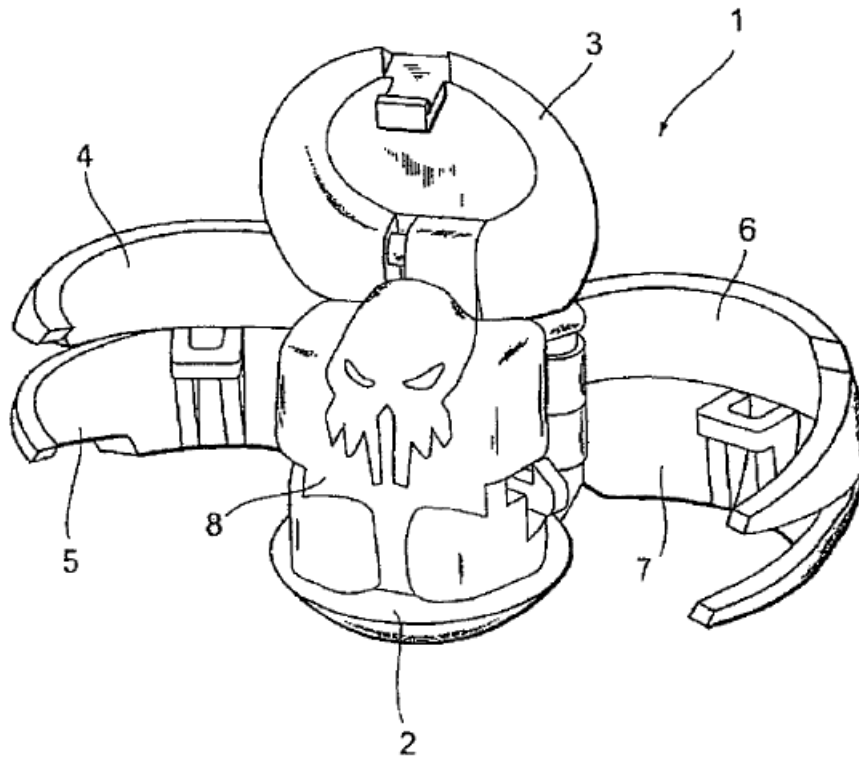


Figure 7 is a “perspective view of the toy . . . showing a post-transformation state.” Ex. 1001, 4:54–55. “Toy 1 . . . transforms from a rollable, spherical shape (the first shape . . .) to a fictitious character shape (a second shape . . .) . . . by means of the action of a magnetic force.” *Id.* at 5:12–16; *see also id.* at Figs. 2–6(b) (showing pre-transformation state). The exterior of toy 1 forms the first or spherical shape, and toy 1 includes lower component 2, upper component 3, lateral components 4–7, front component 8, and back component 9. *Id.* at 5:20–31. Figure 1 of the ’508 patent is reproduced below.

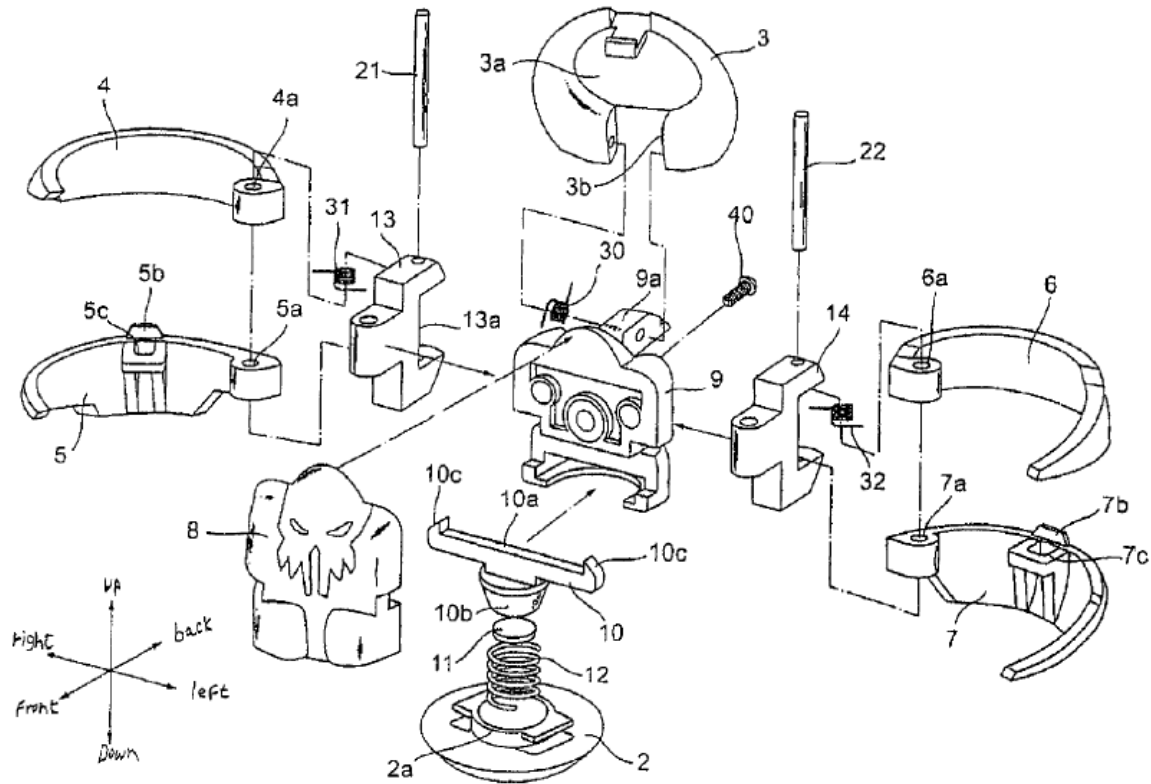


Figure 1

Figure 1 is “an exploded perspective view of the toy.” Ex. 1001, 4:38–39. Within toy 1 are locking component 10, magnet 11 at the lower end of locking component 10, and spring 12 to move locking component 10 upwardly. *Id.* at 5:33–37, 5:46–50, 7:5–8, Figs. 1, 5(a), 5(b). When no magnetic force acts on toy 1, locking component 10 is biased upwardly by spring 12 so that interior locking portion 10c engages exterior locking portions 5c, 7c and lateral components 5, 7 cannot turn outwardly. *Id.* at 7:5–13, Fig. 5(a). Lateral components 5, 7 include protrusions 5b, 7b to lock lateral components 4, 6, and upper component 3 includes convex portion 3c that engages lateral component 4 to maintain the first or spherical shape. *Id.* at 6:7–15, 6:66–7:2, 7:5–13, 8:12–17, Figs. 1, 3.

When a magnetic force acts on toy 1, locking component 10 moves downwardly, springs 31, 32 cause lateral components 4–7 to move outwardly, and spring 30 moves upper component 3 upwardly to transform toy 1 to the second or fictional character shape. Ex. 1001, 6:15–20, 6:33–36, 6:43–46, 6:55–58, 6:62–65, 7:13–18, 7:29–31, 8:18–37.

E. Illustrative Claim

The '508 patent has 9 claims, of which Petitioner challenges claims 1–5. Of those, claim 1, reproduced below with indentations added for readability, is the only independent claim.

1. A toy comprising
a main body element and
at least one first moveable element associated with said main body element and moveable with respect thereto from a first position adjacent said main body element in which the toy is rollable along a playing surface containing a metal or magnetic material, to a second position in which at least a portion of said first moveable element has moved away from said main body element and the toy is not rollable along the playing surface,
said at least one first moveable element being permanently biased toward said second position, and being provided with catch means co-operable with moveable releasable latch means in said main body element to maintain at least one said first moveable element in said first position until said latch means is released,
wherein said releasable latch means is provided with a magnet, whereby said releasable latch means is moveable out of engagement with said catch by attraction to said playing surface, whereby a rolling of the toy along the playing surface ceases when said latch means is moved out of engagement with said catch.

Ex. 1001, 15:22–41.

F. Asserted Prior Art and Proffered Testimonial Evidence

Petitioner identifies the following references as prior art in the asserted grounds of unpatentability:

Name	Reference	Exhibit No(s).
Thompson	US 3,687,452, issued August 29, 1972	1009
Shannon	US 5,310,378, issued May 10, 1994	1007
Saucier	US 7,306,504 B2, filed July 12, 2004, issued December 11, 2007	1010
Tomiyama ¹	Japanese Examined Utility Model No. JP 38-9155, published May 15, 1963	1005, 1006
Aprile	WO 2006/051417 A2, published May 18, 2006	1008

Petitioner argues that each of the above listed references is prior art under 35 U.S.C. § 102(b) or 102(e). Pet. 21–22. Patent Owner does not present any argument disputing whether the references are prior art. *See generally* PO Resp.; PO Sur-reply.

Petitioner also provides a “Declaration of Dr. Barry Kudrowitz in Support of Petition for Inter Partes Review” (Ex. 1002) and a “Reply Declaration of Dr. Barry Kudrowitz in Support of Petition for *Inter Partes* Review” (Ex. 1020). Patent Owner provides a “Declaration of Dr. Jason Janét” (Ex. 2001). Deposition transcripts were filed for Dr. Kudrowitz (Ex. 2002) and Dr. Janét (Ex. 1021).

¹ All references to Tomiyama in this Decision are to the certified translation filed as Exhibit 1005.

G. Asserted Grounds

Petitioner asserts that claims 1–5 would have been unpatentable on the following grounds:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–4	§ 103(a) ²	Tomiyama
1–4	§ 103(a)	Tomiyama, Thompson
5	§ 103(a)	Tomiyama, Thompson, Saucier
1–4	§ 103(a)	Tomiyama, Thompson, Aprile
5	§ 103(a)	Tomiyama, Thompson, Aprile, Saucier
1–5	§ 103(a)	Tomiyama, Shannon
1–5	§ 103(a)	Tomiyama, Shannon, Aprile

Pet. 12, 23–74.

II. ANALYSIS

A. Legal Standards

In an *inter partes* review, Petitioner bears the burden of proving unpatentability of the challenged claims, and the burden of persuasion never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). To prevail in its challenges, Petitioner must prove unpatentability by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d).

² The relevant sections of the Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, 125 Stat. 284 (2011), took effect on March 16, 2013. The application from which the ’508 patent issued is a continuation of an application filed on December 22, 2006, and the ’508 patent claims priority to a foreign application filed on February 20, 2006. Ex. 1001, codes (30), (63). Because the first application and the foreign application were filed before March 16, 2013, the effective date of the relevant amendment, the pre-AIA versions of §§ 102 and 103 apply.

The U.S. Supreme Court set forth the framework for applying the statutory language of 35 U.S.C. § 103 in *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966):

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.

As explained by the Supreme Court in *KSR International Co. v. Teleflex Inc.*:

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. To facilitate review, this analysis should be made explicit.

550 U.S. 398, 418 (2007) (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.”)).

“Whether an ordinarily skilled artisan would have been motivated to modify the teachings of a reference is a question of fact.” *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1327 (Fed. Cir. 2016). “[W]here a party argues a skilled artisan would have been motivated to combine references, it must

show the artisan ‘would have had a reasonable expectation of success from doing so.’” *Arctic Cat Inc. v. Bombardier Recreational Prods. Inc.*, 876 F.3d 1350, 1360–61 (Fed. Cir. 2017) (quoting *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.*, 676 F.3d 1063, 1068–69 (Fed. Cir. 2012)).

The parties’ disputes are related to the scope and content of the asserted prior art, the differences between claim 1 and the asserted references, and Petitioner’s reason for combining those references. After reviewing the complete record, we conclude that Petitioner has shown by a preponderance of the evidence that (1) Tomiyama alone, (2) Shannon combined with Tomiyama, and (3) Shannon combined with Tomiyama and Aprile disclose, teach, or suggest each limitation of claims 1–5, and that a person of ordinary skill in the art would have had a reason to modify or combine these references in the manner asserted by Petitioner with a reasonable expectation of success.

B. Level of Ordinary Skill in the Art

Petitioner asserts that one of ordinary skill in the art “would have a bachelor’s degree in mechanical engineering or a related field and at least three years of experience in toy design.” Pet. 14 (citing Ex. 1002 ¶¶ 26–28). In our Decision Granting Institution of *Inter Partes* Review, we preliminarily adopted Petitioner’s unopposed proposed level of ordinary skill. Dec. to Inst. 17. Patent Owner states that its declarant applies Petitioner’s proposed level of ordinary skill in his analysis. PO Resp. 2 (citing Ex. 2001 ¶ 30); *see also* Tr. 71:15–22 (confirming that, for purposes of this proceeding, Patent Owner is not disputing Petitioner’s proposed level of ordinary skill).

In determining the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citation and internal quotation marks omitted).

Based on the full record before us, we see no reason to disturb our preliminary finding regarding the level of ordinary skill in the art. Dec. to Inst. 17. Accordingly, we maintain and reaffirm that one of ordinary skill in the art “would have a bachelor’s degree in mechanical engineering or a related field and at least three years of experience in toy design.” *Id.* (quoting Pet. 14). This level of skill in the art is consistent with the disclosure of the ’508 patent and the prior art of record.

C. Claim Construction

On October 11, 2018, the Office revised its rules to harmonize the Board’s claim construction standard with that used in federal district court. Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340 (Oct. 11, 2018) (amending 37 C.F.R. § 42.100(b) effective November 13, 2018) (now codified at 37 C.F.R. § 42.100(b) (2019)). This rule change applies to this proceeding. *See* Pet. 14–15 n.2 (stating that the “USPTO replaced the broadest reasonable interpretation standard with the claim construction standard that is used to construe claims during a civil action in federal district court”); Paper 4, 1 (according filing date of March 29, 2019 to the Petition); PO Resp. 1 (stating that “[b]ecause this IPR was filed after November 13, 2018, claims are interpreted under the *Phillips* standard”).

Petitioner proposes interpretations for “rollable,” “closed position,” “open position,” “latch means,” and “catch means.” Pet. 15–20. Petitioner argues that “latch means” and “catch means” are means-plus-function limitations and asserts a function and corresponding structure for each. *Id.* at 19–20 (Ex. 1001, 3:42–4:16, 8:6–17, Figs. 1, 5a, claim 1; Ex. 1002 ¶¶ 22–25). Petitioner also contends that its proposed interpretations are appropriate under either the broadest reasonable interpretation standard or the claim construction standard used in federal district court. *Id.* at 15 n.2.

In our Decision instituting review, we preliminarily adopted Petitioner’s proposed interpretations for “latch means” and “catch means” to determine whether Petitioner showed a reasonable likelihood that it would prevail with respect to at least one of the claims challenged in the Petition. *See* Dec. to Inst. 18–19. Patent Owner states that it “disagrees with Choirock’s proposed constructions” but “applies Choirock’s construction in its arguments.” PO Resp. 1; *see also* Tr. 71:23–72:3 (Patent Owner’s counsel agreeing that Patent Owner did not propose any claim interpretation).

Therefore, based on the full record before us, we maintain and affirm our preliminary interpretations for “latch means” and “catch means.” Specifically, we determine that (1) the “function of the latch means is to cooperate with the catch means to maintain the at least one first movable element in the first position until the latch means is released” and (2) the corresponding structure is locking component 10. Pet. 19; Ex. 1001, 3:42–4:16, 8:6–17, Figs. 1, 5(a); Ex. 1002 ¶¶ 22–23.

We also determine that (1) the “function of the catch means is to cooperate with the latch means to maintain the at least one first movable element in the first position until the latch means is released” and (2) the

corresponding structures are elements 5c, 7c. Pet. 20; Ex. 1001, 3:42–4:16, 8:6–17, Figs. 1, 5(a); Ex. 1002 ¶¶ 24–25.

We also determine that no other claim term requires express construction to resolve the parties’ disputes. *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (construing explicitly only those claim terms in controversy and only to the extent necessary to resolve the controversy); *see also Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (applying *Vivid Techs.* in the context of an *inter partes* review).

D. Obviousness Based on a Modification of Tomiyama Alone

Petitioner contends that Tomiyama shows that the “combination of magnetic latches and transformable toys” was known. Pet. 5. Petitioner specifically contends that claims 1–4 are unpatentable over Tomiyama without any modifications or, alternatively, modified to be unrollable after passing over magnet 29 made to resemble a landmine. Pet. 23–46.

Patent Owner responds that Tomiyama alone does not teach or suggest a toy comprising “at least one first moveable element . . . moveable . . . to a second position in which . . . the toy is not rollable along the playing surface,” as recited by claim 1. PO Resp. 3–8. Patent Owner also responds that it would not have been obvious to modify Tomiyama’s toy to be not rollable. *Id.* at 8–11.

For the reasons explained below, based on the full record before us, Petitioner persuades us by a preponderance of the evidence that claims 1–4 are unpatentable over Tomiyama modified to be made unrollable.

1. *Scope and Content of the Asserted Prior Art*

a) *Tomiyama (Ex. 1005)*

Tomiyama describes a “running toy having a desired shape,” such as tank-like running toy 1, with “configurational elements being assembled so as to self-destruct as soon as an activating body linked to an engaging tab is activated by attraction to a magnet body and the push-out body is pushed out.” Ex. 1005 ¶¶ 1, 2. Tomiyama’s “utility model is embodied by attaching a push-out body 2 inside a tank-like running toy 1 via a spring 4 so as to be able to push out.” *Id.* ¶ 2. Figure 2 of Tomiyama is reproduced below.

FIG. 2

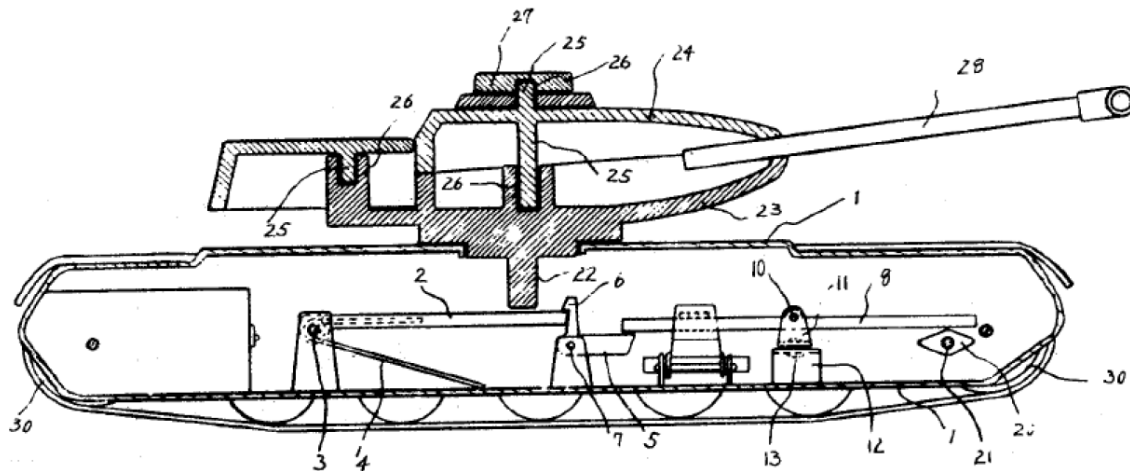


Figure 2 shows a cross-sectional view of Tomiyama’s toy. *Id.* ¶¶ 4, 6, Brief Description. Toy 1 includes push-out body 2, spring 4 that urges push-out body 2 outwardly, activating body 15 with magnet 16 (shown in Figures 3 and 5), and engaging tab 6 linked to activating body 15. *Id.* ¶ 2. The toy also includes wheel 30. *Id.* ¶ 3.

Self-destructing base 23 with protrusion 22 is loosely mounted in toy 1 so that protrusion 22 is near push-out body 2. *Id.* ¶ 2. Other self-destructing components 24, 27, 28 are mounted on base 23. *Id.* Tomiyama

states that “self-destructing components 24, 27, 28, including self-destructing base 23 [are] made to resemble the turret and gun of a tank.” *Id.* ¶ 4.

When toy 1 passes near magnet 29 made to resemble a landmine (shown in Figure 1), magnet 29 attracts magnet 16 inside toy 1, and the movement of magnet 16 causes activating body 15 to release engaging tab 6 from push-out body 2 through rotating plate 8, coil spring 14, and cam plate 20. *Id.* ¶¶ 3, 4. Spring 4 urges push-out body 2 to strike protrusion 22, which causes self-destructing base 23 and self-destructing components 24, 27, 28 to resemble a tank hitting a landmine and being destroyed, thereby resulting in an “interesting effect.” *Id.* ¶ 4. Tomiyama states that the toy “can be a tank as shown in the drawings, or any other type of vehicle,” and “[i]n each case, an interesting self-destructing toy is provided.” *Id.* ¶ 6.

Both parties’ declarants provide testimony that supports the above description of Tomiyama and provides additional details. *See* Ex. 1002 ¶¶ 42–46; Ex. 2001 ¶¶ 32–47.

2. *Analysis of Claim 1*

Petitioner presents together three challenges based on Tomiyama: (1) Tomiyama alone, (2) Tomiyama modified by Thompson, and (3) Thompson modified by Tomiyama. *See* Pet. 23–36. We analyze below specifically Petitioner’s challenge based on Tomiyama alone.

Petitioner argues that Tomiyama teaches the limitations of claim 1 with citations to the certified translation of Tomiyama and support from its declarant testimony. *Id.* at 30–33, 35–43; *see also id.* at 23–24 (arguing what Tomiyama teaches).

a) *“A toy comprising . . . ”*

Petitioner argues that Tomiyama teaches a toy. Pet. 30 (citing Ex. 1002 ¶¶ 81–82; Ex. 1005 ¶¶ 1, 4).

To the extent the preamble is limiting, we find that the relied-upon portions of Tomiyama teach “a running self-destructing toy” and “running toy 1.” Ex. 1005 ¶¶ 1, 4. We also credit Dr. Kudrowitz’s testimony that Tomiyama teaches a toy tank because Tomiyama supports the testimony. Ex. 1002 ¶ 82 (citing Ex. 1005 ¶¶ 1, 4).

Patent Owner does not present any argument that Tomiyama fails to teach or suggest the preamble of claim 1. *See generally* PO Resp.; PO Sur-reply. Based on the full record, because Tomiyama teaches a self-destructing toy, Petitioner persuades us that Tomiyama teaches the preamble of claim 1.

b) *“a main body element and at least one first moveable element associated with said main body element and moveable with respect thereto from a first position adjacent said main body element in which the toy is rollable along a playing surface containing a metal or magnetic material, to a second position in which at least a portion of said first moveable element has moved away from said main body element and the toy is not rollable along the playing surface, . . . ”*

Petitioner argues that Tomiyama teaches the above-quoted recitation. Pet. 30–33 (arguing Tomiyama teaches the same limitation) (citing Ex. 1002 ¶¶ 83–90; Ex. 1005 ¶¶ 1–4, Figs. 1, 2, 4).

We find that a relied-upon portion of Tomiyama teaches “a running self-destructing toy” with “configurational elements being assembled so as to self-destruct as soon as an activating body linked to an engaging tab is activated by attraction to a magnet body and the push-out body is pushed out.” Ex. 1005 ¶ 1. Tomiyama describes in particular “a push-out body 2

inside a tank-like running toy 1,” “self-destructing base 23 having a struck protrusion 22 on the lower end [that] is loosely mounted on the running toy 1,” and “struck protrusion 22 is positioned over the push-out body 2.” *Id.*

¶ 2. Tomiyama’s Figure 1 shows a toy shaped like a tank, and Figure 2 shows self-destructing base 23 with struck protrusion 22 positioned over push-out body 2. “[O]ther self-destructing components 24, 27, 28 are mounted on the self-destructing base 23 so as to easily self-destruct.” *Id.*

Tomiyama also describes how push-out body 2 operates to eject self-destructing base 23 and self-destructing components 24, 27, 28 when running toy 1 passes over magnet 29. *See id.* ¶¶ 3–4, Figs. 2 (showing other components within running toy 1 in sectional view), 4 (showing the other components in perspective view); *see also* Ex. 2001 ¶¶ 32–47 (Dr. Janét describing the operation of Tomiyama’s tank). Tomiyama does not indicate expressly that any other component of running toy 1, such as wheel 30, is affected. Ex. 1005 ¶ 4.

We credit Dr. Kudrowitz’s testimony regarding the “main body element,” “at least one first moveable element,” “toy [] rollable along a playing surface containing a metal or magnetic material,” and “a second position in which at least a portion of said first moveable element has moved away from said main body element” because Tomiyama supports it. Ex. 1002 ¶¶ 84–88 (citing Ex. 1005 ¶¶ 2, 4, Figs. 1, 2, 4).

As summarized below, Patent Owner does not dispute whether Tomiyama teaches the limitations regarding the “main body element,” “at least one first moveable element,” “toy [] rollable along a playing surface containing a metal or magnetic material,” and “a second position in which at least a portion of said first moveable element has moved away from said main body element.” *See generally* PO Resp.; PO Sur-reply.

Based on the full record, because Tomiyama teaches running toy 1 and self-destructing components 24, 27, 28 that are loosely mounted on running toy 1 and can be pushed out when running toy 1 passes over magnet 29, Petitioner persuades us that Tomiyama teaches or suggests “a main body element and at least one first moveable element associated with said main body element and moveable with respect thereto from a first position adjacent said main body element in which the toy is rollable along a playing surface containing a metal or magnetic material.” Also, because Tomiyama describes pushing-out or ejecting the self-destructing components 24, 27, 28 to resemble destruction, Petitioner persuades us that Tomiyama teaches or suggests “a second position in which at least a portion of said first moveable element has moved away from said main body element.”

The parties dispute whether Tomiyama teaches or suggests that “the toy is not rollable along the playing surface,” as recited by claim 1. *See* PO Resp. 3–8; Pet. Reply 3–5; PO Sur-reply 1–4. We summarize and address those arguments below.

(1) “To a Second Position in Which . . . the Toy is Not Rollable Along the Playing Surface”

(a) Patent Owner’s Response

Patent Owner responds that “the Tomiyama toy tank with motorized wheels is rollable in both the mapped first position and the second position.” PO Resp. 3 (citing Dec. to Inst. 11–12; Ex. 1001, 15:22–29). According to Patent Owner, “Tomiyama discloses a motorized drive mechanism of the tank that provides for running of the toy tank on wheels 30” (*id.* (citing Ex. 1005 ¶ 3, Fig. 1; Ex. 2001 ¶¶ 34–36)), and “Tomiyama teaches that play of the tank resembles the effect of the tank passing over a landmine and

being destroyed” (*id.* at 4 (citing Ex. 1005 ¶ 4)). *See also id.* at 3–4 (summarizing Petitioner’s mapping of “main body element,” “at least one moveable element,” “first position,” and “second position”) (citing Pet. 31, 32), 4–5 (explaining how Tomiyama imitates being “destroyed”) (citing Ex. 1005 ¶¶ 2, 4, 5; Ex. 2001 ¶ 33).

Patent Owner argues that Petitioner erroneously relies on Tomiyama’s sentence that “the running toy 1 continues to travel down the road until the running toy 1 is passing over the magnet 29.” PO Resp. 5 (citing Pet. 33; Ex. 1005 ¶ 4). Patent Owner contends that the relied-upon sentence, when read with following sentences, indicates that one of ordinary skill in the art “would understand that Tomiyama is describing how the toy operates to strongly push off the turret” and “would not understand that the toy tank is not rollable after the turret is pushed off.” *Id.* at 5–6 (citing Ex. 1005 ¶¶ 4, 5; Ex. 2001 ¶¶ 48–58). Patent Owner also contends that “[t]here is no discussion that the tank itself somehow needs to be reassembled or reconfigured so that it is rollable for another round of play,” pushing off the turret “does not mean the tank body is adversely impacted so that it is not rollable,” and one of ordinary skill in the art “would understand that the tank is still rollable even when the turret is pushed off, as the turret is a simple mechanical assembly of parts unaffected by the motorized rolling mechanism.” *Id.* at 6–7 (citing Ex. 2001 ¶¶ 55–56); *see also id.* at 11 (arguing that “Tomiyama does not teach the tank is not rollable after passing over the ‘landmine’ magnet”).

Patent Owner further contends that “the motorized drive train and wheels would plainly not be ‘destroyed’” because Tomiyama’s tank is “quickly reassembled for another round of play,” if not “it would take new components, reprogramming and extensive repair to make the toy

operational,” and “[t]here is no teaching in Tomiyama the tank’s motorized mechanism for imparting the rolling motion via the wheels is affected when the turret is pushed off the tank.” PO Resp. 7 (citing Ex. 1005 ¶ 5).

Regarding Dr. Kurdrowitz’s testimony, Patent Owner argues that his “opinion is unhelpful, as it is conclusory without any additional expert explanation beyond Choirock’s proffered argument” and that claim 1 “requires ‘the toy is not rollable along the playing surface,’” not movement ceasing. *Id.* (citing Ex. 1002 ¶ 89).

(b) Petitioner’s Reply

Petitioner replies that Patent Owner’s arguments are based on an incorrect interpretation of the limitation, and that, without the turret and only the bottom or “main body element,” the entire “toy” is not rollable. Pet. Reply 1–2 (citing Pet. 31; PO Resp. 5–7). Petitioner argues that “the term ‘is not rollable’ is met when the toy ceases movement regardless of its capability of being rolled or not” and Patent Owner’s argument “is irrelevant because whether the remainder parts of the toy make the toy still capable of rolling after destruction” is not pertinent to whether the limitation is met. *Id.* at 2, 3 (citing PO Resp. 7). Petitioner also argues that Tomiyama “expressly states that the toy runs *until* it passes over the magnet” and “[t]he term ‘until’ as used in Tomiyama means running ‘up to such time as’ the toy passes over the landmine magnet.” *Id.* at 2–3.

Petitioner also replies that one of ordinary skill in the art would understand that Tomiyama’s toy is not rollable in the asserted second position. Pet. Reply 3. Petitioner contends that “[t]he primary theme of the toy is to have the effect of self-destruction” and “[t]he stated purpose of Tomiyama is to have quick reassembly after destruction for another round of play.” *Id.* (citing Ex. 1020 ¶ 21; Ex. 1021, 44:23–25, 47:1–11, 48:14–17).

Petitioner also contends that one of ordinary skill in the art “would understand that continuing to run only the bottom half of Tomiyama’s toy after destruction without reassembly would make the toy no longer a self-destruction toy” and “would not understand that Tomiyama suggests to continue to run the toy after destruction without reassembly as such play is not part of Tomiyama’s intended play.” *Id.* at 4 (citing Ex. 1020 ¶ 22).

According to Petitioner, “[t]he self-destructing components must be reassembled before the toy is run for another round of play,” and Dr. Janét’s deposition testimony is contradictory on this point. Pet. Reply 4 (citing Ex. 1020 ¶ 23; Ex. 1021, 70:22–71:8). Petitioner also argues that one of ordinary skill in the art “would understand that Tomiyama’s toy is expected to stop running during the reassembly step in order to have a quick reassembly,” and that Dr. Janét’s hypothetical examples of playing with Tomiyama’s toy “are directly contrary to Tomiyama’s express teaching that the tank toy runs *until* passing over the landmine magnet.” *Id.* at 4–5 (citing Ex. 1020 ¶ 24; Ex. 1021, 69:20–70:5).

(c) Patent Owner’s Sur-Reply

Patent Owner replies that Petitioner’s argument based on the bottom half not being the toy was not in the Petition. PO Sur-reply 1 (citing Pet. 30). Patent Owner argues that “the turret being blown off does not prevent continued rolling of the toy tank,” “there is no teaching or suggestion that the toy ceases rolling once the turret comes off,” and Petitioner conflates limitations to argue the toy is not rollable when it ceases movement. *Id.* at 1–2 (citing Pet. Reply 5–7). Patent Owner also argues, as an example, that “a toy that is programmed to cease movement upon an event occurring (e.g., a sensor is triggered that there is a magnetic force) is

not the same as a toy that is physically not rollable upon the event occurring.” *Id.* at 2.

As for Tomiyama’s use of “until,” Patent Owner replies that Tomiyama “teach[es] the toy continues to travel down the road and then at the time the toy passes over the magnet, the turret is pushed off” and that one of ordinary skill in the art “would not understand Tomiyama to teach the tank is no longer rollable.” PO Sur-reply 2 (citing PO Resp. 5–7; Ex. 2001 ¶¶ 52–53). Patent Owner also asserts that Tomiyama does not support Petitioner’s argument that “continuing to run the toy after the turret is pushed off would not make the toy a self-destructing toy” and Tomiyama’s “toy is a self-destructing toy because the turret is pushed off.” *Id.* (citing Pet. Reply 4; Ex. 1005 ¶ 5). Patent Owner further asserts that Petitioner “does not point to any teaching in Tomiyama” indicating “the turret being pushed off prevents the toy from continuing to roll” and, for example, “any mechanical structure or electronics in the Tomiyama toy that would prevent the toy from continuing to roll.” *Id.* at 2–3.

Regarding declarant testimony, Patent Owner argues that Dr. Kudrowitz “bases its arguments on the intended play of the toy,” the intended play “does not change the structure actually taught in Tomiyama,” and Petitioner’s position “does not address the actual claim language that the toy **is not rollable**.” PO Sur-reply 3 (citing Ex. 1020 ¶¶ 21–22). Patent Owner contends that Dr. Janét opines that (1) children can play with Tomiyama’s toy in a variety of ways which can include the toy rolling after the turret is ejected and (2) the toy is still a self-destructing toy after the turret is ejected. *Id.* (citing Ex. 1021, 68:15–22, 69:20–70:5, 72:18–22).

(d) Tomiyama Does Not Teach Expressly “a Second Position in which . . . the Toy is not Rollable Along the Playing Surface”

In our Decision instituting review, based on the record as then developed, we were not persuaded that Tomiyama alone teaches a toy that is not rollable in the asserted second position. Dec. to Inst. 21–22 (citing Ex. 1005 ¶ 4). Having the benefit of both parties’ arguments and evidence now in the record, we reassess whether Tomiyama teaches or suggests a toy that “is not rollable” in a “second position” where the first moveable element has moved away from a main body.

Petitioner points to, at least, push-out body 2 of toy 1 and Tomiyama’s statement that “the running toy 1 continues to travel down the road until the running toy 1 is passing over the magnet 29.” Pet. 30–33 (citing Ex. 1002 ¶¶ 83–93; Ex. 1005 ¶¶ 1–4, Figs. 1, 2, 4). Petitioner cites paragraph 1 of Tomiyama, which describes a “self-destructing toy,” and paragraphs 2 and 3, which describe the components of a particular embodiment, running toy 1. *See* Ex. 1005 ¶¶ 1–3. Petitioner also cites paragraph 4 that includes the sentence that “running toy 1 continues to travel down the road until the running toy 1 is passing over magnet 29.” *Id.* ¶ 4. Tomiyama thereafter describes that “[a]t this time, the magnet 29 attracts the magnet 16” and starts a series of changes in component positions resulting in an “interesting effect resembl[ing] the effect of a tank hitting a landmine and being destroyed.” *Id.*; *see also* Ex. 2001 ¶ 52 (Dr. Janét opining that “Tomiyama is simply explaining the steps of the tank rolling over the simulated magnet and then the turret being pushed off”). The express components mentioned are activating body 15; engaging body 5; engaging tab 6; push-out body 2; spring 4; struck protrusion 22; self-destructing components 24, 27, 28; and

self-destructing base 23. Ex. 1005 ¶ 4. Tomiyama does not mention in paragraph 4 other components such as “motorized drive mechanism,” wheel 30, battery case 31, or electric wire 32, that are described in paragraph 3. *See id.* Moreover, paragraph 5 of Tomiyama describes that “the toy can be quickly reconstructed for another round of play” because “self-destructing components 24, 27, 28 including the self-destructing base 23 are easily assembled.” Tomiyama does not describe the user restoring any other component for “another round of play.” *See id.* ¶ 5.

By describing expressly some components, but not wheel 30, as being affected when toy 1 rolls over magnet 29, Tomiyama indicates that its running toy 1 is still rollable in Petitioner’s asserted second position. Ex. 1005 ¶ 4. Thus, one of ordinary skill in the art would understand that Tomiyama’s toy 1 is still rollable in Petitioner’s asserted second position. Ex. 2001 ¶ 53 (“In my opinion, a POSITA would not understand this section of Tomiyama, i.e., ¶ 04, to explain that the running toy stops rolling on its wheels after it passes over the ‘landmine’ magnet.”) ¶ 56 (“In my opinion, a POSITA would easily understand that the tank is still rollable even when the turret is pushed off, as the turret is a simple mechanical assembly of parts unaffected by the motorized rolling mechanism.”). Our determination would be the same even if we were to consider that the “toy” includes the turret and bottom, as argued in Petitioner’s Reply, because Tomiyama does not indicate that the bottom is not rollable in the asserted second position. *See* Pet. Reply 1–3.

(2) Reason for Modifying Tomiyama to be Not Rollable in the Second Position

In addition to providing arguments that one of ordinary skill in the art would have modified Tomiyama in view of Thompson and would have

modified Thompson in view of Tomiyama (Pet. 23–30), Petitioner argues that, to any extent that Tomiyama alone does not teach explicitly “a second position in which the toy is not rollable along the playing surface,” as recited by claim 1, it would have been obvious to modify Tomiyama’s tank so that it would no longer be capable of rolling after passing over the toy mine to “further the theme of the toy—that it has rolled over a landmine and been destroyed.” *Id.* at 33 (citing Ex. 1002 ¶¶ 83–90).

(a) Patent Owner’s Response

Patent Owner responds that Petitioner’s assertion that it would be obvious to modify Tomiyama to be not rollable “is *directly contrary* to Tomiyama’s teaching of making the toy (and specifically, the turret) easily assembled so that ‘the toy can be quickly reconstructed for another round of play.’” PO Resp. 8–9 (citing Pet. 33; Ex. 1002 ¶¶ 83–90; Ex. 1004 ¶ 5). According to Patent Owner, “Tomiyama expressly discourages (and therefore, teaches away from) Choirock’s proposal to push off one or more of the wheels or cause the wheels to lock up so that the toy is no longer ‘capable of moving’” and Petitioner’s proposed modification “would adversely affect the ability for the user, who is likely a child, to quickly and easily reconstruct the toy for another round of play.” *Id.* at 9 (citing Ex. 1002 ¶ 89; Ex. 2001 ¶¶ 57–58); *see also id.* at 11 (arguing that “Tomiyama expressly discourages any modification to make the tank not rollable after a single use of play”).

Patent Owner also argues that Petitioner does not explain how Tomiyama would be modified to push off or lock up a wheel and has not provided evidence of a reasonable expectation of success. PO Resp. 9. Patent Owner further argues that Petitioner’s declarant testimony does not discuss Tomiyama’s mechanical structure, does not explain what steps

would be needed to push off or lock up a wheel, and “does not address how the proposed modification would maintain Tomiyama’s stated desire to quickly and easily reassemble the toy for another round of play.” *Id.* at 10 (citing Ex. 1002 ¶ 89; Ex. 1005 ¶ 5).

(b) Petitioner’s Reply

Petitioner replies that the “proposed modification is a relatively simple modification and would not affect the user’s ability to quickly reassemble the toy.” Pet. Reply 6; *see also id.* at 5 (summarizing Patent Owner’s arguments) (citing PO Resp. 9–10). Petitioner contends that modifying Tomiyama to push off a wheel “is a simple change in light of Tomiyama’s teachings” and “would not add more complexity to reassembly because any young child who would be able to replace the turret part would also be able to replace a wheel without any difficulty.” *Id.* at 6 (citing Ex. 1020 ¶¶ 28–29). Petitioner also contends that modifying Tomiyama to lock up a wheel “does not require a significant redesign,” “can be done in various ways,” “is not a complex redesign,” can be made “without undue experimentation,” and “does not add more complexity to reassembly.” *Id.* (citing Ex. 1020 ¶ 30).

(c) Patent Owner’s Sur-Reply

Patent Owner replies that Petitioner’s cited opinions from Dr. Kudrowitz “are vague, have no foundation or basis, and do not identify any structure that would need to be changed in Tomiyama to prevent the toy from rolling.” PO Sur-reply 3–4 (citing Ex. 1020 ¶¶ 26–28; Ex. 1021, 73:25–75:13). Patent Owner also argues that the assertions “do not establish any *motivation* for why a [person of ordinary skill in the art] would desire to make these significant changes” and “significantly modifying the reference

to achieve the claimed invention entails improper hindsight.” *Id.* at 4 (citing Ex. 1020 ¶ 29).

(d) The Full Record Supports Petitioner’s Asserted Reason for Modifying Tomiyama

Petitioner asserts that one of ordinary skill in the art would have made the proposed modification to “further the theme of the toy—that it has rolled over a landmine and been destroyed.” Pet. 33 (citing Ex. 1002 ¶¶ 83–90); *see also* Ex. 1021 43:25–44:5 (Dr. Janét agreeing that a self-destructing toy is part of the theme). Dr. Kudrowitz opines that a person of ordinary skill in the art “would have found it obvious to modify Tomiyama to no longer be capable of moving after passing over the toy mine.” Ex. 1002 ¶ 89; *see also* Ex. 1020 ¶¶ 26–30 (providing similar testimony that the proposed modification would push off or lock up a wheel). Dr. Janét opines that pushing off or locking up a wheel is contrary to Tomiyama’s teaching that “the toy can be quickly reconstructed for another round of play.” Ex. 2001 ¶ 55 (citing Ex. 1005 ¶ 5), ¶ 58.

Patent Owner does not dispute that Petitioner’s proposed modification would have furthered the theme of the toy. *See generally* PO Resp.; PO Sur-reply. Regarding the dispute about quick reconstruction and asserted teaching away, Tomiyama states that “[b]ecause the self-destructing components 24, 27, 28 including the self-destructing base 23 are easily assembled, the toy can be quickly reconstructed for another round of play.” Ex. 1005 ¶ 5. This statement does not criticize, discredit, or otherwise discourage Petitioner’s proposed modification to make Tomiyama’s tank no longer capable of rolling after passing over toy mine 29. *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004). It also does not criticize, discredit, or

otherwise discourage Petitioner’s specific modification of pushing off or locking up a wheel. *See* Ex. 1005 ¶ 5.

Tomiyama does not indicate what number of components or complexity would make the toy no longer capable of being “quickly reconstructed for another round of play.” *See generally* Ex. 1005.

Tomiyama, however, does indicate that pushing off or locking up a wheel would add to the “interesting effect” of “a tank hitting a landmine and being destroyed.” Ex. 1002 ¶ 89; Ex. 1005 ¶ 4. One of ordinary skill in the art, thus, would have understood that pushing off or locking up a wheel is a benefit that may come at the expense of quick reconstruction, but would have added to Tomiyama’s “interesting effect” and furthered the theme of the toy, as argued by Petitioner. *See Winner Int’l Royalty Corp. v. Wang*, 202 F.3d 1340, 1349 n.8 (Fed. Cir. 2000) (“The fact that the motivating benefit comes at the expense of another benefit, however, should not nullify its use as a basis to modify the disclosure of one reference with the teachings of another.”).

Moreover, as discussed above, Tomiyama states that “running toy 1 continues to travel down the road until the running toy 1 is passing over magnet 29.” Ex. 1005 ¶ 4. Dr. Kudrowitz opines that one of ordinary skill in the art “would understand that this suggests that movement ceases once the tank hits the magnet.” Ex. 1002 ¶ 89. We find that, even if Tomiyama does not teach that toy 1 stops moving after passing over a toy mine, Tomiyama suggests Petitioner’s proposed modification of making toy 1 no longer be capable of rolling to result in the expressly described “interesting effect . . . of a tank hitting a landmine and being destroyed.” Ex. 1005 ¶ 4.

(e) Reasonable Expectation of Success

Patent Owner argues that Petitioner fails to provide the required evidence that one of ordinary skill in the art would have had a reasonable expectation of success in making the proposed modification. PO Resp. 9

Dr. Kudrowitz opines that the proposed modification “would have . . . been easily accomplished by, for example, having the push-out body also push off one or more wheels, by causing the wheels to lock up, or the like.” Ex. 1002 ¶ 89. Dr. Janét testifies that one of ordinary skill in the art “would readily understand that it would take significant redesign to push off or lock up a wheel in such a way as to not cause permanent damage and/or overheating” and “modifying Tomiyama so that a wheel is pushed off or locked up would prevent quick and easy reassembly and, at the least, require significant redesign.” Ex. 2001 ¶ 58.

Dr. Janét, however, does not opine that modifying Tomiyama to push off or lock up a wheel would have been beyond ordinary skill in the art. *See* Ex. 2001 ¶ 58; *see also* Ex. 1021, 75:16–20 (Dr. Janét testifying that seizing the motor is one way to lock up a wheel), 76:20–77:1 (testifying that seizing the motor is a known way to lock up a wheel). Patent Owner also does not argue that the proposed modification would have been beyond ordinary skill in the art. *See generally* PO Resp.; PO Sur-reply.

Moreover, Tomiyama itself provides evidence that it is within ordinary skill in the art to include at least one self-destructing base with one or more self-destructing components that can be reassembled quickly enough for another round of play, such as the expressly described base 23 and components 24, 27, 28. Ex. 1005 ¶¶ 4, 5. Tomiyama also teaches that the running toy can be “any other type of vehicle.” *Id.* ¶ 6; *see also* Ex. 1021, 80:8–22 (Dr. Janét indicating that Tomiyama is not limited to

tank-shaped toys). Tomiyama, thus, does not necessarily limit the self-destructing base and components to only the turret shown and described. These teachings taken together indicate that one of ordinary skill in the art would have understood that another embodiment of Tomiyama could have a wheel as the self-destructing base or component and still be quickly reassembled for another round of play. *See* Ex. 1005 ¶¶ 4–6. Tomiyama, thus, indicates pushing off a wheel to make the toy unrollable after passing over magnet 29 would have been within ordinary skill in the art. *See id.*

Additionally, the motorized drive mechanism, battery case 31, and electric wire 32 of Tomiyama indicate that it is within ordinary skill in the art to electrically motorize the toy. *See* Ex. 1005 ¶ 3, Figs. 1–3. Tomiyama also indicates it is within ordinary skill to convert magnetic attraction into mechanical movement, such as magnet 29 rotating engaging body 5, and to add a mechanical component turned by the drive mechanism, such as cam plate 20. *See id.* ¶¶ 3, 4, Figs. 1–3. Based on the teachings of electrically moving and stopping a toy and a magnet moving components inside the toy, Tomiyama indicates that locking up a wheel to make the toy unrollable after passing over magnet 29 would have been within ordinary skill in the art. *See id.*

For the reasons above, based on the full record, Petitioner persuades us that one of ordinary skill in the art would have had a reasonable expectation of success in making Petitioner’s proposed modification. Ex. 1002 ¶ 89; Ex. 1005 ¶¶ 3–6, Figs. 1–3.

c) “*said at least one first moveable element being permanently biased toward said second position, and . . .*”

Petitioner argues that Tomiyama teaches the above-quoted recitation. Pet. 35–36 (citing Ex. 1002 ¶¶ 94–96; Ex. 1005 ¶¶ 2–4, Figs. 2, 4). In

particular, Petitioner argues that Tomiyama's push-out body teaches a first moveable element permanently biased toward a second position. *Id.* at 35 (citing Ex. 1002 ¶¶ 94–96).

We find that the relied-upon portion of Tomiyama teaches that “the utility model is embodied by attaching a push-out body 2 inside a tank-like running toy 1 via a spring 4 so as to be able to push out.” Ex. 1005 ¶ 2. We also find that Figures 2 and 4 of Tomiyama show spring 4 biases push-out body 2 toward the turret of running toy 1. We further credit Dr. Kudrowitz's testimony regarding how push-out body 2 teaches the limitation because Tomiyama supports it. Ex. 1002 ¶¶ 94–95 (citing Ex. 1005 ¶ 2, Figs. 2, 4).

Patent Owner does not present any argument that Tomiyama fails to teach or suggest the permanent biasing of push-out body 2 toward a second position. *See generally* PO Resp.; PO Sur-reply. Because Tomiyama teaches push-out body 2 being permanently biased toward the turret to eject it, Petitioner persuades us that Tomiyama teaches “said at least one first moveable element being permanently biased toward said second position.”

d) “being provided with catch means co-operable with moveable releasable latch means in said main body element to maintain at least one said first moveable element in said first position until said latch means is released, . . . ”

Petitioner argues that Tomiyama teaches the above-quoted recitation. Pet. 37–39 (citing Ex. 1002 ¶¶ 97–100, Ex. 1005 ¶¶ 2–4, Figs. 2, 4).

Petitioner specifically argues that an edge of push-out body 2 engages with engaging tab 6 of engaging body 5 to keep push-out body 2 in a first position until released. *Id.* at 37–38.

We find that the relied-upon portions of Tomiyama teach “push-out body 2 is engaged with an engaging tab 6 on an engaging body 5” and, when magnet 29 attracts magnet 16, “engaging body 5 is rotated, the engaging

tab 6 is withdrawn from the push-out body 2, and the push-out body 2 is strongly pushed out by the spring 4.” Ex. 1005 ¶¶ 2, 4. Figure 2 of Tomiyama shows engaging tab 6 holding push-out body 2 against spring 4 and Figure 4 shows push-out body 2 released from engaging tab 6. We further credit Dr. Kudrowitz’s testimony how push-out body 2 teaches the limitation because Tomiyama supports it. Ex. 1002 ¶¶ 97–99 (citing Ex. 1005 ¶¶ 2, 4, Figs. 2, 4). Dr. Janét also provides similar testimony regarding the sequence of events leading to ejecting self-destructing components 24, 27, 28. *See* Ex. 2001 ¶¶ 32–47.

Patent Owner does not present any argument that Tomiyama fails to teach or suggest the catch means and latch means. *See generally* PO Resp.; PO Sur-reply. Because Tomiyama teaches that push-out body 2 has an edge that engages with engaging tab 6 to keep push-out body 2 in a first position against spring 4 and because push-out body 2 and engaging tab 6 are equivalent structures that perform the functions of catch means and latch means, Petitioner persuades us that Tomiyama teaches “being provided with catch means co-operable with moveable releasable latch means in said main body element to maintain at least one said first moveable element in said first position until said latch means is released.”

e) “*wherein said releasable latch means is provided with a magnet, whereby said releasable latch means is moveable out of engagement with said catch by attraction to said playing surface, . . .*”

Petitioner argues that Tomiyama teaches the above-quoted recitation. Pet. 40–42 (citing Ex. 1002 ¶¶ 101–107, Ex. 1005 ¶¶ 2–4). In particular, Petitioner argues that magnet 16 moves activating body 15 that, in turn, pushes rotating plate 8 to release engaging tab 6 from push-out body 2. *Id.* at 40 (citing Ex. 1002 ¶¶ 101–107; Ex. 1005 ¶¶ 2–4).

As discussed above, we find that the relied-upon portions of Tomiyama teach magnet 29 attracting magnet 16 causes changes in, at least, activating body 15 and rotating plate 8 that result in engaging tab 6 releasing push-out body 2 so that spring 4 can bias push-out body 2 toward self-destructing base 23 and components 24, 27, 28. Ex. 1005 ¶¶ 2–4. We also credit Dr. Kudrowitz’s testimony because Tomiyama supports it. Ex. 1002 ¶¶ 101–103 (citing Ex. 1005 ¶¶ 2–4). Moreover, Dr. Janét provides similar testimony regarding the sequence of events leading to ejecting self-destructing components 24, 27, 28. *See* Ex. 2001 ¶¶ 32–47.

Patent Owner does not present any argument that Tomiyama fails to teach or suggest this limitation. *See generally* PO Resp.; PO Sur-reply. Because Tomiyama teaches that engaging tab 6 is linked to the movement of magnet 16 and the movement of magnet 16 causes engaging tab 6 to release push-out body 2, Petitioner persuades us that Tomiyama teaches “wherein said releasable latch means is provided with a magnet, whereby said releasable latch means is moveable out of engagement with said catch by attraction to said playing surface.”

*(1) Reason for Modifying Tomiyama to Have a Magnet
Directly on the Latch Means*

Petitioner argues that “[t]o the extent that the claim requires the magnet to be directly on the ‘latch means,’ placing the magnet directly on the ‘latch means’ of Tomiyama would have been an obvious modification.” Pet. 41 (citing Ex. 1002 ¶¶ 101–107). Petitioner also argues that the proposed modification “would simplify the structure, require fewer moving parts, and allow for smaller construction.” *Id.* (citing Ex. 1002 ¶¶ 101–107). According to Petitioner, “for a magnetically-operated latch, it is most logical, and common, to position the magnet on the latch so that the magnet

may directly move the latch disengage it.” *Id.* (citing Ex. 1002 ¶¶ 101–107). Petitioner further indicates that the modification is within ordinary skill and not a technological hurdle. *Id.* (citing Ex. 1002 ¶¶ 101–107).

Petitioner additionally argues that “having a magnet directly on a magnetically-operated latch was well-known in the art,” as shown by, at least, Aprile. Pet. 41 (citing Ex. 1002 ¶¶ 101–107; Ex. 1008, code (57), 3:32–4:32, Figs. 2, 3). Petitioner further presents a proposed combination of Tomiyama and Aprile. *Id.* at 42 (citing Ex. 1002 ¶¶ 101–107; Ex. 1005 ¶¶ 2–4).

We credit Dr. Kudrowitz’s testimony that one of ordinary skill in the art would have modified Tomiyama to have a magnet directly on the latch to “simplify the structure, require fewer moving parts, and allow for smaller construction” because record evidence supports it. Ex. 1002 ¶ 104; Ex. 1008, code (57), 3:32–4:32, Figs. 2, 3. We also credit Dr. Kudrowitz’s testimony that one of ordinary skill in the art would have had a reasonable expectation of success in modifying Tomiyama in the manner asserted by Petitioner. *Id.*

Patent Owner does not present any argument disputing Petitioner’s proposed modification to place a magnet directly on the asserted latch. *See generally* PO Resp.; PO Sur-reply. To the extent that a magnet is required to be directly on the latch, based on the full record before us, Petitioner persuades us that one of ordinary skill in the art would have modified Tomiyama so that “said releasable latch means is provided with a magnet” with a reasonable expectation of success.

f) “whereby a rolling of the toy along the playing surface ceases when said latch means is moved out of engagement with said catch.”

Petitioner argues that Tomiyama teaches the above-quoted recitation. Pet. 42–43 (citing Ex. 1002 ¶¶ 83–90, 108–110; Ex. 1005 ¶¶ 4–5).

Petitioner cites to Tomiyama’s statement that “when a magnet 29 resembling a land mine is placed on a road traveled over by the running toy 1 shown in FIG. 2, the running toy 1 continues to travel down the road until the running toy is passing over the magnet 29.” *Id.* (citing Ex. 1005 ¶ 4)

For the reasons discussed above in Section II.D.2.(b).(1)., Petitioner does not persuade us that Tomiyama teaches that running toy 1 ceases rolling after passing over magnet 29. Petitioner, however, persuades us that one of ordinary skill in the art would have been motivated to modify Tomiyama’s toy to cease rolling to further the theme of the toy and that Tomiyama suggests Petitioner’s proposed modification. Ex. 1002 ¶ 89; Ex. 1005 ¶ 4.

Patent Owner does not provide arguments specifically for this limitation but does dispute that Tomiyama’s toy is or can be modified to be not rollable after passing over magnet 29. *See* PO Resp. 3–11; PO Sur-reply 1–4. For the same reasons above in Section II.D.2.(b).(2)., based on the full record before us, Petitioner persuades us that Tomiyama teaches or would have rendered obvious the recitation “whereby a rolling of the toy along the playing surface ceases when said latch means is moved out of engagement with said catch.”

3. *Analysis of Claim 2*

Claim 2 depends from claim 1 and recites “wherein said main body element, together with said at least one first moveable element, are a first

shape when said at least one first moveable element is in said first position, and a second shape when said at least one first moveable element is in said second position.” Ex. 1001, 15:41–45. Petitioner argues that Tomiyama teaches the limitations of claim 2 because Tomiyama’s toy has a tank shape in a first position and a tank without a turret in a second position. Pet. 43 (citing Ex. 1002 ¶¶ 111–113; Ex. 1005 ¶¶ 2–4, Figs. 2, 4).

As discussed above, we find that the relied-upon portions of Tomiyama teach a tank-like running toy 1 that can pass over magnet 29 to cause self-destructing base 23 and components 24, 27, 28 to be ejected and resemble a tank hitting a landmine. Ex. 1005, 2–4, Figs. 2–4. We also credit Dr. Kudrowitz’s testimony regarding claim 2 because Tomiyama supports it. Ex. 1002 ¶¶ 111–112 (citing Ex. 1005 ¶¶ 2–4, Figs. 2–4).

Patent Owner does not present any arguments specifically for the challenged dependent claims. *See generally* PO Resp.; PO Sur-reply; *see also* Tr. 96:15–18 (Patent Owner’s counsel confirming that no arguments specifically for dependent claims 2–5 were presented). Because we find that Tomiyama teaches a toy that has a tank shape and can be made to resemble a destroyed tank, Petitioner persuades us that Tomiyama teaches “wherein said main body element, together with said at least one first moveable element, are a first shape when said at least one first moveable element is in said first position, and a second shape when said at least one first moveable element is in said second position,” as recited by claim 2.

For the reasons discussed above, Petitioner persuades us that Tomiyama teaches or suggests each limitation of claim 1, from which claim 2 depends. Based on the full record before us and our findings from Tomiyama regarding the limitations of claim 2, Petitioner persuades us by a

preponderance of the evidence that Tomiyama teaches or suggests each limitation of dependent claim 2.

4. *Analysis of Claim 3*

Claim 3 depends from claim 2 and recites “wherein said first shape is selected from the group consisting of spheres, cubes, tetrahedrons, pyramids, triangular prisms, egg shapes, parallelepipeds, cylinders, discus shapes, toruses, teardrops, lozenges, animal shapes, planet shapes, robot shapes, vehicle shapes, building shapes, tree shapes, sports equipment related shapes, weapons shapes, character-head shapes, and the like.” Ex. 1001, 15:46–52. Petitioner argues that “Tomiyama has the shape of a vehicle.” Pet. 43 (quoting Ex. 1005 ¶ 6) (citing Ex. 1002 ¶¶ 114).

We find that the relied-upon portion of Tomiyama teaches that “[t]he running toy . . . can be a tank as shown in the drawings, or any other type of vehicle.” Ex. 1005 ¶ 6. We credit Dr. Kudrowitz’s testimony regarding claim 3 because Tomiyama supports it. Ex. 1002 ¶¶ 114 (quoting from Ex. 1005 ¶ 6).

Patent Owner does not present any arguments regarding Petitioner’s challenge of claim 3 based on Tomiyama. *See generally* PO Resp.; PO Sur-reply; *see also* Tr. 96:15–18 (Patent Owner’s counsel confirming that no arguments specifically for dependent claims 2–5 were presented). Because we find that Tomiyama teaches a toy that can be any vehicle shape, Petitioner persuades us that Tomiyama teaches “wherein said first shape is selected from the group consisting of . . . vehicle shapes,” as recited by claim 3.

For the reasons discussed above, Petitioner persuades us that Tomiyama teaches or suggests each limitation of claims 1 and 2, from which claim 3 depends. Based on the full record before us and our findings from

Tomiyama regarding the limitations of claim 3, Petitioner persuades us by a preponderance of the evidence that Tomiyama teaches or suggests each limitation of dependent claim 3.

5. Analysis of Claim 4

Claim 4 depends from claim 3 and recites “wherein said releasable latch means is biased to a position in engagement with said catch.”

Ex. 1001, 15:53–55. Petitioner argues that Tomiyama teaches the limitations of claim 4. Pet. 44–45 (citing Ex. 1002 ¶¶ 115–118; Ex. 1005 ¶¶ 3–4, Fig. 4).

In particular, Petitioner contends that “[s]pring 14 biases the rotating plate 8 such that the latch, which is linked to the rotating plate, and the end of push-out body 2, which is the catch, are engaged,” “Figure 4 . . . illustrates that the latch is biased towards engagement with the catch by spring 14,” and “even though the catch has been released, the latch is positioned to be in engagement with the catch by spring 14.” *Id.* at 45 (citing Ex. 1005 ¶¶ 3–4, Fig. 4; Ex. 1002 ¶¶ 115–118).

We find that the relied-upon portions of Tomiyama teach that “14 is a coil spring” and “rotation around the cam plate 20 causes the rotating plate 8 to push in the engaging body 5, release the engaging tab 6 from the push-out body 2, and activate the push-out body 2.” Ex. 1005 ¶ 3. Figure 4 of Tomiyama shows that spring 14 biases an end of rotating plate 8 farthest from engaging body 5. Tomiyama goes on to describe how, when the running toy 1 passes over magnet 29, magnet 29 attracts magnet 16 and rotates activating body 15 which causes rotating plate 8 to move over cam plate 20, which causes engaging body 5 to withdraw engaging tab 6 from push-out body 2. *Id.* ¶ 4. Push-out body 2 is biased to strike struck protrusion 22 and eject self-destructing components 24, 27, 28. *Id.*

Tomiyama, however, does not describe expressly how these components return to positions so that toy 1 can be played with magnet 29 again. *See id.* ¶¶ 2–4. Tomiyama simply states that “[b]ecause the self-destructing components 24, 27, 28 including the self-destructing base 23 are easily assembled, the toy can be quickly reconstructed for another round of play.” *Id.* ¶ 5. Both parties’ declarants agree that Tomiyama teaches that its toy is quickly reconstructed for another round of play. *See* Ex. 1020 ¶ 21, 23; Ex. 2001 ¶ 55.

Based on the statement “[b]ecause the self-destructing components 24, 27, 28 including the self-destructing base 23 are easily assembled, the toy can be quickly reconstructed for another round of play,” Tomiyama suggests that restoring components 24, 27, 28 and base 23 on toy 1 makes toy 1 ready for passing over magnet 29 again. Ex. 1005 ¶ 5. In particular, Tomiyama’s disclosure suggests that restoring base 23 on toy 1 would press down on push-out body 2 against the biasing of spring 4 and cause push-out body 2 to rotate around support shaft 3. *See id.* ¶¶ 2–4, Figs. 2, 4. When toy 1 is away from magnet 29 and no longer attracting magnet 16, Tomiyama describes that spring 14 biases rotating plate 8 to rotate around mounting shaft 10 back to its original position away from cam plate 20. *See id.* ¶ 3, Figs. 3–5. The rotation of rotating plate 8 would then cause activating body 15 to rotate around mounting shaft 17 back to its original position. *See id.* ¶ 2, Figs. 4, 5. Tomiyama also indicates pressing down on push-out body 2 would cause the edge of push-out body 2 to contact rotating body 5 and rotate rotating body 5 back around support shaft 7 so that engaging tab 6 engages the edge of push-out body 2. *See id.* ¶¶ 2–4, Figs. 2–4; *see also* Ex. 1021 156:2–8 (Dr. Janét opining that Tomiyama indicates pressing down on push-out body 2 would result in the push-out body 2 being

held). The parties' declarants provide opinions on Tomiyama's disclosure that support our findings of how Tomiyama's toy 1 is made ready for another round of play. *See* Ex. 1002 ¶¶ 42–46 (Dr. Kudrowitz's opinion regarding Tomiyama's disclosure); Ex. 2001 ¶¶ 32–47 (Dr. Janét's opinion regarding Tomiyama's disclosure).

The full record does not support Dr. Kudrowitz's opinion that one of ordinary skill in the art would have understood that engaging tab 6 "is biased" towards engaging push-out body 2 because of spring 14. Ex. 1002 ¶ 115. Although Tomiyama expressly teaches that spring 14 biases rotating plate 8, Tomiyama does not expressly teach that Petitioner's asserted latch, engaging tab 6, is biased by spring 14 to engage push-out body 4. *See* Ex. 1005 ¶¶ 3–4. Tomiyama indicates that spring 14 biases rotating body 8 away from cam plate 20 and restores activating body 15 to its original position. *See id.* Tomiyama does not describe expressly that engaging tab 6, after it releases push-out body 2, is biased to return to its previous position to latch push-out body 2, even if spring 14 biases rotating plate 8 to rotate around mounting shaft 10 back to its original position away from cam plate 20. *See id.*

a) Reason for Modifying Tomiyama to Have a Torsion Spring on Support Shaft 7

Petitioner alternatively argues that one of ordinary skill in the art would have "incorporate[d] a torsion spring on support shaft 7 to more directly bias the latch into engagement with the keeper." Pet. 45 (citing Ex. 1002 ¶¶ 115–118). Petitioner contends that the proposed modification would be a simplification because it would "include a torsion spring like spring 4 of Tomiyama on support shaft 7 such that it directly biases engaging body 5 and/or engaging tab 6 toward push-out body 2." *Id.* (citing

Ex. 1002 ¶¶ 115–118). According to Petitioner, “[t]he use of such springs, and simplifying the magnetically-responsive mechanism in Tomiyama’s toy tank this way would have been well within the understanding and motivation of a [person of ordinary skill in the art].” *Id.* (citing Ex. 1002 ¶¶ 115–118).

We credit Dr. Kudrowitz’s opinion that one of ordinary skill in the art would have “recognize[ed] the value of keeping the latch engaged (rather than, for example, allowing it to shake loose as the tank moves on a surface),” one of ordinary skill in the art would have sought out “various biasing mechanisms, such as springs, to keep the ‘*latch means*’ engaged,” and that the proposed modification would have “simplif[ied] the latch mechanism while making it more robust and preventing it from, for example, inadvertently releasing during play.” Ex. 1002 ¶ 117. Regarding reasonable expectation of success, Dr. Kudrowitz testifies that one of ordinary skill in the art “would be completely adept at including a spring on an axel to bias one toy element towards another.” *Id.*

Record evidence shows that a latch biased by a spring was known. For example, as discussed below, Aprile teaches using a spring to bias a magnetically actuated latch into latching position. Ex. 1008, 4:6–12, Figs. 2, 3. The full record, thus, provides evidence that the use and implementation of spring-biased latches were within ordinary skill, and that one of ordinary skill in the art would have had a reasonable expectation of success in modifying Tomiyama’s engaging tab 6 to be biased back to its latching position by a spring. *See, e.g., id.*

Patent Owner does not present any arguments regarding Petitioner’s challenge of claim 4 based on Tomiyama alone or based on Shannon modified by Tomiyama. *See generally* PO Resp.; PO Sur-reply; *see also* Tr. 96:15–18 (Patent Owner’s counsel confirming that no arguments specifically

for dependent claims 2–5 were presented). Thus, based on the full record, Petitioner persuades us that one of ordinary skill in the art would have modified Tomiyama to include a torsion spring, like spring 4, on support shaft 7 so that engaging body 5 and engaging tab 6 are biased toward push-out body 2 to prevent inadvertent release during play. Pet. 45; Ex. 1002 ¶¶ 115–118; *see also* Ex. 1021, 162:8–24 (Dr. Janét agreeing that ejecting the turret before reaching the toy landmine would be undesirable). The full record also persuades us that one of ordinary skill in the art would have had a reasonable expectation of success in making Petitioner’s proposed modification. Ex. 1002 ¶¶ 115–118.

For the reasons discussed above, Petitioner persuades us that Tomiyama teaches or suggests the limitations of claims 1–3, from which claim 4 depends. Based on the full record before us and our determinations regarding Petitioner’s proposed modification of Tomiyama, Petitioner persuades us by a preponderance of the evidence that (1) Tomiyama teaches or suggests each limitation of dependent claim 4 and (2) one of ordinary skill in the art would have had a reason to modify Tomiyama with a reasonable expectation of success.

6. Objective Indicia of Nonobviousness

The parties do not rely on any evidence of objective indicia of nonobviousness for any of claims 1–4. *See generally* Pet.; PO Resp.; PO Sur-reply.

7. Weighing the Graham Factors

“Once all relevant facts are found, the ultimate legal determination [of obviousness] involves the weighing of the fact findings to conclude whether the claimed combination would have been obvious to an ordinary artisan.” *Arctic Cat*, 876 F.3d at 1361. Above, based on the full record before us, we

provide our factual findings regarding (1) the level of ordinary skill in the art, (2) the scope and content of the prior art, (3) any differences between the claimed subject matter and the prior art, and (4) objective evidence of nonobviousness.

In particular, we find that (1) Petitioner’s proposed level of ordinary skill in the art is consistent with the prior art of record, (2) Tomiyama teaches or suggests all the limitations of claims 1–4, (3) one of ordinary skill in the art would have modified Tomiyama with a reasonable expectation of success, and (4) no objective evidence of nonobviousness has been presented in relation to claims 1–4. Weighing these underlying factual determinations, a preponderance of the evidence persuades us that claims 1–4 of the ’508 patent are unpatentable over Tomiyama.

E. Obviousness Based on Shannon Modified by Tomiyama

In a “Summary of Argument,” Petitioner contends that the “combination of magnetic latches and transformable toys” was known. Pet. 5. Petitioner refers to Tomiyama and Aprile as examples. *Id.* Petitioner also argues that Shannon and Thompson teach toys that transform from a rollable shape to another shape. *Id.* Petitioner, thus, argues that the challenged claims represent the application of a known mechanism (magnetically-releasable latches) to a known type of toy (rollable toys that open during play) to achieve the expected result of a ball that magnetically opens when near a magnetic surface. *Id.* at 6.

Specifically for the challenge of claims 1–5 based on the combination of Tomiyama and Shannon, Petitioner presents two modifications. *See id.* at 55–71. In the first proposed modification, Petitioner contends that one of ordinary skill in the art would have modified Tomiyama in view of Shannon to be a rollable toy. *Id.* at 56–58. In another, separate modification,

Petitioner contends that one of ordinary skill in the art would have modified Shannon in view of Tomiyama to include a magnetically-released fastener in Shannon's toy so it can be rolled towards a magnet to open. *Id.* at 56–57, 58–61.

Patent Owner responds that (1) Tomiyama does not teach or suggest a toy comprising “at least one first moveable element . . . moveable . . . to a second position in which . . . the toy is not rollable along the playing surface” (PO Resp. 35), (2) it would not have been obvious to modify Tomiyama to be rollable in the recited second position (*id.* at 36), and (3) it would not have been obvious to modify Tomiyama to be a rollable ball (*id.* at 36–37). Patent Owner also responds that it would not have been obvious to modify Shannon to include the magnetically-releasable latch of Tomiyama. *Id.* at 37–40. Patent Owner further responds that Petitioner conflates the obviousness analysis with the analogous art analysis, merely argues that the modification “could,” not would, be done, and improperly uses hindsight in the obviousness analysis. *Id.* at 40–42.

For our analysis below, we only consider Petitioner's proposed modification of Shannon in view of Tomiyama to include a magnetically-released fastener in a toy to be rolled towards a magnet to open. Pet. 56–57, 58–61. We do not reach Petitioner's modification of Tomiyama by the teachings of Shannon to be a rollable toy. *Id.* at 56–58.

For the following reasons, based on the full record before us, we determine that Petitioner shows by a preponderance of the evidence that claims 1–5 are unpatentable over Shannon as modified by the teachings of Tomiyama.

1. Scope and Content of the Asserted Prior Art

We discuss Tomiyama above.

a) Shannon (Ex. 1007)

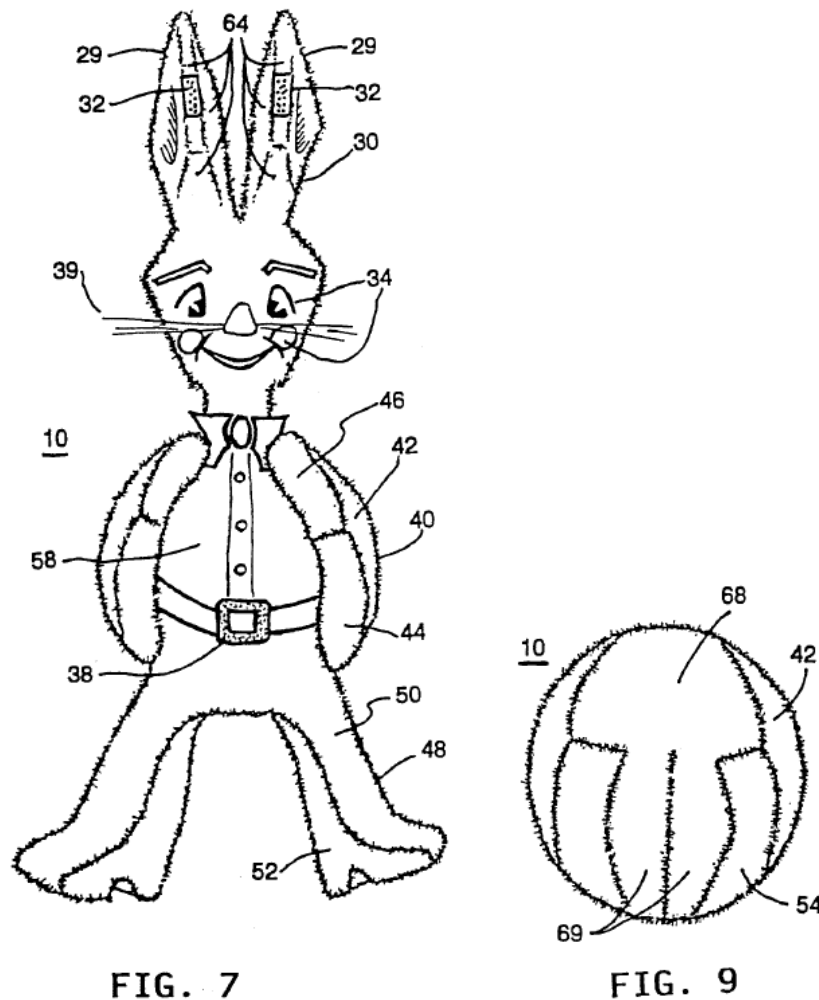
Shannon “relates to a transformable toy.” Ex. 1007, 1:6–7. Shannon states that “[t]he need for toys that intrigue through being transformable as between two or more configurations is evidenced by U.S. Pat. No. 4,674,990.” *Id.* at 1:8–10. According to Shannon, the identified patent describes that (1) “a number of parts are pivotably and movably interconnected to provide a vehicle formed by folding and a robotic, humanoid form by being unfolded,” (2) there is a “benefit to children’s interest obtained through having such configurable toys,” and (3) there are “advantages of having such toys which can be transformed with ease by a simple operation and manufactured with low cost.” *Id.* at 1:12–20.

Shannon’s “improvement over the prior art” relates to “a three dimensional toy structure which is reversibly transformable between a playable closed configuration having an exterior surface essentially entirely curvilinear and an open condition comprised of a playable object defined by it[]s internal surfaces.” *Id.* at 2:11–16. The “foldable, transformable toy” can include “spring elements operable to drive the segments of the toy to spring open upon release of a fastener holding the segments in a closed position.” *Id.* at 2:4–7. “Spring action in the hinges may be employed to surprise the user and to enhance play as well as education through such novelty,” and “spring action with supplemental metal hinge elements” can provide “a quicker and more forceful hinge action.” *Id.* at 2:42–45, 5:26–28.

“Fasteners are provided to hold the toy in the closed configuration defining the inanimate image and upon release to allow the appendages to open relative to the body to define the open configuration and animate image.” *Id.* at code (57); *see also id.* at 2:61–66 (describing that “[f]asteners may be provided on the body, which allow the appendages thereon to be

folded together and locked into a position defining the inanimate configuration of the toy” and “are releasable to permit transformation from the closed inanimate configuration to the open animate configuration”).

Figures 7 and 9 of Shannon are reproduced below.



Figures 7 and 9 show first and last folding steps of a rabbit-like object to a ball. Ex. 1007, 3:9–15, 3:39–40, 3:44–46. Rabbit toy 10 includes appendages with hinges so that the appendages can be folded and urged to unfold when released from the folded configuration. *Id.* at 5:3–6, 5:10–24. In the folded configuration, the hinged appendages conceal interior

surfaces 44, 46, 50, 52, 58, 62, 64 and display only exterior surfaces 42, 54, 68, 69. *Id.* at 6:6–30, 6:52–55.

Fastener 32 and fastener 38 latch together and hold toy 10 closed in a ball-shaped configuration. Ex. 1007, 6:31–33. “Peeling the appendages apart and separating these fasteners can result in the instant transformation of the toy from the ball enclosed surface shape of FIG. 9 to the open shape shown in FIG. 6, the hinges serving to result in an unfolding and opening up of the appendages.” *Id.* at 6:37–42. Fasteners 32, 38 may be hook and loop fasteners or “may be other types of fasteners including magnets, metal or plastic intermating snaps or traditional fasteners such as hook and eye or button types.” *Id.* at 5:59–65.

Both parties’ declarants provide testimony that supports the above description of Shannon. *See* Ex. 1002 ¶¶ 53–55; Ex. 2001 ¶ 74.

2. *Analysis of Claim 1*

a) “*A toy comprising . . .*”

Petitioner argues that Shannon teaches a toy. Pet. 61 (citing Ex. 1002 ¶ 148; Ex. 1005 ¶¶ 1, 4; Ex. 1007, Abstract, Figs. 1, 1A).

To the extent the preamble is limiting, we find that the Abstract of Shannon describes that a

toy is transformable into two distinct open and closed conditions (O, C) through a body and appendages each of a fixed geometric shape mentioned to collectively present the image of an identifiable animate object in the open condition (O) and an image of an inanimate object in the form of a rounded structure in the closed condition (C) through hinges connecting the body and the appendages to permit controlled relative movement of the appendages both for transformation and play in either configuration.

Ex. 1007, code (57); *see also id.* at Figs. 1, 1A. We also credit Dr. Kudrowitz's testimony regarding the preamble because Shannon supports it. Ex. 1002 ¶ 148 (citing Ex. 1007, code (57), Figs. 1, 1A); *see also* Ex. 2001 ¶ 74 (stating that "Shannon discloses a transformable toy movable from an open configuration to a closed configuration 'through a body and appendages'").

Patent Owner does not present an argument that Shannon fails to teach or suggest the preamble of claim 1. *See generally* PO Resp.; PO Sur-reply. Based on the full record before us, because Shannon teaches a toy that is transformable, Petitioner persuades us that Shannon teaches the preamble of claim 1.

b) *"a main body element and at least one first moveable element associated with said main body element and moveable with respect thereto from a first position adjacent said main body element in which the toy is rollable along a playing surface containing a metal or magnetic material, to a second position in which at least a portion of said first moveable element has moved away from said main body element and the toy is not rollable along the playing surface, . . ."*

Petitioner argues that Shannon teaches the above-quoted recitation. Pet. 61–65 (citing Ex. 1002 ¶¶ 149–153; Ex. 1007, 2:12–16, Figs. 1, 6, 8).

We find that the relied-upon portion of Shannon teaches "a three dimensional toy structure which is reversibly transformable between a playable closed configuration having an exterior surface essentially entirely curvilinear and an open condition comprised of a playable object defined by it[]s internal surfaces." Ex. 1007, 2:12–16. We also find that Figures 1 and 6 show "an animate rabbit-like object" and Figure 8 shows "a second step of folding" that shows arms and legs of the rabbit-like object folded onto its body. *Id.* at 3:9–11, 3:38–39, 3:42–43.

We further credit Dr. Kudrowitz’s testimony because Shannon supports it. Ex. 1002 ¶¶ 149–153 (citing Ex. 1007, 2:12–16, Figs. 1, 1A, 6, 8). In particular, Figures 1 and 1A show a first or closed position in which the “rabbit-like object” of Shannon is a rollable ball, and a second or open position in which the object resembles a rabbit doll. *Id.* ¶ 150 (citing Ex. 1007, Figs. 1, 1A); *see also* Ex. 2001 ¶ 74 (stating that “Shannon discloses a transformable toy movable from an open configuration to a closed configuration ‘through a body and appendages’”). Figure 6 of Shannon shows that the “rabbit-like object” of Shannon has a main body, and Figure 8 shows a partial transformation. Ex. 1002 ¶¶ 151, 152 (citing Ex. 1007, Figs. 6, 8). Dr. Kudrowitz also opines that “[t]he doll is not rollable in its open configuration (that is, the ‘*second position*’)” because “the doll is no longer a sphere, and has multiple appendages which would impede any attempt to roll the doll.” *Id.* ¶ 153.

Patent Owner does not address whether Shannon fails to teach or suggest any limitations of claim 1 (*id.* at 36–42 (arguing that it would not be obvious to modify the references and that Petitioner’s obviousness theories have deficiencies)). Petitioner replies that it “stated that Shannon’s doll is not rollable in its open configuration.” Pet. Reply 17 (citing Pet. 57–61, 65). Patent Owner replies that “Tomiya does not disclose that it is not rollable in the second position, nor would it be obvious to modify Tomiya’s tank to be not rollable in the second position.” PO Sur-reply 13.

Based on the full record before us, because Shannon teaches a rabbit-like object that has a main body with appendages, such as head, ears, arms, and legs attached to the main body, and those appendages are movable away from the main body to transform the toy from a rollable ball to a rabbit-like

object or rabbit doll that is not rollable, Petitioner persuades us that Shannon teaches:

a main body element and at least one first moveable element associated with said main body element and moveable with respect thereto from a first position adjacent said main body element in which the toy is rollable along a playing surface containing a metal or magnetic material, to a second position in which at least a portion of said first moveable element has moved away from said main body element and the toy is not rollable along the playing surface.

Ex. 1002 ¶¶ 149–153 (emphasis omitted); Ex. 1007, 2:12–16, Figs. 1, 6, 8.

Below in our analysis of Petitioner’s proposed modification of Shannon, we address further the recitation “playing surface containing a metal or magnetic material.”

c) *“said at least one first moveable element being permanently biased toward said second position, and . . . ”*

Petitioner argues that Shannon teaches “at least one first moveable element being permanently biased toward said second position.” Pet. 65–66 (citing Ex. 1002 ¶¶ 154–155; Ex. 1007, 2:4–7, 2:42–45, 4:14–15, 5:24–28, 6:37–42, Fig. 25).

We find that the relied-upon portions of Shannon teach (1) “a foldable, transformable toy including spring elements operable to drive the segments of the toy to spring open upon release of a fastener holding the segments in a closed position,” (2) “[s]pring action in the hinges . . . employed to surprise the user and to enhance play as well as education through such novelty,” (3) “spring action with supplemental metal hinge elements, to obtain a quicker and more forceful hinge action,” and (4) “[p]eeling the appendages apart and separating these fasteners [to] result in the instant transformation of the toy from the ball enclosed surface shape

of FIG. 9 to the open shape shown in FIG. 6, the hinges serving to result in an unfolding and opening up of the appendages.” Ex. 1007, 2:4–7, 2:42–45, 5:26–28, 6:37–42. We also find that Figure 25 shows “a hinge with a biasing means.” *Id.* at 4:14–15. We further credit Dr. Kudrowitz’s testimony because Shannon supports it. Ex. 1002 ¶¶ 154–155 (citing Ex. 1007, 2:4–8, 2:42–45, 4:14–15, 5:25–28, 6:40–42, Fig. 25).

Patent Owner does not present an argument that Shannon fails to teach or suggest a moveable element being permanently biased toward a second position. *See generally* PO Resp.; PO Sur-reply. Based on the full record, because Shannon teaches appendages with spring action or spring action supplemented by hinges to spring open from a ball to an open shape upon releasing a fastener, Petitioner persuades us that Shannon teaches “said at least one first moveable element being permanently biased toward said second position,” as recited by claim 1.

d) “being provided with catch means co-operable with moveable releasable latch means in said main body element to maintain at least one said first moveable element in said first position until said latch means is released, . . . ”

Petitioner argues that Shannon teaches the above-quoted recitation. Pet. 66–67 (citing Ex. 1002 ¶¶ 156–157; Ex. 1007, 5:59–65, 12:1–3, 12:16–19).

As discussed above in Section II.C., for “catch means,” we determine that the corresponding structure for performing the function of “cooperat[ing] with the latch means to maintain the at least one first movable element in the first position until the latch means is released” is structure elements 5c, 7c. Pet. 20; Ex. 1001, 3:42–4:16, 8:6–17, Figs. 1, 5(a); Ex. 1002 ¶¶ 24–25. For “latch means,” we determine that the corresponding structure for performing the function of “cooperat[ing] with

the catch means to maintain the at least one first movable element in the first position until the latch means is released” is locking component 10. Pet. 19; Ex. 1001, 3:42–4:16, 8:6–17, Figs. 1, 5(a); Ex. 1002 ¶¶ 22–23.

We find that the relied-upon portion of Shannon teaches

fasteners 32 and 38 may be of the hook and loop variety sold under the trademark “VELCRO” which engage and latch together under simple direct pressure, or there may be other types of fasteners including magnets, metal or plastic intermating snaps or traditional fasteners such as hook and eye or button types

Ex. 1007, 5:59–65. *See also id.* at code (57) (stating that “[f]asteners are provided to hold the toy in the closed configuration defining the inanimate image and upon release to allow the appendages to open relative to the body to define the open configuration and animate image”). Shannon also claims a “fastener means” and “securement means.” *Id.* at 11:32–34, 12:1–3, 12:16–19. We further credit Dr. Kudrowitz’s testimony because Shannon supports it. Ex. 1002 ¶¶ 156–157 (citing Ex. 1007, 2:61–66, 5:59–65, 12:1–3, 12:16–19); *see also* Ex. 2001 ¶ 74 (citing Ex. 1007, 2:61–66, 5:59–65, 6:34–42, 7:26–32, 8:17–20).

Patent Owner does not present an argument that Shannon fails to teach or suggest the required catch means and releasable latch means. *See generally* PO Resp.; PO Sur-reply. Based on the full record before us, because Shannon teaches fasteners 32 on the ears of the rabbit-like object co-operable with fastener 38 on the body of the object in a closed position until released and because Shannon teaches alternatives for fasteners 32, 38 that are equivalent structures that perform the functions of catch means and latch means, Petitioner persuades us that Shannon teaches “being provided with catch means co-operable with moveable releasable latch means in said

main body element to maintain at least one said first moveable element in said first position until said latch means is released.” We address further the catch means and moveable releasable latch means below in our analysis of Petitioner’s proposed modification.

- e) *“wherein said releasable latch means is provided with a magnet, whereby said releasable latch means is moveable out of engagement with said catch by attraction to said playing surface, . . . ”*

Petitioner argues that “Shannon teaches that magnets may be used as fasteners” but not “a magnet on the latch means.” Pet. 67 (citing Ex. 1002 ¶¶ 158–159; Ex. 1007, 5:59–65). Petitioner also argues that Tomiyama teaches a “releasable latch means [that] is provided with a magnet, whereby said releasable latch means is moveable out of engagement with said catch by attraction to said playing surface.” *Id.* at 40–42 (citing Ex. 1002 ¶¶ 101–107; Ex. 1005 ¶¶ 2–4), 67 (citing Ex. 1002 ¶¶ 158–159).

As discussed above, we find that the relied-upon portion of Shannon teaches “other types of fasteners including magnets, metal or plastic intermating snaps or traditional fasteners such as hook and eye or button types.” Ex. 1007, 5:59–65. We also credit Dr. Kudrowitz’s testimony because Shannon supports it. Ex. 1002 ¶ 159 (citing Ex. 1007, 5:59–65).

Regarding Tomiyama, we find that the relied-upon portions of Tomiyama teach “a push-out body 2 [that is] inside a tank-like running toy 1,” “self-destructing base 23 having a struck protrusion 22 on the lower end [that] is loosely mounted on the running toy 1,” and “struck protrusion 22 [that] is positioned over the push-out body 2.” Ex. 1005 ¶ 2. Tomiyama also teaches that “other self-destructing components 24, 27, 28 are mounted on the self-destructing base 23 so as to easily self-destruct.” *Id.* Tomiyama further teaches how push-out body 2 operates to eject self-destructing

base 23 and self-destructing components 24, 27, 28 when running toy 1 passes over magnet 29 on a playing surface and attracts magnet 16 in running toy 1. *See id.* ¶¶ 3–4. We credit Dr. Kudrowitz’s testimony that magnet 29 attracting magnet 16 causes a latch to release from a catch via a mechanically linked moveable component because Tomiyama supports it. Ex. 1002 ¶¶ 101–103 (citing Ex. 1005 ¶¶ 2–4); *see also* Ex. 2001 ¶¶ 32–47 (Dr. Janét describing the operation of Tomiyama’s tank).

Patent Owner does not dispute Petitioner’s assertions regarding what Shannon and Tomiyama teach or suggest in relation to the above-quoted limitation. *See generally* PO Resp.; PO Sur-reply. Patent Owner, instead, argues that one of ordinary skill in the art would not have combined Shannon and Tomiyama for the reasons given by Petitioner, Petitioner’s obviousness arguments have deficiencies, and the ordinary skilled artisan would not have had a reasonable expectation of success in modifying Shannon in view of Tomiyama. *See* PO Resp. 35–42; PO Sur-reply 13–19.

Because Shannon teaches using other types of fasteners with a magnet and Tomiyama teaches a latch that moves out of engagement with a catch after magnet 16 is attracted to magnet 29 on the playing surface, Petitioner persuades us that Shannon and Tomiyama teach or suggest “wherein said releasable latch means is provided with a magnet, whereby said releasable latch means is moveable out of engagement with said catch by attraction to said playing surface.”

Also, because Tomiyama teaches magnet 29 on the playing surface, Petitioner persuades us that Tomiyama teaches a “playing surface containing a metal or magnetic material.” Ex. 1001, 15:26–27. Furthermore, Tomiyama teaches structures that are equivalent to the corresponding

structures for performing the functions of catch means and latch means.
Ex. 1005 ¶¶ 2–4.

(1) Reason to Modify Shannon with Tomiyama's Teachings

Petitioner argues that Shannon and Tomiyama are in the same field of endeavor. Pet. 56 (citing Ex. 1002 ¶¶ 139–147). Petitioner also argues that both references relate to “spring-loaded toys which open to provide amusing effect,” “entertain children through the element of a surprise transformation,” and “open up when the fastener holding it in one shape is released.” *Id.* at 57 (citing Ex. 1002 ¶¶ 139–147). Petitioner further argues that one of ordinary skill in the art “could have easily borrowed” concepts from either reference and applied those concepts to the other. *Id.* (citing Ex. 1002 ¶¶ 139–147).

According to Petitioner, “both Tomiyama and Shannon encourage the combination of the two references.” Pet. 56 (citing Ex. 1002 ¶¶ 139–147); *see also id.* at 61 (arguing that “the references themselves suggest the combination”) (citing Ex. 1002 ¶¶ 139–147). Petitioner argues that both Shannon and Tomiyama suggest modifications, such as Shannon describing a variety of other possible fasteners, including a magnetically-operated latch. *Id.* at 56–57 (citing Ex. 1002 ¶¶ 139–147). Petitioner also argues that “Shannon itself suggests the use of different fasteners and Tomiyama suggests the applicability of its fastener to differently shaped toys confirms that the references would have led the skilled artisan to the claimed invention.” *Id.* at 61 (citing Ex. 1002 ¶¶ 139–147).

Petitioner, in particular, argues that “starting with Shannon, a skilled artisan would appreciate that any releasable fastener could be used to maintain the toy in its ball shape” because Shannon states that “there may be other types of fasteners including magnets, metal or plastic intermating

snaps or traditional fasteners such as hook and eye or button types.”

Pet. 58–59 (citing Ex. 1002 ¶¶ 139–147; quoting Ex. 1007, 5:62–65).

Petitioner also argues that one of ordinary skill in the art “considering alternative fasteners for a spring loaded toy would be aware of Tomiyama and understand that a magnetically-released fastener is one such fastener that could be used, if the toy designer wanted the toy to open up upon being rolled over a magnet.” *Id.* at 59 (citing Ex. 1002 ¶¶ 139–147); *see also id.* at 57–58 (arguing that a person of ordinary skill in the art “would recognize that the core concept of Tomiyama—having a toy move over a magnet and then be opened up by virtue of a magnetically-opened latch—could be used in rollable toys, like the ball of the Shannon reference” and “would recognize that this rolling aspect would add additional excitement to the toy”).

Petitioner further argues that one of ordinary skill in the art “would readily have been motivated to combine Tomiyama and Shannon.” Pet. 56 (citing Ex. 1002 ¶¶ 139–147). Specifically, Petitioner argues that one of ordinary skill in the art would have been motivated to modify Shannon or Tomiyama “to better meet the need identified explicitly by each of the references—the need for interesting and easy-to-use transformable toys.” *Id.* at 60 (citing Ex. 1002 ¶¶ 139–147). Petitioner also argues that Tomiyama describes “beneficial play aspects of moving a toy towards a magnet to open it” and “causing an ‘interesting’ effect for children.” *Id.* at 59 (citing Ex. 1002 ¶¶ 139–147; Ex. 1005 ¶¶ 4, 6); *see also id.* at 57 (arguing that “Tomiyama addresses an apparent need for toys which are both easily usable and present this ‘interesting effect’” and that “Shannon discloses a toy intended to meet a need for toys which are both intriguing, easily used, and

easily transformable”) (citing Ex. 1002 ¶¶ 139–147; Ex. 1005 ¶¶ 4, 5; Ex. 1007, 1:8–20, 1:62–64).

Petitioner further contends that combining Shannon’s rollable toy with Tomiyama’s magnetically-operated release mechanism would result in “a single, interesting toy set without sacrificing ease of use.” Pet. 60–61 (citing Ex. 1002 ¶¶ 139–147). Petitioner, thus, contends that “[t]he skilled artisan would be fully able to, and motivated to, apply this concept (*i.e.*, a toy that moves over a magnet and opens up) to the rolling of a ball over a magnet to open it” and that “a magnetic opening would only add to the surprise of the transformation.” *Id.* at 59 (citing Ex. 1002 ¶¶ 139–147).

Also, according to Petitioner, the claimed releasable latch means provided with a magnet “is being used exactly in the manner of the prior art magnetically-releasable fasteners to achieve the expected result—when a magnetic force is operated upon the release mechanism, it releases.” Pet. 59 (citing Ex. 1002 ¶¶ 139–147). Petitioner, thus, asserts that the proposed modification is “an example of a simple substitution of one known element for another to achieve a predictable result” (*id.* at 60 (citing Ex. 1002 ¶¶ 139–147)) and “is an obvious example of using known toy mechanisms for their intended, expected purposes” (*id.* at 61 (citing Ex. 1002 ¶¶ 139–147)). Petitioner additionally argues that claim 1 “represents nothing more than the incorporation of a known, basic magnetically-operated release—being used exactly for its intended and understood purpose—to allow a rollable toy such as a ball to open up into a different shape upon coming into proximity to a magnet.” *Id.* at 60 (citing Ex. 1002 ¶¶ 139–147).

(a) Patent Owner’s Response

Patent Owner responds that Petitioner’s declarant “only provides conclusory statements as to how Shannon’s toy ball is to be modified to

include Tomiyama’s magnetic, spring-loaded latching mechanism” and “does not explain how Shannon’s toy is to be modified to include a latching mechanism that interacts with an external magnet to release.” PO Resp. 37–38 (citing Pet. 60; Ex. 1002 ¶ 145). Patent Owner, thus, argues that Petitioner does not provide any evidence or explanation “how Shannon is to be modified to include the latching mechanism of Tomiyama, other than generalized, conclusory statements that it would be obvious to substitute a magnetically-released fastener in Shannon by gluing on a magnet.” *Id.* at 38 (citing Pet. 60; Ex. 2001 ¶ 77).

Patent Owner also responds that it would not have been obvious to modify Shannon to include a magnetically-releasable latch of Tomiyama. PO Resp. 37 (citing Pet. 59–60, 66). According to Patent Owner, “[t]he required latching mechanism would require much more than a glued-on magnet” and “modif[ing] Shannon’s toy ball to include an externally-released, magnetic latching mechanism, including the latching mechanism described in Tomiyama” “would not be viable or feasible” because “the Shannon toy is formed of the thin sheet of polypropylene overmolded with rubber” and “[s]uch a construction does not easily, if at all, allow for including a spring-loaded locking component.” PO Resp. 38–39 (citing Ex. 2001 ¶¶ 77–78); *see also id.* at 40 (arguing that the proposed modification of Shannon would “require a substantial redesign”). Patent Owner further responds that Petitioner does not provide evidence or explanation “how or why the Tomiyama latching mechanism would be substituted for the simple magnet or VELCRO fasteners used in Shannon, other than Shannon teaches that other fasteners could be used.” *Id.* at 39 (citing Pet. 59–60; Ex. 1002 ¶¶ 127–128).

Patent Owner further responds that “[m]odifying Shannon’s fasteners to open via an externally, magnetically-released locking component would change [Shannon’s] principle of operation” because “[t]he user would no longer be able to peel the appendages apart to achieve the toy transformation.” PO Resp. 39 (citing Ex. 2001 ¶ 77). According to Patent Owner, the proposed modifications “would change [Shannon’s] principle of operation, turning it from a toy the user manipulates by peeling the appendages apart to achieve the transforming opening of the toy, to a toy the user must roll to open.” *Id.* at 39–40.

(b) Petitioner’s Reply

Petitioner replies that the Petition presents an argument that one of ordinary skill in the art would have been “motivated to apply a magnetically-released fastener to Shannon’s toy.” Pet. Reply 17 (citing Pet. 59). Petitioner also points to Dr. Kudrowitz’s deposition testimony regarding how one of ordinary skill in the art would have used Tomiyama’s engaging body 5 in Shannon’s toy. *Id.* at 18 (citing Ex. 2002, 51:7–17, 52:18–22, 54:3–8).

Regarding Shannon’s thin sheet of polypropylene, Petitioner replies that the “proposed modification requires only a single magnet-latch fastener, which can be replaced with Shannon’s fastener,” “Shannon already discloses that its fasteners can be magnets that necessarily require a certain amount of space inside of the thin sheet,” and “[b]y changing Shannon’s magnet fasteners to be activated by an external magnet does not require additional space inside of Shannon’s skeleton.” Pet. Reply 18–19 (citing PO Resp. 39; Ex. 1020 ¶¶ 50–54). Petitioner provides an example modification. *Id.* at 19–20 (citing Ex. 1020 ¶¶ 50, 52–54).

Regarding the asserted change in the principle of operation, Petitioner replies that Patent Owner “mischaracterizes Shannon” and “Shannon’s principle of operation is transformation of the toy, it is not about magnetic attraction or peeling the appendages apart.” Pet. Reply 20 (citing PO Resp. 38; Ex. 1007, code (54), 5:24–30, 6:39–40, 6:49, Ex. 1020 ¶ 56; Ex. 2001 ¶¶ 76–77). Petitioner also argues that “[b]ecause Choirock’s modified Shannon toy would be rolled to an external magnet to have a magnetic opening/transformation of the toy, it does not change the principle operation of Shannon.” *Id.* (citing Ex. 1020 ¶ 56).

Regarding Dr. Janét’s opinion that peeling apart Shannon’s appendages provides enjoyment, Petitioner argues that “Shannon explicitly teaches that the enjoyment comes from the transformation,” “it is undisputed that the only ‘peeling’ taking place is unlocking of fasteners in Shannon,” and, “[o]nce a user unlocks the fasteners, the appendages are automatically unfolded into an open configuration due to the elastic nature of the hinges.” Pet. Reply 20–21 (citing Ex. 1007, 5:28–32; Ex. 1020 ¶ 57; Ex. 1021, 177:4–7). Petitioner contends that “Dr. Janét fails to explain why manually unlocking fasteners itself provides enjoyment while using a magnet to unlock a latch does not, when both methods yield the same result (releasing the appendages).” *Id.* at 21. Petitioner also argues that its proposed modification “does not remove the alleged enjoyment even if manipulation is part of Shannon’s play” because the “folding step” to transform Shannon into its closed configuration “is still present,” “requires a user’s manipulation,” and “provides enjoyment.” *Id.* (citing Ex. 1021, 178:24–180:3).

In reply to Patent Owner’s argument about the alleged failure to explain how the proposed modification would be made with a reasonable

expectation of success and why it would not be difficult, Petitioner contends that “the claims at issue ***do not require*** miniaturization” and therefore, “the alleged design difficulty regarding the size of a toy is not relevant to [the] obviousness inquiry here.” Pet. Reply 24–25 (citing Pet. 8; PO Resp. 20, 29, 37). Petitioner also contends that, as asserted in the Petition, one of ordinary skill in the art “would have had reasonable expectation of success in combining the known ‘magnetically-releasable latch’ to the known ‘rollable transformation toy’ to arrive at the claimed invention.” *Id.* at 25 (citing Pet. 5).

(c) Patent Owner’s Sur-Reply

Patent Owner argues that Petitioner improperly changes the mapping of the claim limitations to the asserted references in reply to Patent Owner’s argument about the failure to explain the proposed modification. PO Sur-reply 13–14 (citing Pet. 58–59; PO Resp. 38; Ex. 2002, 53:22–54:8), 15. According to Patent Owner, Petitioner “proposes different versions of a spring biased rocker latch” that were not discussed until Petitioner’s Reply, “not found in the prior art,” and created “out of whole cloth, with no grounding in the prior art.” *Id.* at 14–15 (citing Pet. Reply 19). Patent Owner contends that Dr. Kudrowitz admits that “he asserts that each of the constituent components of the design—not the mechanism itself or the combination of these components—was known in the art,” which is also improper hindsight. *Id.* at 15.

Patent Owner also replies that Petitioner does not rebut the argument that the thin sheet construction of Shannon does not easily allow for modification. PO Sur-reply 15 (citing PO Resp. 39). Patent Owner argues that Petitioner “acknowledges that its proposed latch would need to be modified even further” to not interfere with the thin sheet design but does

not explain how the latch would be scaled or how scaling would impact the operation of the latch. *Id.* at 15–16 (citing Ex. 1020 ¶ 53).

Regarding the principle of operation, Patent Owner replies that Petitioner only addresses one principle of operation and ignores others that are also changed by the proposed modification. PO Sur-reply 16 (citing PO Resp. 39–40; Pet. Reply 20–21). Patent Owner argues that modifying Shannon’s toy to roll onto a magnet changes the peeling apart of the appendages and that Shannon is designed for very young children to transform the toy by “tactile manipulation of simple fasteners.” *Id.* Patent Owner contends that “adding functionality to create a complicated latch defeats this and changes the principle of operation.” *Id.* Patent Owner also contends that Petitioner is merely piecing together portions of the prior art but not considering the references as a whole. *Id.* at 16–17. Patent Owner further contends that, “[a]lthough the toy is transformed in the proposed modification, the play of peeling apart the appendages and allowing the very young child to manipulate the toy to cause the transformation is removed with the modification.” *Id.* at 17. Patent Owner asserts that “maintaining one principle of operation while eradicating others does not motivate the modification.” *Id.*

*(2) The Full Record Supports Petitioner’s Motivation for
Modifying Shannon*

Regarding Petitioner’s asserted motivation to combine Shannon and Tomiyama to meet a stated need for interesting toys, we find that Petitioner’s relied-upon portions of Shannon teach that “[t]he need for toys that intrigue through being transformable as between two or more configurations is evidenced by U.S. Pat. No. 4,674,990” wherein it describes that (1) “a number of parts are pivotably and movably interconnected to

provide a vehicle formed by folding and a robotic, humanoid form by being unfolded,” (2) “the benefit to children’s interest obtained through having such configurable toys,” and (3) “the advantages of having such toys which can be transformed with ease by a simple operation and manufactured with low cost.” Pet. 57; Ex. 1007, 1:8–20. Petitioner also points to Shannon’s object of “provid[ing] a reversible, three-dimensional toy that can be easily and readily transformed through a construction that is readily manufactured.” Pet. 57; Ex. 1007, 1:62–64.

We also find that a relied-upon portion of Tomiyama teaches that “self-destructing components 24, 27, 28, including self-destructing base 23, made to resemble the turret and gun of a tank self-destruct” is an “interesting effect [that] resembles the effect of a tank hitting a landmine and being destroyed.” Ex. 1005 ¶ 4. Another relied-upon portion of Tomiyama states that it provides “an interesting self-destructing toy.” *Id.* ¶ 6. We further credit Dr. Kudrowitz’s testimony that both Shannon and Tomiyama teach “toys which open to amuse” because these references support it. Ex. 1002 ¶ 141.

Patent Owner does not dispute that (1) Shannon describes a need for toys that obtain children’s interest through transformation and (2) Tomiyama teaches an “interesting effect” or “interesting self-destructing toy.” *See generally* PO Resp.; PO Sur-reply. Patent Owner, instead, argues that Petitioner does not explain how its proposed modification would have been made, the proposed modification would not have been feasible, and the proposed modification changes the principle of operation of Shannon. *See* PO Resp. 37–40; PO Sur-reply 13–17.

Turning to declarant testimony, Dr. Kudrowitz opines that one of ordinary skill in the art would have been motivated to modify Shannon with

the teachings of Tomiyama so that Shannon’s toy included a “magnetically-released fastener” so that the toy would “open up upon being rolled over a magnet” to “allow the toy to have an ‘interesting effect in response to rolling over a magnet.” Ex. 1002 ¶ 145 (citing Ex. 1002 ¶¶ 4, 6; Ex. 1007, 5:62–65). We find the testimony credible because the cited portions of the asserted references support it. Dr. Janét’s testimony does not address these portions of Shannon and Tomiyama. *See generally* Ex. 2001.

Based on our findings above, Petitioner persuades us that “[t]he skilled artisan would have been motivated to modify either Tomiyama or Shannon with the other to better meet the need identified explicitly by each of the references—the need for interesting and easy-to-use transformable toys.” Pet. 60. Petitioner, thus, persuades us that one of ordinary skill in the art would have been motivated to modify Shannon in the manner proposed by Petitioner to “allow the toy to have an ‘interesting effect in response to rolling over a magnet.” Ex. 1002 ¶¶ 139, 145.

(3) The Full Record Supports Petitioner’s Asserted Teaching or Suggestion for Modifying Shannon

Turning to whether the asserted references also teach or suggest Petitioner’s proposed modification of Shannon in addition to one of ordinary skill being motivated to make the modification, as discussed above, we find that Shannon expressly teaches that “there may be other types of fasteners including magnets, metal or plastic intermating snaps or traditional fasteners such as hook and eye or button types.” Ex. 1007, 5:59–65. We also find that a relied-upon portion of Tomiyama teaches a latching mechanism with a magnet that releases when near another magnet or magnetic material. Pet. 59 (citing Ex. 1002 ¶¶ 139–147); Ex. 1002 ¶ 145 (citing Ex. 1005 ¶¶ 4,

6); Ex. 1005 ¶ 4 (describing the operation of running toy 1 when it passes over magnet 29).

In particular, we find that Tomiyama teaches that “magnet 29 attracts the magnet 16” to cause activating body 15 and engaging body 5 to be rotated, engaging tab 6 is thereby withdrawn from push-out body 2, and spring 4 thereafter causes push-out body 2 to strike struck protrusion 22 to eject components 24, 27, 28. Ex. 1005 ¶ 4. *See also* Ex. 2001 ¶¶ 32–47 (Dr. Janét describing the operation of Tomiyama’s tank). Tomiyama provides evidence that one of ordinary skill in the art would have known of engaging tab 6 releasing push-out body 2 after toy 1 passes over magnet 29 to cause an “interesting effect.” Ex. 1005 ¶¶ 2–4. Tomiyama also teaches that “[t]he running toy of the present utility model can be a tank as shown . . . , or any other type of vehicle” and “[i]n each case, an interesting self-destructing toy is provided.” *Id.* ¶ 6. We also credit Dr. Kudrowitz’s testimony because the record supports it. Ex. 1002 ¶¶ 140, 141, 147; *see also* Ex. 2001 ¶¶ 32–47 (Dr. Janét describing the operation of Tomiyama’s tank).

Because Shannon expressly teaches a fastener including magnets and because one of ordinary skill in the art would have known of Tomiyama’s mechanism for providing an “interesting effect” that includes magnets and can be used in other toys, Petitioner persuades us that “Shannon itself suggests the use of different fasteners and Tomiyama suggests the applicability of its fastener to differently shaped toys confirms that the references would have led the skilled artisan to the claimed invention.” Pet. 61. Based on our findings above, Petitioner persuades us that “both Tomiyama and Shannon encourage the combination of the two references” and “the references themselves suggest the combination.” *Id.* at 56, 61.

(4) The Full Record Supports Petitioner's Other Asserted Rationales for Modifying Shannon

Turning next to Petitioner's argument that modifying Shannon with Tomiyama's magnetically released mechanism is "an example of a simple substitution of one known element for another to achieve a predictable result," as discussed above based on the full record, Shannon expressly teaches that "there may be other types of fasteners including magnets, metal or plastic intermating snaps or traditional fasteners." Pet. 56–57, 60; Ex. 1002 ¶¶ 140, 145–147; Ex. 1007, 5:59–65. Patent Owner does not dispute that Shannon contemplates the use of other types of fasteners that include a magnet. *See* PO Resp. 37 ("Fasteners, including VELCRO, magnets, and snaps, are provided to hold [Shannon's] toy in the closed configuration") (citing Ex. 1007, 2:61–66, 5:59–65). The full record also provides no reason against the other types of fasteners having at least a magnet or a magnet with additional mechanical components, such as a combination of magnets, snaps, and traditional fasteners.

We also find that a relied-upon portion of Tomiyama teaches a latching mechanism with a magnet that releases when near another magnet or magnetic material. Ex. 1002 ¶ 145; Ex. 1005 ¶¶ 4, 6; *see also* Ex. 2001 ¶¶ 32–47 (explaining the operation of Tomiyama's self-destructing tank). The parties' declarants agree that Tomiyama teaches a magnetically-responsive latch or locking mechanism. *See* Ex. 1002 ¶ 140 ("Tomiyama teaches that its tank having the magnetically-responsive latch can take on other shapes."), ¶ 145 ("A [person of ordinary skill in the art] would, when considering alternative fasteners, be motivated to combine Tomiyama, understanding that a magnetically-released fastener is one such fastener that could be used."); Ex. 2001 ¶ 75 ("In my opinion, it would not be viable or

feasible and a [person of ordinary skill in the art] would have no reason to modify Shannon’s toy to include the locking mechanism of Tomiyama.”). Thus, based on the full record, we find that Tomiyama teaches a magnetically-responsive latch.

Because Shannon teaches the use of an alternative fastener including a magnet and Tomiyama teaches a latching mechanism including a magnet that releases when near another magnet or magnetic material, Petitioner persuades us that its proposed modification of Shannon to use the latching mechanism of Tomiyama would have been a “simple substitution of one known element for another” to yield a predictable result. Pet. 60; Ex. 1002 ¶¶ 140, 145–147; Ex. 1005 ¶¶ 4, 6; Ex. 1007, 5:59–65; *see also KSR*, 550 U.S. at 416 (stating that “when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result”).

Regarding Patent Owner’s argument that the modification would not have been feasible and require substantial redesign because Shannon’s toy has a “thin sheet of polypropylene” (*see* PO Resp. 37–40; PO Sur-reply 14, 15–16, 17 n.1), we find that Shannon provides evidence that one of ordinary skill in the art would have known how to apply a fastener with a magnet to Shannon’s toy. Shannon expressly teaches the use of other types of fasteners that include magnets. Ex. 1007, 5:59–65. We also find that Shannon teaches fasteners 32, 38 on, respectively, ears 29 and body of rabbit toy 10, not directly on skeleton 12. *Id.* at 5:51–53, 5:58–59, Fig. 6. We, thus, find that Shannon would have taught one of ordinary in the art to place “other types of fasteners including magnets” on ears 29 and the body, not directly on skeleton 12, as argued by Patent Owner. *See id.* at 5:51–53,

5:58–64, Fig. 6. The full record before us provides no reason why placing a fastener with a magnet on ears 29 and the body would have been beyond ordinary skill in the art. Moreover, there appears to be sufficient room in the body to accommodate the larger portion of a fastener. *See, e.g.*, Ex. 1007, Figs. 5, 6, 8, 10.

Patent Owner’s argument that Petitioner fails to describe its modification beyond providing conclusory statements (PO Resp. 37–39; PO Sur-reply 16) does not address sufficiently whether Shannon and Tomiyama teach or suggest the limitations of the claim and does not address sufficiently whether one of ordinary skill in the art would have made the combination. Further, as indicated by Patent Owner’s arguments, Petitioner’s proposed modification included enough details so that Patent Owner could understand the modification and provide responsive arguments. *See* PO Resp. 37–42; PO Sur-reply 13–19.

Moreover, the references themselves indicate that one of ordinary skill in the art would have known how to make the proposed modification. Shannon teaches the use of other types of fasteners on ears 29 and the body to keep segments of rabbit toy 1 folded until released and allowed to spring open. Ex. 1007, 2:4–7, 5:51–53, 5:58–59, Fig. 6. Tomiyama teaches a latching mechanism inside toy 1 that holds push-out body 2 against spring 4 until released to provide an interesting effect. Ex. 1005 ¶¶ 4–6. Taken together, we find that these references provide evidence that replacing Shannon’s fastener with a magnetically-released latching mechanism in the manner asserted by Petitioner is within ordinary skill in the art.

Also, we find that Tomiyama provides evidence that one of ordinary skill in the art would have known of (1) engaging tab 6 operable to release another component and (2) magnet 29 able to attract magnet 16 to cause

mechanical movement of attached components. Ex. 1005 ¶ 4. We also find that Tomiyama provides evidence that one of ordinary skill in the art would have been able to apply engaging tab 6 and the interaction of magnets 16, 29 to other toys. *Id.* ¶ 6. Because Tomiyama teaches a latching mechanism that includes a magnet that releases when near another magnet or magnetic material and that can be used in other toys, Petitioner persuades us that the proposed modification of Shannon would have been “used exactly in the manner of the prior art magnetically-releasable fasteners to achieve the expected result—when a magnetic force is operated upon the release mechanism, it releases.” Pet. 59; Ex. 1002 ¶ 146; Ex. 1005 ¶¶ 4, 6; Ex. 1007, 5:59–65. In other words, Tomiyama’s technique of using engaging tab 6 and magnets 16, 29 to provide an “interesting effect” would also improve Shannon’s toy so that it has the same “interesting effect.” *KSR*, 550 U.S. at 417 (stating that “if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill;” “when a patent ‘simply arranges old elements with each performing the same function it had been known to perform’ and yields no more than one would expect from such an arrangement, the combination is obvious;” and “[i]f a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability”).

Further, based on our findings discussed above regarding Shannon’s other usable fasteners and Tomiyama’s mechanism for providing an “interesting effect,” Petitioner persuades us that the proposed modification “represents nothing more than the incorporation of a known, basic magnetically-operated release—being used exactly for its intended and

understood purpose—to allow a rollable toy such as a ball to open up into a different shape upon coming into proximity to a magnet.” Pet. 60; Ex. 1002 ¶ 147; Ex. 1005 ¶¶ 4, 6; Ex. 1007, 5:59–65; *see also KSR*, 550 U.S. at 417.

Because Tomiyama teaches a mechanism for providing an “interesting effect” in a toy, Petitioner additionally persuades us that its proposed modification of Shannon with Tomiyama’s mechanism is an “example of using known toy mechanisms for their intended, expected purposes.” Pet. 61; Ex. 1002 ¶ 146; Ex. 1005 ¶¶ 4, 6; Ex. 1007, 5:59–65; *see also KSR*, 550 U.S. at 417.

(5) Reasonable Expectation of Success

For the reasons above, we determine that one of ordinary skill in the art would have been motivated to modify Shannon’s toy with a magnetically released latching mechanism to provide an “interesting effect,” as proposed by Petitioner. Pet. 60; Ex. 1002 ¶¶ 139, 145. We also determine that the references themselves teach or suggest Petitioner’s proposed modification. Pet. 56, 61; Ex. 1002 ¶¶ 140, 141, 147. Further, Petitioner persuades us that the proposed modification of Shannon with the teachings of Tomiyama is a “simple substitution of one known element for another,” (Pet. 60; Ex. 1002 ¶¶ 140, 145–147), would “use[] exactly in the manner of the prior art magnetically-releasable fasteners to achieve the expected result,” (Pet. 59; Ex. 1002 ¶ 146), and “represents nothing more than the incorporation of a known, basic magnetically-operated release—being used exactly for its intended and understood purpose—to allow a rollable toy such as a ball to open up into a different shape upon coming into proximity to a magnet” (Pet. 60; Ex. 1002 ¶ 147).

Also, as discussed above, Shannon and Tomiyama provide evidence that one of ordinary skill in the art would have been able to apply a

magnetically released latching mechanism in Shannon's toy. *See, e.g.*, Ex. 1005 ¶¶ 4–6; Ex. 1007, 5:59–65. We also credit Dr. Kudrowitz's testimony that the proposed modification would have been within the capabilities of one of ordinary skill in the art because the full record supports it. *See* Ex. 1002 ¶ 26 (“A person of ordinary skill in the art of the '508 patent at the time of the alleged invention in 2006 would have a bachelor's degree in mechanical engineering or a related field and about three years of experience in toy design.”), ¶ 28 (“In 2006, a person of ordinary skill in the art, as defined above, would have been able to review and implement the teachings of the prior art like Tomiyama, Thompson, Saucier, Aprile, and Shannon.”), ¶ 140 (“In my opinion, a [person of ordinary skill in the art] would have readily viewed both toys as having elements that may be implemented in the other easily, simply, and obviously.”), ¶ 145 (“This is particularly the case because magnets are relatively cheap, are easily implemented (*e.g.*, affixed using glue) to a toy, are relatively sturdy even during rough play, and have predictable characteristics which make them easily used by a [person of ordinary skill in the art].”),

Although Patent Owner argues that one of ordinary skill in the art would have not have had a reasonable expectation of success in modifying Tomiyama in view of Shannon (PO Resp. 37), Patent Owner does not provide an argument regarding reasonable expectation of success specific to the challenge based on Shannon modified by the teachings of Tomiyama. *See generally* PO Resp.; PO Sur-reply; Ex. 2001. Based on the full record, Petitioner persuades us that one of ordinary skill in the art would have made the proposed modification with a reasonable expectation of success.

(6) Patent Owner's Other Arguments

(a) Principle of Operation

With support from declarant testimony, the parties dispute what Shannon's principle of operation is. *See* PO Resp. 39–40; Pet. Reply 20–21; PO Sur-reply 16–17. Dr. Janét opines that “[i]f Shannon were modified to release by magnetic attraction, the user would no longer be able to peel the appendages apart to achieve the toy transformation, changing the principle of operation of how Shannon is manipulated and played with by the user.” Ex. 2001 ¶ 77. Dr. Kudrowitz opines that “Shannon's principle of operation is transformation of the toy, it is not about magnetic attraction or peeling the appendages apart.” Ex. 1020 ¶ 56 (citing Ex. 1007, code (54), 5:24–30, 6:39–40, 6:49).

We find that the cited portions of Shannon describe a transformable toy, transformation of the toy, and “dramatic ‘jack-in-the-box’ opening.” Ex. 1007, code (54), 5:24–30, 6:39–40, 6:49. Because of these findings, we determine that Dr. Kudrowitz's testimony is more persuasive because it is based on evidence from Shannon than Dr. Janét's testimony. Ex. 1020 ¶ 56; Ex. 2001 ¶ 77.

Shannon better supports Dr. Kudrowitz's testimony because Shannon describes providing a dramatic opening. Ex. 1020 ¶ 56; Ex. 1007, code (54), 5:24–30, 6:39–40, 6:49; Ex. 2001 ¶ 77. Shannon also describes “[f]asteners are provided to hold the toy in the closed configuration.” *See* Ex. 1007, code (57). The embodiment of Shannon that Petitioner proposes to modify can have “spring action” that is “intended to enhance the transformation.” *Id.* at 5:24–32. Shannon's principle of operation, thus, does not only require a user to “be able to peel the appendages apart to achieve the toy transformation,” as Dr. Janét testifies. Ex. 2001 ¶ 77.

Also, Petitioner proposes modifying Shannon's fasteners 32, 38 with Tomiyama's teachings. Pet. 58–61. The proposed modification would still be a transformable toy with a “dramatic ‘jack-in-the-box’ opening” because it would still have appendages that spring open. Ex. 1007, code (54), 5:24–30, 6:39–40, 6:49. For the reasons above, the full record does not show that Petitioner's proposed modification would change the asserted principle of operation of Shannon.

Moreover, Shannon describes a “need for toys that intrigue through being transformable,” “the benefit to children's interest obtained through having such configurable toys,” and “the advantages of having such toys which can be transformed with ease by a simple operation.” Ex. 1007, 1:8–20. Shannon also describes objects related to an improved transformable toy that “can be easily and readily transformed,” is “transformable . . . by a simple folding of hinges,” and “spring[s] open upon release of a fastener holding the segments in a closed position.” *Id.* at 1:54–2:7.

The proposed modification would meet the “need for toys that intrigue through being transformable,” obtain “children's interest” through a configurable toy, and have the advantage of being “transformed with ease by a simple operation.” Ex. 1007, 1:8–20. Furthermore, the proposed modification would meet Shannon's object of an improved transformable toy that “can be easily and readily transformed” by the “simple operation” of rolling towards a magnet, is “transformable . . . by a simple folding of hinges,” and “spring[s] open upon release of a fastener holding the segments in a closed position.” *Id.* at 1:54–2:7. Because the proposed modification would meet the express needs and objects of Shannon, the full record indicates to us, for another reason, that the proposed modification does not change Shannon's principle of operation.

(b) Analogous Art

Patent Owner contends that Petitioner “conflates the obviousness analysis with an analogous art analysis” and “whether a reference is analogous art is not an indication of obviousness.” PO Resp. 40 (citing Pet. 56; Ex. 1002 ¶¶ 140–141). Patent Owner, thus, argues that “Tomiyaama and Shannon being in the same alleged field of endeavor as an indication of obviousness should be disregarded.” *Id.*

Petitioner replies that Patent Owner “does not dispute that the art being referenced in the Petition are analogous.” Pet. Reply 22 (citing PO Resp. 31–32, 40). Petitioner also replies that it “does not assert obviousness only based on the art being analogous” and “provided motivation to combine arguments separately.” *Id.* at 22 (citing Pet. 25–29, 56–61). Patent Owner replies that Petitioner improperly “based several of its obviousness theories on whether they were in the same alleged field of endeavor,” “provided no substantive response to Spin Master’s critique,” and “provides just three, conclusory sentences” that are “insufficient and should be rejected.” PO Sur-reply 17–18 (citing PO Resp. 40).

Patent Owner points to a paragraph that begins with Petitioner asserting that “both Tomiyama and Shannon encourage the combination of the two references” and includes “[b]oth references suggest the claimed modifications.” *See* Pet. 56–57. Petitioner, however, argues in between that “Tomiyaama and Shannon are both in the same field of endeavor” and quotes from *Unwired Planet, LLC v. Google Inc.*, 841 F.3d 995, 1000 (Fed. Cir. 2016) that “[p]rior art is analogous and can be applied in an obviousness combination if it . . . is from the same field of endeavor, regardless of the problem addressed.” *Id.* at 56.

Petitioner’s argument and quote make clear that Petitioner is merely asserting that Shannon and Tomiyama are analogous art and one of ordinary skill in the art would have considered them for combination. *See id.* We do not view this argument as a reason for modifying Shannon in view of Tomiyama, even if it is bracketed by reasons for combining these two references. Further, to the extent that the statement could be considered as an asserted reason for modifying Shannon, we do not analyze it as such. But, we do consider the argument in analyzing whether one of ordinary skill in the art would have considered that the particular asserted references are analogous art and support Petitioner’s proposed combination.

Also, we do not view Patent Owner’s argument to be disputing whether Shannon and Tomiyama are analogous art. To the extent analogous art is being disputed, we find that Shannon “relates to a transformable toy” (Ex. 1007, 1:6) and that Tomiyama relates a “self-destructing toy” (Ex. 1005 ¶¶ 1, 6). Thus, based on the full record, we find that Shannon and Tomiyama are in the same field of endeavor and therefore constitute analogous art. *See also* Ex. 1002 ¶¶ 140–141 (opining that both Shannon and Tomiyama similarly describe transformable toys).

(c) “*Could be*”

Patent Owner also contends that Petitioner repeatedly asserts that Shannon “could be modified” but “whether a reference could be modified should be disregarded.” PO Resp. 40 (citing Pet. 51, 61). Patent Owner also contends that stripping away all the assertions of what could be modified leaves little substantive argument in the alleged motivation to combine. *Id.* at 40–41.

Petitioner replies that it “properly alleges motivation to combine analysis, separate from the alleged ‘could be’ statements” and “the Board

may consider ‘could be’ statements in obviousness analysis.” Pet. Reply 22–23 (citing Pet. 25–29, 56–61; PO Resp. 20, 32, 37, 40; *PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1365 (Fed. Cir. 2018)). Patent Owner replies that Petitioner “is incorrect that ‘could be’ statements may be considered in a proper obviousness analysis,” the cited case law does not support Petitioner’s assertion, and the “proper standard is still whether a [person of ordinary skill in the art] would have been motivated to make the proposed modifications.” PO Sur-reply 18.

Relevant to the challenge based on Shannon and Tomiyama, Patent Owner points us to page 61 of the Petition. *See* PO Resp. 40. That particular page, however, does not contain any argument that could be interpreted as “could be modified.” *See* Pet. 61. In previous assertions regarding Shannon and Tomiyama, Petitioner argues that one of ordinary skill in the art “could have easily borrowed one of these simple concepts from Shannon or Tomiyama and applied it to the other” (*id.* at 57), Tomiyama’s toy “could be rolled to the magnet” (*id.* at 57–58), Tomiyama’s magnetically operated release “could beneficially be used with other shapes of movable toys” (*id.* at 58), “any releasable fastener could be used to maintain [Shannon’s] toy in its ball shape” (*id.*), and “a magnetically-released fastener is one such fastener that could be used” (*id.* at 59).

Based on our review of Petitioner’s arguments in the entirety, we determine that Patent Owner views these “could” statements in isolation and give little consideration to the subsequent arguments. For example, as discussed above, Petitioner argues that modifying Shannon in view of Tomiyama “is . . . an example of a simple substitution of one known element for another to achieve a predictable result.” Pet. 60. This argument by Petitioner is not a “could be modified” assertion. *See id.* The argument

applies the Supreme Court’s analysis that “when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result.” *KSR*, 550 U.S. at 416.

Petitioner also argues that the proposed modification “represents nothing more than the incorporation of a known, basic magnetically-operated release—being used exactly for its intended and understood purpose—to allow a rollable toy such as a ball to open up into a different shape upon coming into proximity to a magnet.” Pet. 60. Instead of being a “could be modified” argument, the argument echoes that “[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR*, 550 U.S. at 416. Petitioner further provides an asserted teaching, suggestion, and motivation for combining the asserted references. Pet. 60, 61.

For the reasons stated above, based on the full record, we determine that Petitioner provides more than “could be modified” assertions to support its obviousness arguments.

(d) Alleged Hindsight

Patent Owner further contends that Petitioner’s assertion that concepts from Tomiyama and Shannon could be applied to the other “amount to conjecture without any objective evidence” and “simply us[es] advantages or features of the claimed invention as reasons for arriving at the claimed invention.” PO Resp. 41 (citing Pet. 57). Patent Owner contends that there is no explanation of how modifications would be made and the asserted modifications have nothing to do with the toy being modified. *Id.* at 41–42 (citing Ex. 1002 ¶¶ 143, 144, 146). According to Patent Owner, Dr.

Kudrowitz “is using the claimed invention of the ’508 Patent as a roadmap for the obviousness analysis.” *Id.* at 42.

Petitioner replies that it “is using the disclosed advantages or features in the prior art, not the claimed invention, to arrive at the claimed invention,” and doing so “is not improper hindsight.” Pet. Reply 23 (citing Pet. 29–30; PO Resp. 33–35, 41–42). Petitioner also replies that the “advantage or expected beneficial result that would be produced by combining prior art does provide a rationale for making that combination” as held by the Federal Circuit. *Id.* at 23–24 (citing PO Resp. 34). Petitioner, thus, argues that it “is not using the ’508 Patent as a roadmap, rather, it is properly applying the standard recognized by the Federal Circuit.” *Id.* at 24.

Patent Owner replies that Petitioner improperly uses hindsight and “begins its obviousness analysis with the claim language itself, and then simply ignores the components of the prior art that would otherwise render its proposed combination unworkable.” PO Sur-reply 18–19 (citing PO Resp. 40–41). Patent Owner argues that “[b]y working backwards from the claim language to compose its obviousness theory, Choirock has engaged in clear hindsight, and its arguments must be rejected.” *Id.* at 19.

Based on the full record before us, we determine that Petitioner is not improperly using hindsight to arrive at the challenged claims of the ’508 patent. As discussed above, Petitioner persuades us that Shannon and Tomiyama teach or suggest all the limitations of claim 1. Pet. 55–71. Patent Owner does not provide any argument that these particular references fail to teach or suggest the limitations identified by Petitioner. *See generally* PO Resp.; PO Sur-reply. In particular, Patent Owner does not dispute that Shannon teaches or suggests alternatives to the “hook and loop” fastener of the described embodiment. *See generally* PO Resp.; PO Sur-reply; *see also*

Ex. 2001 ¶ 74 (Dr. Janét opining that “Shannon discloses a few different types of fasteners 32, 38, including VELCRO, magnets, metal, plastic intermating snaps, or hook and eye or button types”). Because of Petitioner’s relied-upon teachings and suggestions from Shannon and Tomiyama, the full record indicates to us that the references themselves, not improper use of hindsight, would lead one of ordinary skill in the art to arrive at the challenged claims. Petitioner provides persuasive reasons that one of ordinary skill in the art with knowledge of the disclosures of Shannon and Tomiyama would have had reasons to combine their teachings to render obvious the challenged claims. *See* Pet. 55–61.

For the reasons above, based on the full record, we determine that Petitioner is not improperly using hindsight in its challenge to claims 1–5 as unpatentable over Shannon modified by Tomiyama.

f) *“whereby a rolling of the toy along the playing surface ceases when said latch means is moved out of engagement with said catch.”*

Petitioner argues that “Shannon’s toy ball will not roll once it has been opened and the various portions separated.” Pet. 67 (citing Ex. 1002 ¶¶ 160–161).

As discussed above, we find that relied-upon portions of Shannon teach a toy that reversibly transforms from a ball to a rabbit-like object when a fastener is released. Ex. 1002 ¶¶ 149–153; Ex. 1007, 2:4–7, 2:12–16, 2:42–45, 3:9–11, 3:38–39, 3:42–43, 5:26–28, 6:37–42, Figs. 1, 6. We credit Dr. Kudrowitz’s testimony that “[t]he toy ball will not roll once it has been opened” because “when opened, the ball of Shannon is shaped like a doll that would not readily roll” because Shannon supports it. Ex. 1002 ¶ 161.

Patent Owner does not present an argument that Shannon fails to teach or suggest a toy ball that does not roll once it has opened. *See generally* PO Resp.; PO Sur-reply. Because Shannon teaches a toy that transforms from a ball that can roll to a rabbit-like object when a fastener is released, Petitioner persuades us that Shannon teaches “whereby a rolling of the toy along the playing surface ceases when said latch means is moved out of engagement with said catch.”

3. *Analysis of Claim 2*

Claim 2 depends from claim 1 and recites “wherein said main body element, together with said at least one first moveable element, are a first shape when said at least one first moveable element is in said first position, and a second shape when said at least one first moveable element is in said second position.” Ex. 1001, 15:41–45.

Petitioner argues that “Shannon has one shape when the moveable element is in the first position (a ball), and a second shape when the second element is in the second position, separated from the toy (an animated character figure, such as a rabbit).” Pet. 68 (citing Ex. 1002 ¶ 162; Ex. 1007, Figs. 1, 1A). Petitioner also refers to its challenge of claim 2 based on Tomiyama alone or Tomiyama combined with Thompson. *Id.* (citing Ex. 1002 ¶ 162).

We find that Figure 1 of Shannon shows a “rabbit-like object” and Figure 1A shows the rabbit-like object transformed into a ball. *See also* Ex. 1007, 3:9–15 (stating that “FIG. 1 is a front elevational view of one toy of the present invention in an open configuration, depicting an animate rabbit-like object” and “FIG. 1A is an elevational view of the toy shown in FIG. 1, in a closed configuration, depicting a curvilinear surfaced object that is inanimate, the transformation representation being that of a rabbit to a

ball”). We also credit Dr. Kudrowitz’s testimony regarding claim 2 because record evidence supports it. Ex. 1002 ¶ 162 (citing Ex. 1007, Figs. 1, 1A); *see also* Ex. 2001 ¶ 74 (stating that “Shannon discloses a transformable toy movable from an open configuration to a closed configuration ‘through a body and appendages’”).

Patent Owner does not present any arguments for the challenge of claim 2 based on Petitioner’s proposed modification of Shannon in view of Tomiyama. *See generally* PO Resp.; PO Sur-reply; *see also* Tr. 96:15–18 (Patent Owner’s counsel confirming that no arguments specifically for dependent claims 2–5 were presented). Because Shannon teaches the main body and appendages form a ball when in a closed position and a rabbit-like object when the appendages are away from the main body, Petitioner persuades us that Shannon teaches or suggests “wherein said main body element, together with said at least one first moveable element, are a first shape when said at least one first moveable element is in said first position, and a second shape when said at least one first moveable element is in said second position.”

As discussed above, we find that Shannon and Tomiyama teach or suggest the limitations of claim 1, from which claim 2 depends. Accordingly, based on the full record before us, we find that Shannon and Tomiyama teach or suggest all the limitations of claim 2. We also determine above that one of ordinary skill in the art would have modified Shannon with the teachings of Tomiyama with a reasonable expectation of success.

4. Analysis of Claim 3

Claim 3 depends from claim 2 and recites “wherein said first shape is selected from the group consisting of spheres, cubes, tetrahedrons, pyramids, triangular prisms, egg shapes, parallelepipeds, cylinders, discus shapes,

toruses, teardrops, lozenges, animal shapes, planet shapes, robot shapes, vehicle shapes, building shapes, tree shapes, sports equipment related shapes, weapons shapes, character-head shapes, and the like.” Ex. 1001, 15:46–52.

Petitioner argues that “Shannon has the shape of a sphere.” Pet. 68 (citing Ex. 1002 ¶ 163; Ex. 1007, Fig. 1A). Petitioner also refers to its challenge of claim 3 based on Tomiyama alone or Tomiyama combined with Thompson. *Id.* (citing Ex. 1002 ¶ 163).

We find that Figure 1A of Shannon shows rabbit-like object of Figure 1 transformed into a ball. *See also* Ex. 1007, 3:12–15 (stating that “FIG. 1A is an elevational view of the toy shown in FIG. 1, in a closed configuration, depicting a curvilinear surfaced object that is inanimate, the transformation representation being that of a rabbit to a ball”). We also credit Dr. Kudrowitz’s testimony regarding claim 3 because record evidence supports it. Ex. 1002 ¶ 163 (citing Ex. 1007, Fig. 1A).

Patent Owner does not present any arguments for the challenge of claim 3 based on Petitioner’s proposed modification of Shannon in view of Tomiyama. *See generally* PO Resp.; PO Sur-reply; *see also* Tr. 96:15–18 (Patent Owner’s counsel confirming that no arguments specifically for dependent claims 2–5 were presented). Because Shannon teaches that the rabbit-like object forms a ball in the closed position, Petitioner persuades us that Shannon teaches or suggests “wherein said first shape is selected from the group consisting of spheres . . . and the like.”

As discussed above, we find that Shannon and Tomiyama teach or suggest the limitations of claims 1 and 2, from which claim 3 depends. Accordingly, based on the full record before us, we find that Shannon and Tomiyama teach all the limitations of claim 3. We also determine above

that one of ordinary skill in the art would have modified Shannon with the teachings of Tomiyama with a reasonable expectation of success.

5. *Analysis of Claim 4*

Claim 4 depends from claim 3 and recites “wherein said releasable latch means is biased to a position in engagement with said catch.”

Ex. 1001, 15:53–55.

Petitioner refers to its challenge of claim 4 based on Tomiyama alone and Tomiyama combined with Thompson. Pet. 68 (referring to Pet. 44–46) (citing Ex. 1002 ¶ 164). In the challenge based on Tomiyama alone or Tomiyama combined with Thompson, Petitioner argues that Tomiyama teaches the limitations of claim 4. *Id.* at 44–45 (citing Ex. 1002 ¶¶ 115–118; Ex. 1005 ¶¶ 3, 4, Fig. 4).

For the reasons discussed above, Petitioner does not persuade us that Tomiyama expressly describes the limitation of claim 4. Petitioner, however, persuades us one of ordinary skill in the art would have modified Tomiyama to include a torsion spring like spring 4 on support shaft 7 so that engaging body 5 and engaging tab 6 are biased toward push-out body 2 to prevent inadvertent release during play. Pet. 45; Ex. 1002 ¶¶ 115–118. Petitioner also persuades us that one of ordinary skill in the art would have had a reasonable expectation of success in making the proposed modification. Ex. 1002 ¶¶ 115–118.

For the reasons discussed above, Petitioner persuades us that Shannon and Tomiyama teach or suggest the limitations of claims 1–3, from which claim 4 depends. Based on the full record before us and our determinations regarding Petitioner’s proposed modification of Tomiyama, Petitioner persuades us by a preponderance of the evidence that (1) Shannon and Tomiyama teach or suggest each limitation of dependent claim 4 and (2) one

of ordinary skill in the art would have had a reason to modify Shannon and Tomiyama with a reasonable expectation of success.

6. *Analysis of Claim 5*

Claim 5 depends from claim 1 and recites:

further comprising at least one second moveable element, hinged to said at least one first moveable element and moveable from a closed position adjacent said at least one first moveable element, to an open position away from said at least one first moveable element, said at least one second moveable element being biased toward said open position, and foldable to said closed position, said at least one second moveable element being restrained against movement toward said open position while said catch is in engagement with said releasable latch means.

Ex. 1001, 15:56–65.

Petitioner argues that Shannon teaches the “at least one second moveable element” of claim 5 because “the rabbit figure of Shannon has ears (the ‘*second moveable element*’) hingedly attached to the head (the ‘*first moveable element*’).” Pet. 68–69 (citing Ex. 1002 ¶¶ 165–166; Ex. 1007, 6:1–51, Figs. 10, 10A). Petitioner also argues that “ear surface 64 is adjacent to the forehead of the rabbit when the figure is in the closed position in the shape of a ball (Fig. 10A), but away from the forehead of the rabbit when in the open position.” *Id.* at 69 (citing Ex. 1002 ¶¶ 165–166; Ex. 1007, Figs. 5, 10).

Petitioner further argues that Shannon teaches the required biasing of the asserted second moveable element because “the head, ears, arms, and legs of the rabbit toy (‘*movable element[s]*’) rotate away from the body about the hinges with ‘the hinges serving to result in an unfolding and opening up of the appendages,’” which can be “metal hinge elements.” *Id.* at 69–70 (citing Ex. 1002 ¶¶ 167–170; Ex. 1007, 2:4–8, 2:16–21, 2:42–45,

5:24–28, 5:33–47, 6:1–55, Figs. 5, 10, 10A). Petitioner further argues that Shannon teaches the required restraining of the second moveable element because Shannon discloses the use of one or multiple fasteners to hold the appendages in the closed position after being folded closed. *Id.* at 71 (citing Ex. 1002 ¶ 171; Ex. 1007, 2:61–64, 2:66–3:2). Petitioner additionally provides arguments that Tomiyama teaches biasing of a second moveable element and would have rendered obvious the biasing of claim 5. *Id.* at 70 (citing Ex. 1002 ¶¶ 167–170; Ex. 1005 ¶ 2).

We find that a relied-upon portion of Shannon teaches that “head 60 includes interior facial surfaces 62,” “formed ears 29 typically include interior forwardly facing surfaces 64 which disappear when those appendages are folded into the position in FIG. 9 from the position of FIG. 8,” “the alignment of the fasteners 32 on the forward interior surfaces of the ears, and fastener 38 on the belt buckle . . . latch together and hold toy 10 in the closed configuration of FIG. 9,” “[r]elease from the inanimate ball-shaped image of FIG. 9 is initiated by pulling outwardly on the tips of the two ears which disengages fasteners 32 and 38,” and “[p]eeling the appendages apart and separating these fasteners can result in the instant transformation of the toy from the ball enclosed surface shape of FIG. 9 to the open shape shown in FIG. 6, the hinges serving to result in an unfolding and opening up of the appendages.” Ex. 1007, 6:26–42; *see also id.* at 5:3–5 (stating “the skeleton 12 includes ear hinges 18 connecting the ears 13, head hinge 20 connecting the head 11”), 5:15–19 (stating “[s]uch hinges as utilized in the present invention define plastic springs tending to restore displacement of the joined elements such as, for example, the head 11 and the ears 13 of skeleton 12 through hinges 18”), Fig. 4 (showing the location

of head hinge 20 between head and body and hinges 18 between head and ears).

We also find that Figures 10 and 10A show side views of the rabbit-like object in the open and closed positions, respectively. *See id.* at 3:47–48 (stating “FIGS. 10 and 10A represent the side views of the object shown in FIG. 6 and in FIG. 9, respectively”). We further credit Dr. Kudrowitz’s testimony regarding claim 5 because record evidence supports it. Ex. 1002 ¶¶ 165–168 (citing Ex. 1007, 2:4–8, 2:16–21, 2:42–45, 5:25–28, 5:33–47, 6:1–55, Figs. 4, 5–10A). Patent Owner does not present any arguments for the challenge of claim 5 based on Petitioner’s proposed modification of Shannon in view of Tomiyama. *See generally* PO Resp.; PO Sur-reply; *see also* Tr. 96:15–18 (Patent Owner’s counsel confirming that no arguments specifically for dependent claims 2–5 were presented).

Based on the full record before us, because Shannon teaches ears 29 hinged to head 60 and moveable from adjacent to head 60 in a closed position to away from it in an open position, Petitioner persuades us that Shannon teaches or suggests “at least one second moveable element, hinged to said at least one first moveable element and moveable from a closed position adjacent said at least one first moveable element, to an open position away from said at least one first moveable element.” Also, because Shannon teaches that hinges unfold and open appendages like ears 29 and that separating fasteners 32, 38 results in the opening, Petitioner persuades us that Shannon teaches or suggests “said at least one second moveable element being biased toward said open position, and foldable to said closed position, said at least one second moveable element being restrained against movement toward said open position while said catch is in engagement with said releasable latch means.”

As discussed above, we find that Shannon and Tomiyama teach or suggest the limitations of claim 1, from which claim 5 depends.

Accordingly, based on the full record before us, we find that Shannon and Tomiyama teach or suggest all the limitations of claim 5. We also determine above that one of ordinary skill in the art would have modified Shannon with the teachings of Tomiyama with a reasonable expectation of success.

7. Objective Indicia of Nonobviousness

The parties do not rely on any objective indicia of nonobviousness for any of claims 1–5. *See generally* Pet.; PO Resp.; PO Sur-reply.

8. Weighing the Graham Factors

Based on the full record before us, we find that (1) Petitioner’s proposed level of ordinary skill in the art is consistent with the prior art of record, (2) Shannon and Tomiyama teach or suggest all the limitations of claims 1–5, (3) one of ordinary skill in the art would have modified Shannon in view of Tomiyama with a reasonable expectation of success, and (4) no objective evidence of nonobviousness has been presented in relation to claims 1–5. Weighing these underlying factual determinations, a preponderance of the evidence persuades us that claims 1–5 of the ’508 patent are unpatentable over Shannon and Tomiyama. *Arctic Cat*, 876 F.3d at 1361.

F. Obviousness Based on Shannon, Tomiyama, and Aprile

Petitioner presents a challenge based on Tomiyama, Shannon, and Aprile. Pet. 71–74. We analyze below specifically the challenge based on Shannon modified by the teachings of Tomiyama and Aprile.

1. Scope and Content of the Asserted Prior Art

We discuss above Tomiyama and Shannon above.

a) *Aprile* (Ex. 1008)

Aprile provides an “extremely simple and inexpensive locking device.” Ex. 1008, 1:26–27. Figure 3 of Aprile is reproduced below.

FIG. 3

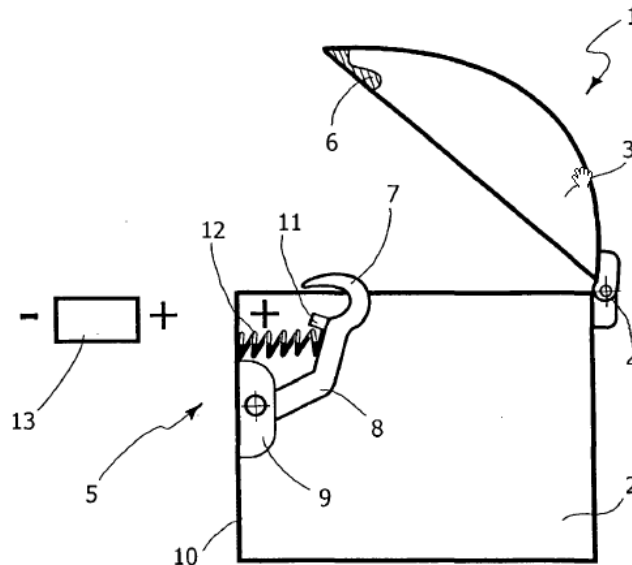


Figure 3 shows a cross-sectional view of a container in an opening condition. *Id.* at 3:21–23. Container 1 includes bottom part 2, lid 3 hinged to bottom part 2, and locking device 5. *Id.* at 3:28–31.

Locking device 5 comprises jamming member 7, shown as a hook, in bottom part 2 and contrast member 6 in lid 3. Ex. 1008, 3:32–4:3. “[A]rm 8 of the jamming member 7 has a permanent magnet 11” and “helical extension spring 12 tends to keep the arm 8” so that “jamming member 7 is engaged with the contrast member 6, thus keeping the lid 3 in the position of locking and preventing its opening.” *Id.* at 4:6–12, Figs. 2, 3. Lid 3 is opened by an external manual-actuation tool which includes second permanent magnet 13 that magnetically repels permanent magnet 11 to cause arm 8 to rotate against spring 12 to disengage the hook from jamming member 7. *Id.* at 4:16–28, Figs. 2, 3.

According to Aprile, its locking device is usable for “applications that involve an extremely low cost, limited overall dimensions, and ease of installation.” Ex. 1008, 5:3–6. Aprile also provides a “doll with a mobile part associated to the aforesaid locking device to obtain original and amusing effects.” *Id.* at 1:30–33; *see also id.* at 5:21–6:19 (describing doll 15), Fig. 4.

2. *Analysis of Claim 1*

Petitioner argues that, to any extent Tomiyama and Shannon do not teach or suggest a “releasable latch means” that “is provided with a magnet,” Aprile teaches such a latch and that it would have been obvious to combine Shannon, Tomiyama, and Aprile. Pet. 71–72 (citing Ex. 1002 ¶¶ 172–179). In particular, Petitioner argues that Aprile teaches latch 8 with magnet 11, latch 8 disengages from catch 6 when another magnet either repels or attracts magnet 11, and the “magnetically-actuated latch” is “useful for . . . effectuating movement in toys.” *Id.* at 72–73 (citing Ex. 1002 ¶¶ 172–179; Ex. 1008, 1:25–33, 3:28–4:32, 5:3–6, 5:11–6:4, 7:5–15, Figs. 2, 3).

For the reasons discussed above, we find that Shannon teaches the preamble of claim 1. Ex. 1002 ¶ 148; Ex. 1007, code (57). We also find that Shannon teaches the recited main body element and at least first moveable element of claim 1. Ex. 1002 ¶¶ 149–155; Ex. 1007, 2:4–7, 2:12–16, 2:42–45, 3:9–11, 3:38–39, 3:42–43, 5:26–28, 6:37–42, Figs. 1, 6. We further find that Shannon teaches the use of other fasteners. Ex. 1002 ¶¶ 156–157; Ex. 1007, 2: 5:59–65.

As discussed above, for “catch means,” we determine that the corresponding structure for performing the function of “cooperat[ing] with the latch means to maintain the at least one first movable element in the first position until the latch means is released” is structure elements 5c, 7c.

Pet. 20; Ex. 1001, 3:42–4:16, 8:6–17, Figs. 1, 5(a); Ex. 1002 ¶¶ 24–25. For “latch means,” we determine that the corresponding structure for performing the function of “cooperat[ing] with the catch means to maintain the at least one first movable element in the first position until the latch means is released” is locking component 10. Pet. 19; Ex. 1001, 3:42–4:16, 8:6–17, Figs. 1, 5(a); Ex. 1002 ¶¶ 22–23.

Turning to Aprile, we find that the relied-upon portions of Aprile teach (1) container 1 with locking device 5 and (2) locking device 5 comprises contrast member 6 on lid 3 and jamming member 7 on bottom part 2 of container 1. Ex. 1008, 3:28–4:1, Figs. 2, 3. Jamming member 7 includes a hook carried by arm 8 rotatable with respect to bottom part 2. *Id.* at 4:2–5, Figs. 2, 3.

“[A]rm 8 of the jamming member 7 has a permanent magnet 11” and “helical extension spring 12 tends to keep the arm 8” so that “jamming member 7 is engaged with the contrast member 6, thus keeping the lid 3 in the position of locking and preventing its opening.” *Id.* at 4:6–12, Figs. 2, 3. Lid 3 is opened by an external manual-actuation tool which includes second permanent magnet 13 that magnetically repels permanent magnet 11 to cause arm 8 to rotate against spring 12 to disengage the hook from jamming member 7. *Id.* at 4:16–28, Figs. 2, 3. We further credit Dr. Kudrowitz’s testimony regarding what Aprile teaches because Aprile supports it. Ex. 1002 ¶¶ 172–175 (citing Ex. 1008, 1:25–33, 2:19–3:9; 3:27–6:19, 7:5–15, Figs. 2, 3).

Patent Owner responds that it “does not submit that the proposed combination fails to teach [a ‘releasable latch means’ that ‘is provided with a magnet’]” and the “Board need not consider Ground 7,” the ground based on Shannon, Tomiyama, and Aprile. PO Resp. 42 (citing Pet. 71–72); *see also*

Tr. 80:14–82:4 (Patent Owner’s counsel explaining that the Board does not need to reach certain grounds based on Petitioner’s presentation of arguments). Dr. Janét also does not provide any opinion regarding Aprile in this proceeding. Ex. 1021, 39:17–40:1.

Based on the full record before us, because Aprile teaches contrast member 6 and jamming member 7 that are equivalent structures that perform the functions of catch means and latch means, Petitioner persuades us that Aprile teaches a “moveable releasable latch means” that is “provided with a magnet, whereby said releasable latch means is moveable out of engagement with said catch by attraction to said playing surface, whereby a rolling of the toy along the playing surface ceases when said latch means is moved out of engagement with said catch.” Thus, Petitioner persuades us that Shannon, Tomiyama, and Aprile teach or suggest all the limitations of claim 1.

a) Petitioner’s Asserted Motivation to Combine Shannon, Tomiyama, and Aprile

Petitioner also argues that Aprile provides motivation for use in toys, like the proposed combination of Tomiyama and Shannon. Pet. 73 (citing Ex. 1002 ¶¶ 172–179). According to Petitioner, “Aprile explicitly states that its latch is ‘simple and inexpensive,’” “would be ‘usable to advantage in all those applications that involve an extremely low cost, limited overall dimensions, and ease of installation,’” and “the actuation causes toy components to ‘open by “magic.””” *Id.* (citing Ex. 1008, 1:27, 5:3–6, 5:21–24). Petitioner contends that the combination “would be a simplification resulting in smaller dimensions, lower cost, and easier installation.” *Id.* at 74 (citing Ex. 1002 ¶¶ 172–179).

We find that the relied-upon portions of Aprile teach providing “an extremely simple and inexpensive locking device” (Ex. 1008, 1:27), a

“locking device . . . usable to advantage in all those applications that involve an extremely low cost, limited overall dimensions, and ease of installation” (*id.* at 5:3–6), and “second magnet 13” that can be “incorporated in a doll or the like” (*id.* at 5:21–24). Moreover, Aprile provides “a toy, typically in the form of a doll with a mobile part associated to the aforesaid locking device to obtain original and amusing effects.” *Id.* at 1:30–33. We also credit Dr. Kudrowitz’s testimony regarding why one of ordinary skill in the art would have combined Shannon, Tomiyama, and Aprile because the record supports it. Ex. 1002 ¶¶ 176–179 (citing Ex. 1008, 1:27, 1:30–31, 5:3–6, 5:15–24).

Because Aprile teaches a simple, inexpensive, low cost, easily installed locking device of small dimensions usable in dolls, Petitioner persuades us that one of ordinary skill in the art would have been motivated to modify Shannon with, at least, the teachings of Aprile for the reasons asserted. In particular, the full record persuades us that one of ordinary skill in the art would have been motivated to modify Shannon’s toy with Aprile’s magnetically actuated latch because Aprile’s magnetically actuated latch is (1) simple and inexpensive, (2) easily installed, and (3) has miniature dimensions. Ex. 1002 ¶ 177. Petitioner also persuades us that one of ordinary skill in the art would have combined Shannon and Tomiyama with Aprile to provide a lock that opens by “magic” to create an “interesting effect.” Ex. 1002 ¶ 178; Ex. 1005 ¶ 4; Ex. 1008, 5:21–24. Patent Owner does not provide a response specifically directed to Petitioner’s asserted motivation to combine Tomiyama, Shannon, and Aprile. *See generally* PO Resp.; PO Sur-reply; Tr. 80:14–82:4.

For the reasons above, to the extent that the proposed combination of Shannon and Tomiyama lacks “said releasable latch means is provided with a magnet,” Petitioner persuades us by a preponderance of the evidence that

Aprile teaches or suggests such a releaseable latch means and that one of ordinary skill in the art would have combined Shannon, Tomiyama, and Aprile in the manner asserted by Petitioner. Ex. 1002 ¶¶ 176–179; Ex. 1008, 1:27, 1:30–31, 5:3–6, 5:15–24.

b) Reasonable Expectation of Success

Petitioner argues that one of ordinary skill in the art “would not face technical difficulty in applying” Aprile and the proposed modification

would be a trivial exercise of using a simple mechanical device (Aprile’s magnetic latch with the magnet placed directly on the latch) as intended (to have the latch disengage when in proximity to a magnet) to achieve the expected result (the latch moves off the catch and disengages when in proximity to a magnet).

Pet. 73–74 (citing Ex. 1002 ¶¶ 172–179). Patent Owner does not provide a response regarding whether one of ordinary skill in the art would have had any difficulty in applying Aprile to Tomiyama and Shannon. *See generally* PO Resp.; PO Sur-reply.

We find that Aprile provides evidence that applying its locking mechanism to a toy, such as a doll, was within ordinary skill in the art. Ex. 1008, 1:30–33, 5:21–24. We also credit Petitioner’s declarant testimony that one of ordinary skill in the art would have been able to implement Aprile’s teachings to Shannon with “minimal skill or effort” and the proposed modification

would be a trivial exercise of using a simple mechanical device (a magnetic latch with the magnet placed directly on the latch) as intended (to have the latch disengage when in proximity to a magnet) to achieve the expected result (the latch moves off the catch and disengages when in proximity to a magnet)

because the record supports it. Ex. 1002 ¶ 179.

Accordingly, based on the full record before us, Petitioner further persuades us that one of ordinary skill in the art would have had a reasonable expectation of success in combining Shannon, Tomiyama, and Aprile in the manner asserted by Petitioner.

3. Analysis of Dependent Claims 2–5

As discussed above for the challenge of claims 2–5 based on Shannon modified by Tomiyama, we find that Petitioner’s relied-upon portions of Shannon teach or suggest the limitations of claims 2, 3, and 5. Ex. 1002 ¶¶ 162, 163, 165–170; Ex. 1007, 3:9–15, 3:47–48, 6:26–42, Figs. 1, 1A, 10, 10A. For claim 4, Petitioner persuades us that one of ordinary skill in the art would have included a torsion spring to prevent inadvertent release during play. Pet. 45; Ex. 1002 ¶¶ 115–118. Moreover, we find that Aprile teaches or suggests “wherein said releasable latch means is biased to a position in engagement with said catch,” as recited by claim 4, because Aprile teaches spring 12 that keeps jamming member 7 engaged with contrast member 6 to prevent opening of lid 3. Ex. 1008, 4:6–12, Figs. 2, 3.

Patent Owner does not present any arguments specifically for the challenged dependent claims. *See generally* PO Resp.; PO Sur-reply; *see also* Tr. 96:15–18 (Patent Owner’s counsel confirming that no arguments specifically for dependent claims 2–5 were presented). Accordingly, based on the full record before us, we find that Shannon, Tomiyama, and Aprile teach or suggest the limitations of dependent claims 2–5. We also determine above that one of ordinary skill in the art would have modified Shannon with the teachings of Tomiyama and Aprile with a reasonable expectation of success.

4. *Objective Indicia of Nonobviousness*

The parties do not rely on any objective indicia of nonobviousness for any of claims 1–5. *See generally* Pet.; PO Resp.; PO Sur-reply.

5. *Weighing the Graham Factors*

Based on the full record before us, we find that (1) Petitioner’s proposed level of ordinary skill in the art is consistent with the prior art of record; (2) Shannon, Tomiyama, and Aprile teach or suggest all the limitations of claims 1–5, (3) one of ordinary skill in the art would have modified Shannon in view of Tomiyama and Aprile with a reasonable expectation of success, and (4) no objective evidence of nonobviousness has been presented in relation to claims 1–5. Weighing these underlying factual determinations, a preponderance of the evidence persuades us that claims 1–5 of the ’508 patent are unpatentable over Shannon, Tomiyama, and Aprile. *Arctic Cat*, 876 F.3d at 1361.

G. *Remaining Grounds*

Petitioner argues that claims 1–4 are unpatentable over (1) Tomiyama and Thompson and (2) Tomiyama, Thompson, and Aprile. Pet. 24–30, 51–54. Petitioner also contends that claim 5 is unpatentable over (1) Tomiyama, Thompson, and Saucier and (2) Tomiyama, Thompson, Aprile, and Saucier. *Id.* at 46–50, 54. As discussed above, Petitioner further argues that claims 1–5 are unpatentable over Tomiyama modified by the teachings of Shannon. *Id.* at 57–58, 60. Patent Owner responds to these challenges, and the parties provide reply arguments. PO Resp. 11–36; Pet. Reply 7–17; PO Sur-reply 5–13.

Because we determine above that Shannon modified by the teachings of Tomiyama would have rendered obvious claims 1–5; Shannon modified by the teachings of Tomiyama and Aprile would have rendered obvious

claims 1–5; and Petitioner’s proposed modification of Tomiyama alone would have rendered obvious claims 1–4, we do not reach Petitioner’s additional challenges to the same claims based on (1) Tomiyama and Thompson; (2) Tomiyama, Thompson, and Aprile, (3) Tomiyama, Thompson, and Saucier; and (4) Tomiyama, Thompson, Aprile, and Saucier.

H. Patent Owner’s Remaining Argument

Patent Owner states that the Federal Circuit “correctly held that [Administrative Patent Judges (“APJs”)] are unconstitutionally appointed” but “incorrectly held that it could cure this infirmity by revising statutory language and purporting to make APJs removable at will.” PO Resp. 43 (citing *Arthrex, Inc. v. Smith & Nephew, Inc.*, 941 F.3d 1320 (Fed. Cir. 2019)). Patent Owner argues that the “APJs appointed to this proceeding, therefore, remain unconstitutionally appointed, and only Congress can implement a correction” and the institution of the present proceeding “should, therefore, be vacated.” *Id.* Petitioner replies that the Federal Circuit has rejected a similar argument and Patent Owner’s “argument likewise should be rejected.” Pet. Reply 25 (citing PO Resp. 43; *Arthrex, Inc. v. Smith & Nephew, Inc.*, 953 F.3d 760 (Fed. Cir. 2020)). Patent Owner does not provide a reply to this argument. *See generally* PO Sur-reply.

During oral argument, in response to panel questions, Patent Owner’s counsel indicated that Patent Owner believes the issue has been resolved, Patent Owner does not maintain the argument, and there is no issue related to the Appointments Clause that require our resolution. Tr. 96:19–97:7. We, therefore, do not need to decide the issue.

III. CONCLUSION³

In summary:

Claim(s)	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1–4	§ 103	Tomiyama	1–4	
1–4	§ 103	Tomiyama, Thompson ⁴		
5	§ 103	Tomiyama, Thompson, Saucier ⁵		
1–4	§ 103	Tomiyama, Thompson, Aprile ⁶		

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

⁴ As explained in Section II.G, we do not reach the challenge to claims 1–4 based on Tomiyama and Thompson because the same claims are determined to be unpatentable over Tomiyama alone, Shannon modified by Tomiyama, and Shannon modified by Tomiyama and Aprile.

⁵ As explained in Section II.G, we do not reach the challenge to claim 5 based on Tomiyama, Thompson, and Saucier because the same claim is determined to be unpatentable over Shannon modified by Tomiyama and Shannon modified by Tomiyama and Aprile.

⁶ As explained in Section II.G, we do not reach the challenge to claims 1–4 based on Tomiyama, Thompson, and Saucier because the same claims are determined to be unpatentable over Tomiyama alone, Shannon modified by Tomiyama, and Shannon modified by Tomiyama and Aprile.

5	§ 103	Tomiyama, Thompson, Aprile, Saucier ⁷		
1–5	§ 103	Tomiyama, Shannon	1–5	
1–5	§ 103	Tomiyama, Shannon, Aprile	1–5	
Overall Outcome			1–5	

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–5 of U.S. Patent No. 8,500,508 B2 have been shown, by a preponderance of the evidence, to be unpatentable; and

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

⁷ As explained in Section II.G, we do not reach the challenge to claim 5 based on Tomiyama, Thompson, and Saucier because the same claim is determined to be unpatentable over Shannon modified by Tomiyama and Shannon modified by Tomiyama and Aprile.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CHOIROCK CONTENTS FACTORY CO., LTD.,
Petitioner,

v.

SPIN MASTER LTD.,
Patent Owner.

IPR2019-00897
Patent 8,500,508 B2

DOUGAL, *Administrative Patent Judge, concurring.*

I join with my colleagues in the decision that Tomiyama and the combination of Shannon as modified by Aprile and Tomiyama teach the limitations of claims 1–5.

However, I do not agree that the Petition establishes that one of skill in the art would have modified Shannon based on the teachings of Tomiyama. In particular, the Petition relies on hindsight in proposing the modification of Shannon’s fastener, including magnets, to include Tomiyama’s turret release mechanism. *See* Pet. 58–61. The function of Tomiyama’s magnet is different than that of Shannon and is not a fastener, but is part of a separate release mechanism. Thus, Shannon’s mention of a

magnet fastener does not equate to a magnetically released fastener. The Petition does not sufficiently address these differences. Further, the Petition's reliance on the "interesting" effect of rolling a ball over a magnet with a magnetic release mechanism (*id.* at 59), without more, lacks sufficient rational underpinnings (*KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007)).

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For PETITIONER:

Siho “Scott” Yoo
Hilary L. Preston (*pro hac vice*)
VINSON & ELKINS L.L.P.
syoo@velaw.com
hpreston@velaw.com
ChoirockIPRService@velaw.com

For PATENT OWNER:

Jennifer C. Bailey
Callie Pendergrass
Megan J. Redmond (*pro hac vice*)
Clifford T. Brazen
ERISE IP
Jennifer.Bailey@EriseIP.com
Callie.Pendergrass@EriseIP.com
Megan.Redmond@EriseIP.com
Cliff.Brazen@EriseIP.com