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Paper 101
Entered: December 14, 2017

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

RUBICON COMMUNICATIONS, LP,
Petitioner,

v.

LEGO A/S,
Patent Owner.

Case IPR2016-01187
Patent 8,894,066 B2

Before SCOTT A. DANIELS, NEIL T. POWELL, and TIMOTHY J. GOODSON, *Administrative Patent Judges*.

POWELL, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

A. Background

Petitioner filed a Petition requesting an *inter partes* review of claims 1–8 of U.S. Patent No. 8,894,066 B2 (Ex. 1001, "the '066 patent"). Papers 1, 41, 89 ("Pet.").[1] Patent Owner, LEGO A/S, filed a Corrected Preliminary Response. Paper 20 ("Prelim. Resp."). In view of those submissions, we instituted an *inter partes* review of claims 1–8. Paper 38 ("Institution Decision" or "Inst. Dec."). Subsequently, Patent Owner filed a Patent Owner Response (Paper 70, "PO Resp."), and Petitioner followed with a Reply (Paper 72, "Pet. Reply"). An oral hearing was held on October 11, 2017 and a copy of the transcript was entered into the record (Paper 92, "Tr.").

We have jurisdiction under 35 U.S.C. § 6. This Decision is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of the challenged claims. For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 1, 4, 6, and 8 of the '066 patent are unpatentable, but has not shown by a preponderance of the evidence that claims 2, 3, 5, and 7 are unpatentable.

B. Related Matters

The '066 patent has been asserted in *Lego Systems A/S v. Rubicon Communications, LP dba Smallworks and Smallworks, LLC*, Case No. 3:15-cv-00823 (VLB) (D. Connecticut). *See* Pet. 5; *see* Paper 5, 2.

[1] Papers 1, 41, and 89 differ from one another only in the parties identified as real parties-in-interest.

C. The Pending Grounds of Unpatentability

The pending grounds of unpatentability include:

Reference(s)	Statutory Basis	Challenged Claim(s)
Philo[2]	35 U.S.C. § 102(b)	1–6 and 8
Philo and Building Robots[3]	35 U.S.C. § 103(a)	7[4]
Anderson[5]	35 U.S.C. § 102(b)	1–4, 6, and 8

Petitioner also relies on a declaration from Jay P. Kesan, Ph.D. (Ex. 1036). Patent Owner relies on a declaration from Elizabeth B. Knight (Ex. 2026).

D. The '066 Patent

The '066 patent "relates to a manual controller for manipulating images or symbols on a visual display and, in particular, to a controller that can be constructed with user-arranged matable building elements to exhibit a customized shape and style depending on user game-inspired, ergonomic, or appearance preferences." Ex. 1001, 1:29–34. The '066 patent discusses one example in connection with Figure 1, which is reproduced below.

[2] Philo's Home page, www.philohome.com (Exhibit 1017).

[3] Mario Ferrari et al., *Building Robots with Lego® Mindstorms™: The ULTIMATE Tool for Mindstorms Maniacs!*, published 2002 (Exhibit 1016).

[4] On page 7, the Petition identifies claims 1–8 as challenged based on Philo in combination with Building Robots. The Petition's substantive discussion of this challenge, however, only discusses claim 7. Pet. 31. Consequently, the ground as instituted only included claim 7. *See* Inst. Dec. 20–21, 27.

[5] U.S. Patent Publication 2002/0196250 A1 (Exhibit 1020).

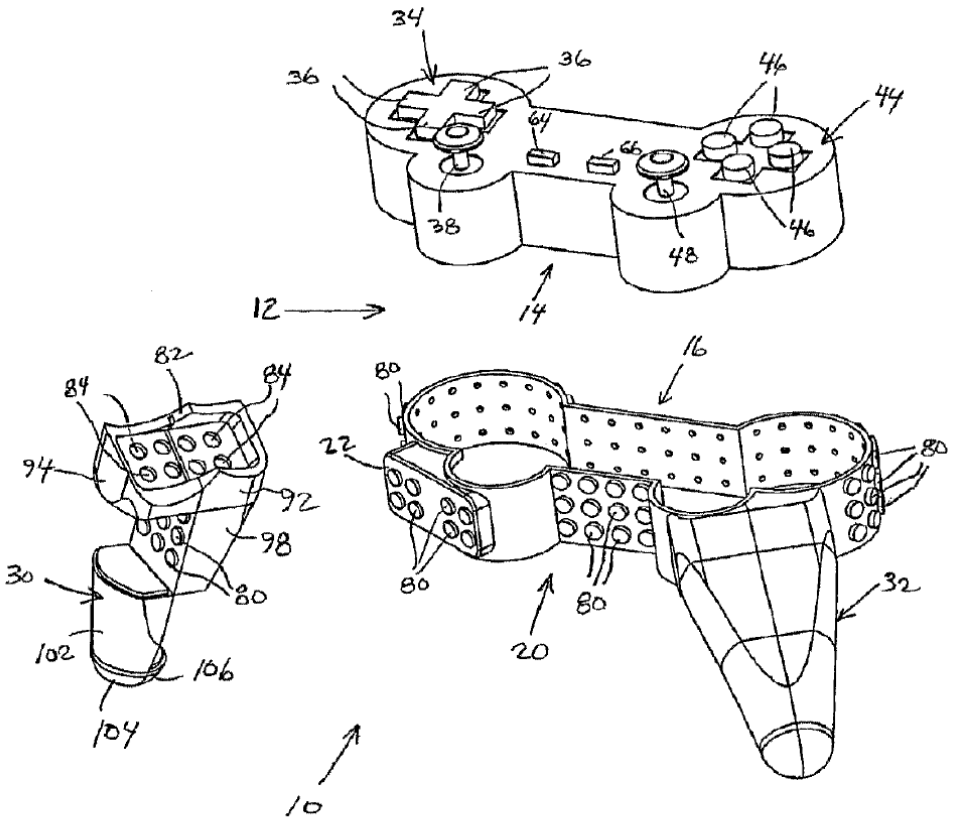


Fig. 1

Figure 1 shows manual controller 10, left-hand grip 30, and right-hand grip 32. *Id.* at 3:5–7, 3:18–20. Manual controller 10 includes main housing 14 and main casing 16, which "conformably fits around the side surface of main housing 14." *Id.* at 3:5–7. Main casing 16 includes patterned surface portion 20, which includes cylindrical mating features or bosses 80. *Id.* at 3:11–12, 3:35–38. Each hand grip 30, 32 has corresponding recesses 84 for snugly attaching hand grips 30, 32 to bosses 80 on main casing 16. *Id.* at 3:38–45.

E. Illustrative Claim

Claim 1 is independent. Each of the other challenged claims depends from claim 1. Claim 1 is illustrative and recites:

> 1. A method of facilitating user preference in creative design of a controller for manipulating images or symbols on a display, the controller having a housing with an exterior surface and an interior region confining electrical components for producing signals for manipulating image or symbols on the display, comprising
>
> providing a main casing configured to conformably fit around a portion of the exterior surface of and thereby receive the housing of the controller, the main casing having a patterned surface portion configured to support a set of building elements that are configurable for mating to the patterned surface portion; and
>
> providing in the set of building elements a subset of building elements that are matable to one another and configured for a user to build on the patterned surface portion of the main casing a customized replica of at least a portion of a play item and thereby transform the exterior surface of the housing of the controller to a customized shape and appearance in accordance with the user's preference.

Ex. 1001, 6:52–7:4.

II. ANALYSIS

A. Claim Construction

We interpret claims of an unexpired patent using the broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b). We presume a claim term carries its "ordinary and customary meaning," which is "the meaning that the term would have to a person of ordinary skill in the art in question" at the time of the invention. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007) (citation and quotations omitted). This presumption, however, is rebutted when the patentee acts as his own lexicographer by giving the term a particular meaning in the specification with "reasonable clarity,

deliberateness, and precision." *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

Petitioner and Patent Owner address the construction of a number of claim terms. Pet. 11–14; PO Resp. 7–13; Pet. Reply 1–7. For purposes of this decision, we address only certain terms and only to the extent necessary to resolve the parties' disputes regarding the pending grounds of unpatentability. *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) ("[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.").

1. "conformably fit" and "mating"—claim 1

Patent Owner asserts that the claim term "conformably fit" means "[j]oining of parts relying on matching forms and dimensions." PO Resp. 8. Patent Owner asserts that the claim term "mating" means "[j]oining of building element(s) to the patterned surfaces using cylindrical bosses and recesses." *Id.* Patent Owner concedes that, as suggested in our Institution Decision, these proposed constructions of "conformably fit" and "mating" do not make the terms mutually exclusive. *Id.* at 11. Patent Owner further asserts that "[n]onetheless, there remains a distinction between the terms with respect to joined elements. That is 'mating' relates to the joining of elements using respective cylindrical bosses and/or recesses. 'Conformably fit[ting]' relates to the joining of elements using the overall forms and dimensions of the elements." *Id.* at 11–12.

Petitioner offers certain observations regarding Patent Owner's constructions. Pet. Reply 4–5. Petitioner notes Patent Owner's concession that "conformably fit" and "mating" are not mutually exclusive. *Id.* at 4. Petitioner also advances that "conformably fit" and "mating" encompass

engagement of surfaces without fastening or connection. *Id.* at 5. Petitioner reasons that the '066 patent "does not use the terms 'join,' 'fasten,' 'link,' 'connect,' or similar terms to describe the relationship between housing 14 and casing 16 in Figure 1. Indeed, Figure 1 appears to show that the controller merely slides into casing 16 and is 'joined' by abutment rather than fastening or connection." *Id.* at 4–5 (citing Ex. 1036 ¶¶ 36–37).

In order to resolve the parties' dispute, we need address only certain aspects of the broadest reasonable interpretations of "conformably fit" and "mating." We first note that we are persuaded that these terms mean different things, but that they are not mutually exclusive in scope. *See* PO Resp. 10–12; Pet. Reply 4. Indeed, we note that under Patent Owner's proffered constructions of the terms, "mating" constitutes one way to "conformably fit." *See* PO Resp. 8; Pet. Reply 4. Additionally, Petitioner's reasoning and evidence persuades us that "conformably fit" encompasses components that abut one another, and does not require fastening or connection of components. *See* Pet. Reply 4–5; Ex. 1001, 3:5–8, Fig. 1; Ex. 1036 ¶¶ 36–37. Specifically, because we agree with Petitioner that the Specification and drawings of the '066 patent indicate main casing 16 conformably fits main housing 14 through abutment without fastening or connection, we are persuaded that the broadest reasonable interpretation of "conformably fit" encompasses such an arrangement. *See* Ex. 1001, 3:5–8, Fig. 1; Ex. 1036 ¶¶ 36–37.

2. "manipulating"—claim 1

Claim 1 recites "a controller for manipulating images or symbols on a display, the controller having . . . an interior region confining electrical components for producing signals for manipulating image or symbols on the

display." Patent Owner asserts that "manipulating" means "[c]hanging in a skillful manner." PO Resp. 8. In support of this, Patent Owner argues "[t]he dictionary definition of 'manipulate' is 'to treat or operate with or as if with the hands or by mechanical means especially in a skillful manner." *Id.* at 12, n.9 (citing Ex. 2027). Patent Owner also notes that the '066 patent discusses "joysticks, game pads, steering wheels, guns, mice, remote devices for television, stored multi-media display and recording machines, cellular telephones, portable video game systems, and portable multi-media devices" as examples of "controllers for manipulating images or symbols." *Id.* at 12–13 (citing Ex. 1001, 1:38–51). Arguing that such controllers allow skillfully changing symbols and images, Patent Owner asserts that the disclosed controller comports with "manipulating" meaning "changing in a skillful manner." *Id.* at 13 (citing Ex. 2026 ¶ 29).

Petitioner argues that Patent Owner has not demonstrated that the broadest reasonable interpretation of "manipulating" requires execution "in a skillful manner." Pet. Reply 5. Petitioner asserts that the dictionary definition cited by Patent Owner clearly indicates that "in a skillful manner" constitutes an optional aspect of "manipulating." *Id.* at 6 (citing Ex. 1036 ¶ 39). Petitioner further argues that Patent Owner's assertion that the claim language requires execution "in a skillful manner" does not help resolve any dispute because 1) Patent Owner does not apply this construction, and 2) the word "skillful" is a term of degree, for which the '066 patent provides no guidance. *Id.* at 6 (citing Ex. 1036 ¶ 40).

Petitioner also asserts that the correct interpretation of "manipulate" is "changing with or as if with the hands, or by mechanical or electronic means." *Id.* at 6 (citing Ex. 1036 ¶ 41). Petitioner asserts that "[t]his

construction bears fidelity to the core of Patent Owner's cited dictionary definition while omitting the unnecessary and unclear 'skillful manner,'" while also encompassing electronic controllers, in addition to mechanical. *Id.* at 6–7.

Consistent with Petitioner's assertions, the record evidence does not support a conclusion that the claim term manipulating requires execution in a skillful manner. We agree with Petitioner that Patent Owner's dictionary definition of "manipulate" indicates that a "skillful manner" constitutes an optional aspect of the act of manipulating. *See* PO Resp. 12; Ex. 2027. Patent Owner's observation of the mere possibility of using the controllers disclosed by the '066 patent to change skillfully symbols and images does not persuade us that a person of ordinary skill in the art would understand from the '066 patent that "manipulating" requires skillful execution. Petitioner persuades us that the broadest reasonable interpretation of "manipulating" includes "changing with or as if with the hands, or by mechanical or electronic means," consistent with Patent Owner's dictionary definition of "manipulate," in combination with the '066 patent's disclosure of using electronic controllers. *See* Ex. 2027; Ex. 1001, 3:38–51.

3. "manipulating images or symbols on a display"—claim 1

Patent Owner also suggests that the claim language "manipulating images or symbols on a display" does not include user input triggering the display to change from showing one set of one or more images or symbols to showing another set of one or more images or symbols. *See* Tr. 20:4–21:6. We conclude that the record evidence does not support Patent Owner's position. We find nothing in the plain language of the claim that would require any particular type of change to images or symbols on the display.

Furthermore, we note that the ’066 patent identifies, among others, “remote devices for television” as examples of “controllers for manipulating images or symbols on a visual display of a computer device.” Ex. 1001, 3:38–41. In view of this disclosure, and given that television remotes respond to user input to trigger the display to change from showing one set of one or more images or symbols to showing another set of one or more images or symbols, we conclude that the broadest reasonable interpretation of “manipulating images or symbols on a display” encompasses such functionality.

4. “a hand grip section having a patterned surface portion . . . to provide a gripping portion on which the user can grasp during play activity”—claim 5

Petitioner does not explicitly construe the language of claim 5. *See* Pet. 11–14, Pet. Reply 1–7. In its discussion of how Philo allegedly anticipates claim 5, however, Petitioner asserts that “[s]o long as Philo discloses a section that is capable of being grasped by a user, . . . then claim 5 is met.” Pet. Reply 15. In asserting this, Petitioner emphasizes the claim’s recitation that the “hand grip section” provides a portion that the “user can grasp during play activity.” *Id.*

The plain meaning of the language “a hand grip section” is structure designed to be gripped with the hand. Petitioner’s understanding of claim 5 fails to give effect to this language. *See Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 950 (Fed. Cir. 2006) (“[C]laims are interpreted with an eye toward giving effect to all terms in the claim.”). The Specification of the ’066 patent is consistent with the plain meaning of the language of claim 5, as the Specification discloses structure with a configuration and position to be

gripped during use of a controller. *See In re Smith Int'l, Inc.*, 871 F.3d 1375, 1382–83 (Fed. Cir. 2017) (explaining that the broadest reasonable interpretation is "an interpretation that corresponds with what and how the inventor describes his invention in the specification, *i.e.*, an interpretation that is 'consistent with the specification.'") (quoting *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997)). Specifically, the '066 patent discloses left-hand grip 30 and right-hand grip 32, which are plainly shown in Figure 1 as structures designed to be gripped. Ex. 1001, 3:18–20, Fig. 1. Furthermore, the '066 patent discloses that the position of the various components, including left-hand grip 30 and right-hand grip 32 is designed to allow a user to grip left-hand grip 30 and right-hand grip 32 while the user accesses various controls with the digits of his or her left and right hands. *Id.* at 3:18–25. Accordingly, contrary to Petitioner's assertion, we determine that claim 5 requires structure designed to be gripped by a user, not simply structure that can be gripped.

B. Alleged Anticipation by Philo

1. Overview of Philo

Philo discloses, *inter alia*, a Rack and Pinion Steering Car (Ex. 1017, 7–9) and a Brick Simon (Ex. 1017, 10–13). Philo's Brick Simon includes an RCX assembled with other components. *E.g.*, Ex. 1017, 12. Philo shows its Brick Simon in action in the figure reproduced below.

Philo's figure showing the Brick Simon in action shows a user pressing a key on the Brick Simon. *See* Ex. 1017, 13.

2. Claim 1

Petitioner explains how it believes Philo discloses the limitations of claim 1, citing to record evidence. Pet. 24–28; Pet. Reply 7–14. Petitioner indicates that Philo's RCX corresponds to the "controller" recited in claim 1. *See, e.g.*, Pet. 25. Petitioner indicates that certain other components assembled adjacent the RCX compose the "casing" recited in claim 1. *See, e.g.*, Pet. 26–27; Pet. Reply 7–13. Petitioner indicates that certain other components, including "Simon color button elements and lid elements," correspond to the "subset of building elements" recited in claim 1. *See, e.g.*, Pet. 27. Petitioner's explanation and evidence demonstrate by a preponderance of the evidence that Philo's Brick Simon anticipates claim 1.[6]

[6] Accordingly, we need not reach the question of whether Philo's Rack and Pinion Steering Car anticipates claim 1.

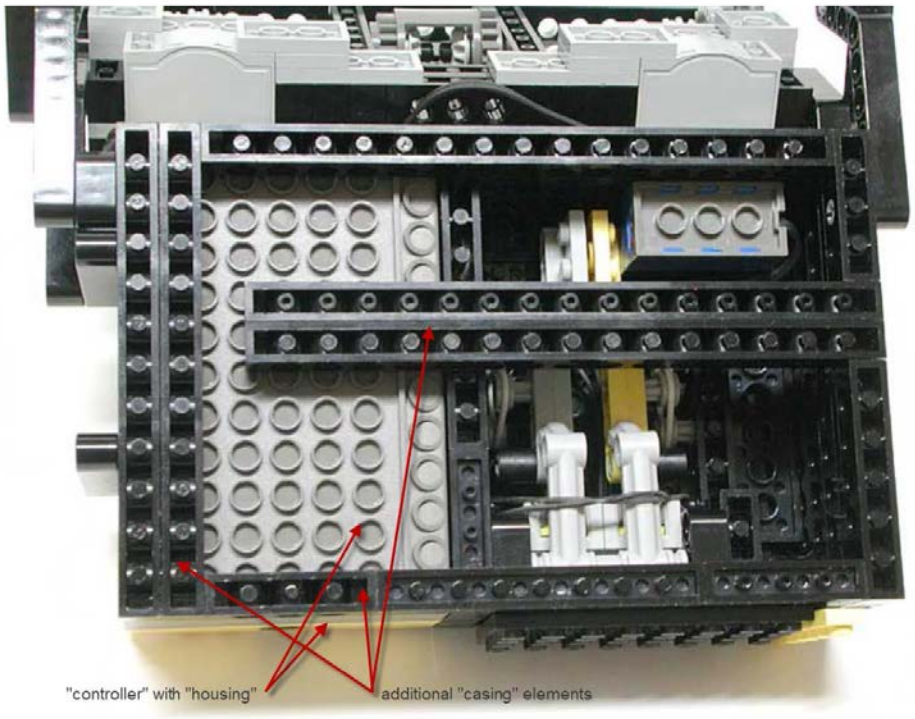
We find Patent Owner's counterarguments regarding claim 1 unpersuasive.[7] We now turn to a more detailed discussion of the parties' disputes regarding whether Philo discloses certain terms recited in claim 1.

a. "providing a main casing configured to conformably fit around a portion of the exterior surface and thereby receive the housing of the controller"

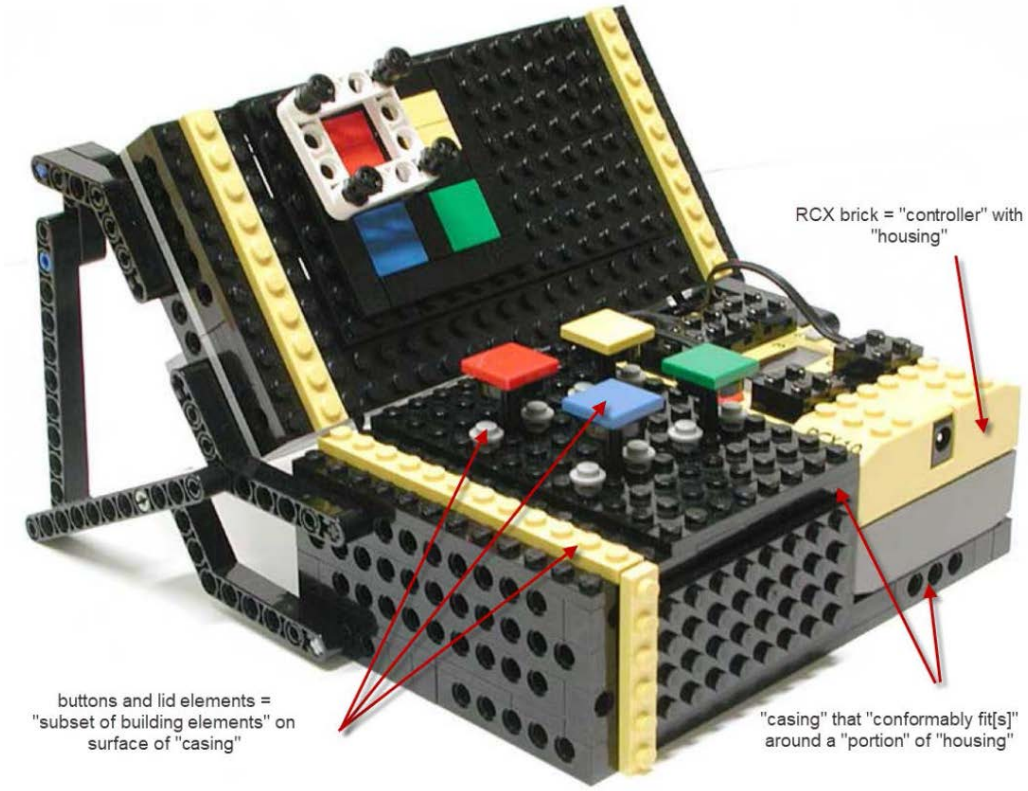
The parties dispute whether Philo discloses "providing a main casing configured to conformably fit around a portion of the exterior surface of and thereby receive the housing of the controller." We are persuaded that Petitioner has shown, by a preponderance of the evidence, that Philo's disclosures regarding the Brick Simon disclose this. Pet. 24–27; Ex. 1017, 10–13; Pet. Reply 7–14; Ex. 1036 ¶¶ 43–50; Ex. 1039. Petitioner asserts that Philo shows a casing abutting or contacting the RCX on at least its bottom, left, and right sides. Pet. Reply 11 (citing Ex. 1036 ¶ 47). Patent Owner concedes that Philo's Brick Simon has Lego structure below and on the right and left sides of the RCX. Tr. 19:8–21; PO Resp. 18 ("At most, LEGO elements contact the gray bottom and one or two sides of the RCX, which is short of fitting around a portion of the controller."). We find that this Lego structure forms a casing located on the lower side, the left side, and the right side of the RCX. Philo's figure reproduced below (with

[7] Patent Owner asserts that Petitioner improperly presented certain new arguments and evidence in connection with its Reply. *See* Paper 80. As discussed in detail below, we find that Petitioner's Reply included some procedurally improper new arguments and evidence. Except as noted below, we find the arguments and evidence presented in Petitioner's Reply to be procedurally proper replies to the arguments presented in Patent Owner's Response.

annotations from Petitioner) show the lower portion of the casing extending across and adjacent the lower side of the RCX.



The figure from Philo reproduced above shows the underside of the Brick Simon with annotations provided by Petitioner. Pet. Reply 10. Philo's figure reproduced below (with annotations from Petitioner) shows the left side of the casing extending upward of the lower side, adjacent the left side of the RCX.



The figure from Philo reproduced above shows the left side of the Brick Simon with annotations from Petitioner. *Id.* at 9. Philo's figure reproduced below (with annotations from Petitioner) shows the right side of the casing extending upward of the lower side, adjacent the right side of the RCX.

The figure from Philo reproduced above shows the right side of the Brick Simon with annotations from Petitioner. *Id.* at 11.

We find that Petitioner has demonstrated by a preponderance of the evidence that Philo's casing shown in the figures above is "configured to conformably fit around a portion of the exterior surface" of the RCX's housing. We find that Philo meets this limitation in that its housing is configured to conformably fit around the lower, middle portion of the RCX. By extending adjacent the lower, left, and right side portions of the RCX, Philo's casing is located on three sides of the lower, middle portion. Given this, we find that Philo's casing is configured to fit around the lower, middle portion of the RCX.

Patent Owner asserts that Philo's disclosure includes, "[a]t most, LEGO elements contact the gray bottom and one or two sides of the RCX

brick, which is short of fitting around a portion of the controller." PO Resp. 18 (citing Ex. 2026 ¶ 34). Patent Owner does not provide persuasive evidence or reasoning in support of its argument that contacting the bottom and two sides of the RCX does not meet the disputed claim language. Without citing any supporting evidence, Ms. Knight testifies that "[m]erely contacting one or two sides of the RCX does not constitute conformably fitting around the controller." Ex. 2026 ¶ 34. Asserting that Philo does not disclose structure adjacent the front of the RCX, Patent Owner suggests that Philo fails to disclose a casing that fits "around" the RCX. Tr. 19:23–20:2. Patent Owner asserts that the plain meaning of "around" includes "located or existing on all sides." *Id.* at 16:17–20.

We find these assertions unpersuasive because they are not commensurate in scope with the claim language, which only requires a casing configured to "fit around a *portion* of the exterior surface" (emphasis added), not entirely around the exterior surface. The lack of casing structure adjacent certain surfaces of the RCX, such the front of the RCX, does not negate that Philo's casing is located on three sides of the lower, middle portion of the RCX.[8]

[8] To the extent that Patent Owner believes the claim language "around a portion of the exterior surface" requires the casing to extend 360 degrees around the exterior surface, Patent Owner has not advanced this claim construction, much less provided persuasive evidence or reasoning in support of such a construction. *See* PO Resp. 7–13. At the oral hearing, Patent Owner focused on Figure 1, which shows an example of casing 16 configured to extend 360 degrees around the exterior surface of housing 14. *See* Tr. 15:22–16:16. But the record lacks evidence or reasoning supporting a conclusion that the broadest reasonable interpretation of claim 1 requires importing this one example from the disclosure of the '066 patent as a

We are also persuaded that Philo's casing is configured to fit "conformably." Patent Owner asserts that "conformably fit" requires "relying on matching forms and dimensions." PO Resp. 8. Petitioner asserts that Philo's casing and RCX meet this construction because the RCX is joined to the casing with multiple surfaces of the RCX abutting or closely adjacent to and flush with surfaces of the casing. Pet. Reply 12 (citing Ex. 1036 ¶¶ 49–50). Additionally, it is plain from Philo's figures that the overall shape and dimensions of Philo's casing matches the overall shape and dimensions of the lower, middle portion of the RCX. Regarding the forms, the lower portion of Philo's casing extends parallel to the lower side of the RCX, and the left and right sides of Philo's casing extend parallel to the left and right sides of the RCX. Regarding dimensions, Philo's drawings demonstrate that the RCX fits closely between the left and right sides of Philo's casing, showing matching dimensions.[9] Accordingly, Petitioner has demonstrated by a preponderance of the evidence that Philo's casing is "configured to conformably fit around a portion of the exterior surface of" the RCX.

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limitation into the claim, in the face of claim 1's plain statement that the housing need only fit around a "portion" of the exterior surface. *See SuperGuide Corp. v. DirecTV Enters., Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004) (holding that "a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment").

[9] To the extent Patent Owner intends "matching . . . dimensions" to mean exactly matching, we find this unpersuasive. Patent Owner does not provide evidence or reasoning persuading us that the claim language would require exactly matching dimensions.

At the oral hearing, Patent Owner argued (for the first time) that Philo does not rely on matching forms and dimensions because the RCX has beveled portions not matched by the adjacent portions of Philo's casing. Tr. 17:22–18:25. We find this late argument unpersuasive. Patent Owner's contention that the claims require "relying on matching forms and dimensions" does not assert that every form and every dimension of the "casing" must match every form and every dimension of the claimed "housing." *See* PO Resp. 8. Moreover, even if Patent Owner had asserted that every form and every dimension of the "casing" and "housing" must match, Patent Owner does not present reasoning or evidence that would persuade us that the claims require such an exact match. Accordingly, notwithstanding Patent Owner's observation of minor discrepancies between the forms of Philo's casing and the RCX, Petitioner has demonstrated by a preponderance of the evidence that the casing and RCX join to one another relying on matching overall forms and dimensions of the casing and the RCX in a manner such that the casing fits around the lower middle portion of the RCX.

This finding is not negated by Patent Owner's argument that the RCX and adjacent components appear to join one another through cylindrical bosses and recesses. *See* PO Resp. 19–20. Although the RCX and casing join one another at certain points via cylindrical bosses and recesses, we still find that the RCX and the casing also join one another relying on matching overall forms and dimensions.[10] As noted in Section II.A.1 above, to the

[10] Consistent with Patent Owner's concession that "conformably fit" and "mating" do not have mutually exclusive meanings, mating of the casing to the RCX via cylindrical bosses and recesses does not preclude the casing

extent Patent Owner suggests that the disputed claim language requires fastening or connection through the matching forms and dimensions, the arguments and evidence of record do not support such an interpretation. Additionally, even if the disputed claim limitation did require fastening or connection through matching forms and dimensions, we find that through a combination of overall matching forms and dimensions and the matching forms and dimensions of cylindrical bosses and recesses, Philo's casing is joined around the lower, middle portion of the RCX in a secure fashion, relying on matching forms and dimensions.

b. "manipulating images or symbols on a display"

Petitioner and Patent Owner dispute whether Philo discloses "manipulating images or symbols" on the LCD screen on the top of the RCX in Philo's Brick Simon. Petitioner asserts that Philo does, citing Philo's disclosure that:

> 3) Brick Simon will first ask for the play difficulty level. RCX LCD shows a walking 1234 pattern, waiting for a key to be pressed. . . .
>
> A separate high score is kept for each difficulty level.
>
> The chosen difficulty level is then displayed as 1111, 2222, 3333 or 4444, the RCX plays a little tune and the game begins.
>
> 4) Simon asks you to repeat a longer and longer color sequence (a new color is added at the end of sequence after you repeat it successfully on the keyboard). Its hand turns on the dial to show colors and plays a note (different for each color). You then have to key in the sequence in order. RCX LCD displays current

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from also conformably fitting via matching of overall shapes and dimensions.

> sequence length (2 digits left) and high score sequence length to beat (2 digits right), separated by a dot.
>
> When you reach high score, Brick Simon plays a short tune
>
> to tell you…
>
> 5) When you finally lose, either because you hit a wrong key or waited too long (doh sound), program is halted. Press RCX Run button to start a new game!

Ex. 1017, 12–13; Pet. 25–26.

Petitioner asserts that the walking pattern of 1234 shown on the display constitutes symbols. Pet. Reply 13 (citing Ex. 1036 ¶ 52). Petitioner asserts further that "Philo explicitly states that the displayed pattern of symbols changes in response to the user's keypress to select a difficulty level. . . . That is, the user's keypress provides input to the RCX, which then changes its display of symbols to confirm that input." *Id.* (citing Ex. 1036 ¶ 53). Petitioner asserts that a person of ordinary skill in the art would understand this to constitute "changing with or as if with the hands, or by mechanical or electronic means," and therefore "manipulating" symbols. *Id.* at 13–14 (citing Ex. 1036 ¶ 53).

Patent Owner argues that Philo does not disclose manipulation of images or symbols. PO Resp. 20 (citing Ex. 2026 ¶ 35). Patent Owner contends that "[a]t most, Philo indicates that numbers are displayed without any 'manipulating' or change by the user." *Id.* (citing Ex. 1017, 11–12). At the oral hearing, Patent Owner elaborated that "[w]hat's happening [in Philo] is the image that's displayed is removed and replaced by another image." Tr. 21:1–2. Patent Owner likens this to the situation where an image is removed and a new image displayed if "you turn off the power, remove the batteries or anything else." *Id.* at 20:9–10. Patent Owner argues

that "[i]n most video games, you may have a figure and you push a joystick and that figure moves. That's manipulating an image as opposed to hitting a button and that image is erased and replaced by another image." *Id.* at 21:2–5.

Petitioner's assertions and evidence persuade us that a person of ordinary skill in the art would understand Philo's RCX discloses "a controller for manipulating images or symbols on a display," as recited in claim 1. Pet. 25–26; Pet. Reply 13–14; Ex. 1017, 10–13; Ex. 1036 ¶¶ 51–53. We find that Philo discloses this at least in its discussion of the process of selecting a difficulty level. Ex. 1017, 12; Ex. 1036 ¶¶ 51–53. A person of ordinary skill in the art would understand Philo as disclosing that when the RCX's LCD display shows a walking 1234 pattern, a person pressing a button to specify a difficulty level of 1, 2, 3, or 4 triggers the RCX changing the display to show the specified difficulty level in symbols, i.e., "1111, 2222, 3333 or 4444." Ex. 1017, 12; Ex. 1036 ¶¶ 51–53. We are persuaded that this discloses changing symbols on the display "with or as if with the hands, or by mechanical or electronic means," consistent with the broadest reasonable interpretation of "manipulating."

As discussed above in Section II.A.3, consistent with the Specification of the '066 patent, the broadest reasonable interpretation of "manipulating images or symbols on a display" encompasses the display changing from showing one set of one or more images or symbols to showing another set of one or more images or signals. Accordingly, contrary to Patent Owner's arguments, we find that Philo's disclosure of removing the walking 1234 pattern and displaying symbols representing the user's selected difficulty level meets the claim language. Just like the '066 patent's disclosed remote

devices for television, Philo's RCX manipulates images or symbols on a display by responding to user input to remove images or symbols from the display and show other images or symbols. *See* Ex. 1001, 1:38–41. Furthermore, contrary to Patent Owner's suggestion, Philo's disclosure of changing the display is not akin to simply turning a device off and back on again, as Philo discloses changing the display to show the difficulty level specifically chosen by the user, not randomly changing the image because of a restart. *See* Tr. 20:9–10.

3. Claims 2 and 3

Claim 2 depends from claim 1 and further recites "control actuators operatively connected to the electrical components, the control actuators including a type of actuator that responds to user movement of the controller to produce the signals for manipulating the images or signals." Ex. 1001, 7:5–9. Claim 3 depends from claim 2 and further recites that "the type of actuator is a motion sensor." *Id.* at 7:10–11. In addressing these limitations, the Petition states that:

> *Philo* discloses control actuators in the form of rotation sensors. *Philo* further discloses that the rotation sensors operatively connected to the electrical components of the RCX brick. The rotation sensors respond to user movement of the controller. The output of the rotation sensors produces signals that affect the images or symbols on the display. See *Philo*, Rotation Sensors Internals page. "Lego rotation sensor is a nice little device that enables RCX to measure rotation of an axle with good resolution: 16 steps per turn….As the axle is rotated clockwise, output cycles through steps 1 > 2 > 3 > 4 > 1, and through steps 1 > 4 > 3 > 2 > 1 when rotated ccw. This enables RCX to determinate rotation direction" *Philo* also includes a link to a MindStorms RCX Sensor Input page by Michael Gasperi, The MindStorms RCX Sensor Input page, which discloses "My Almost Ultrasonic

> Motion Sensor detects the motion of objects near to the RCX." (Gasperi's Mindstorms RCX Sensor Input page is further discussed below under Ground 5).

Pet. 28.

Patent Owner argues that, contrary to the Petition's indication, the alleged disclosure of "a nice little device that enables RCX to measure rotation of an axle with good resolution" does not appear in the portion of Philo provided by Petitioner. PO Resp. 21. In response, Petitioner's Reply states only that "[f]or concision, Petitioner defers discussion of [claims 2 and 3 to the challenge as anticipated by Anderson]." Pet. Reply 14.

We find Patent Owner's arguments more persuasive than Petitioner's. Consistent with Patent Owner's argument, the quoted disclosure that the Petition attributes to Philo does not appear in the portion of Philo provided by Petitioner. *See* Ex. 1017, 1–21. Regarding the Petition's assertion that "*Philo* also includes a link to a MindStorms RCX Sensor Input page by Michael Gasperi," Petitioner provides no explanation of how this disclosure in a different reference establishes that Philo anticipates the claims. For the foregoing reasons, we are not persuaded that Petitioner has demonstrated by a preponderance of the evidence that Philo anticipates claims 2 and 3.

4. Claim 4

Claim 4 depends from claim 1 and further recites "control actuators operatively connected to the electrical components, the control actuators including a type of actuator that responds to user tactile manipulation of the controller to produce the signals for manipulating the images or symbols." Ex. 1001, 7:12–16. Petitioner asserts that Philo's Brick Simon includes keys or buttons that constitute such "control actuators." Pet. 25–29; Pet. Reply

14. Petitioner notes that Philo's Brick Simon includes "Simon color button elements" (Pet. 27), and that the RCX "wait[s] for a key to be pressed" and then displays "the chosen difficulty level" (*id.* at 26). Citing Philo's disclosure that "[t]he two keys on the left release the pressure on two touch sensors" (Ex. 1017, 11), Petitioner asserts that Philo discloses all of the limitations of claim 4. Pet. 28–29.

Patent Owner asserts that Philo does not disclose the limitations of claim 4. PO Resp. 22. Specifically, Patent Owner argues that "Philo does not describe that touch sensors produce signals for manipulating images or symbols." *Id.* (citing Ex. 2026 ¶ 48).

Petitioner counters that the buttons of Philo's Brick Simon serve the purpose of being pressed. Pet. Reply 14 (citing Ex. 1036 ¶ 54). Petitioner adds that Philo shows a user pressing one of the Brick Simon's buttons in the figure reproduced below. *Id.*

The figure of Philo reproduced above shows a user pressing a button of the Brick Simon. Asserting that pressing a key constitutes "user tactile manipulation," Petitioner explains that a user pressing a button to select a

difficulty level triggers "manipulating" symbols on the display of the RCX. *Id.* (citing Ex. 1036 ¶ 55).

With respect to claim 4, we find Petitioner's arguments more persuasive than Patent Owner's. Although Philo may not discuss every detail of how a user pressing a key triggers the RCX to show the selected difficulty level, we find that a person of ordinary skill in the art would understand from this disclosure that the Brick Simon includes "control actuators" according to claim 4. Pet. 25–29; Pet. Reply 14; Ex. 1017, 10–13; Ex. 1036 ¶¶ 54–55. We are persuaded that Petitioner has demonstrated by a preponderance of the evidence that Philo anticipates claim 4.

5. Claim 5

In asserting that Philo anticipates claim 5, Petitioner asserts that Philo discloses structures that a user can grasp, "such as, for example, the body, lid, or prop stand of the Simon game replica, or the roof frame of the rack & pinion steering car." Pet. 29. As noted in Section II.A.4 above, we conclude that claim 5 requires a hand grip section that is designed to be grasped during play activity, not merely structure that can be grasped. Petitioner does not persuade us that Philo discloses a hand grip section that is designed to be grasped during play activity. Accordingly, Petitioner does not demonstrate by a preponderance of the evidence that Philo anticipates claim 5.

6. Claims 6 and 8.

Petitioner explains how it believes Philo anticipates claims 6 and 8, citing to record evidence. Pet. 29–31. Patent Owner asserts that Philo does not anticipate claims 6 and 8 because "[c]laims 6 and 8 depend from Claim 1, and thus are not anticipated by Philo for lacking 'manipulating,' and 'a

main casing configured to conformably fit around a portion of the exterior surface of and thereby receive the housing of the controller.'" PO Resp. 23. As explained in Section II.B.2 above, we find Petitioner's arguments on these issues more persuasive than Patent Owner's. Petitioner has demonstrated by a preponderance of the evidence that Philo anticipates claims 6 and 8.

C. Alleged Obviousness over Philo and Building Robots

Petitioner asserts that claim 7 would have been obvious in view of Philo and Building Robots. Pet. 31. Petitioner notes that Building Robots discloses an infrared communication link between a personal computer and the RCX (which is disclosed in Philo and Building Robots). *Id.* Petitioner asserts that:

> Although neither *Building Robots* nor *Philo* appear to expressly disclose a cellular phone operationally responsive to user-entered commands that are delivered to the control section, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide a communication link between the control section of the RCX and a cellular telephone to allow users to interact with the by a more portable device than a personal computer.

Id.

Patent Owner argues that Petitioner has not shown adequately that it would have been obvious to use a cellular telephone, in lieu of Building Robots' personal computer, to communicate with the RCX. PO Resp. 24–28. Patent Owner argues that "Petitioner failed to provide at least (1) analysis or evidence for supplying the missing limitation—the cellular telephone, (2) the background knowledge possessed by a person having

ordinary skill in the art at the time of the invention, and (3) motivation to combine teachings." *Id.* at 25.

Patent Owner notes that neither Philo nor Building Robots discloses using a cellular telephone. *Id.* at 24. Patent Owner contends that using a cellular telephone in lieu of Building Robots' personal computer would not have been straightforward because cellular communication is much more involved and expensive than the infrared communication disclosed by Building Robots. *Id.* at 26 (citing Ex. 2026 ¶ 62). Patent Owner further argues that Petitioner provided no explanation or support regarding why a person of ordinary skill in the art would have thought it obvious to substitute more complicated cellular communication for the infrared communication disclosed by Building Robots. *Id.*

Downplaying the importance of the cellular telephone in the disclosure of the '066 patent, Petitioner responds that cellular telephones and infrared communication with cellular telephones were common knowledge. Pet. Reply 17–19 (citing Ex. 1036 ¶¶ 59, 61–67; Ex. 1041; Ex. 1042; Ex. 1043). In connection with this argument, Petitioner supplied, for the first time with its Reply, references directed to showing knowledge of cellular telephones using infrared communication—U.S. Patent No. 5,508,836 (Ex. 1042, hereafter "the '836 patent") and an Internet Archive capture of Engadget, "Treo 650 is Official!" (Ex. 1043, hereafter "Treo 650").

In light of the arguments and evidence presented by Patent Owner, the evidence and reasoning originally submitted with the Petition does not show adequately that it would have been obvious to replace Building Robots' infrared communication by a personal computer with a cellular telephone. In view of Patent Owner's evidence that cellular communication involves

complexity and expense beyond infrared communication, Petitioner's relatively conclusory reasoning presented in the Petition does not suffice to demonstrate obviousness of the substitution proposed by Petitioner. The Petition does not allege, much less show, that using infrared communication with cellular telephones was known. *See* Pet. 31. Given the Petition's failure to even suggest such knowledge in the art, we find that Petitioner's attempt to assert such knowledge after Patent Owner's Response does not afford Patent Owner a fair opportunity to respond. Accordingly, Petitioner's assertions that infrared communication with cellular telephones was known will not be considered on the merits. Consequently, we are not persuaded that Petitioner has demonstrated by a preponderance of the evidence that claim 7 would have been obvious over Philo and Building Robots.

D. Alleged Anticipation by Anderson

1. Overview of Anderson

Anderson discloses a system that allows rendering a virtual model by assembling a physical model from construction elements that can identify

themselves. Ex. 1020, [57]. Anderson discloses an embodiment of its system in Figure 1, reproduced below.

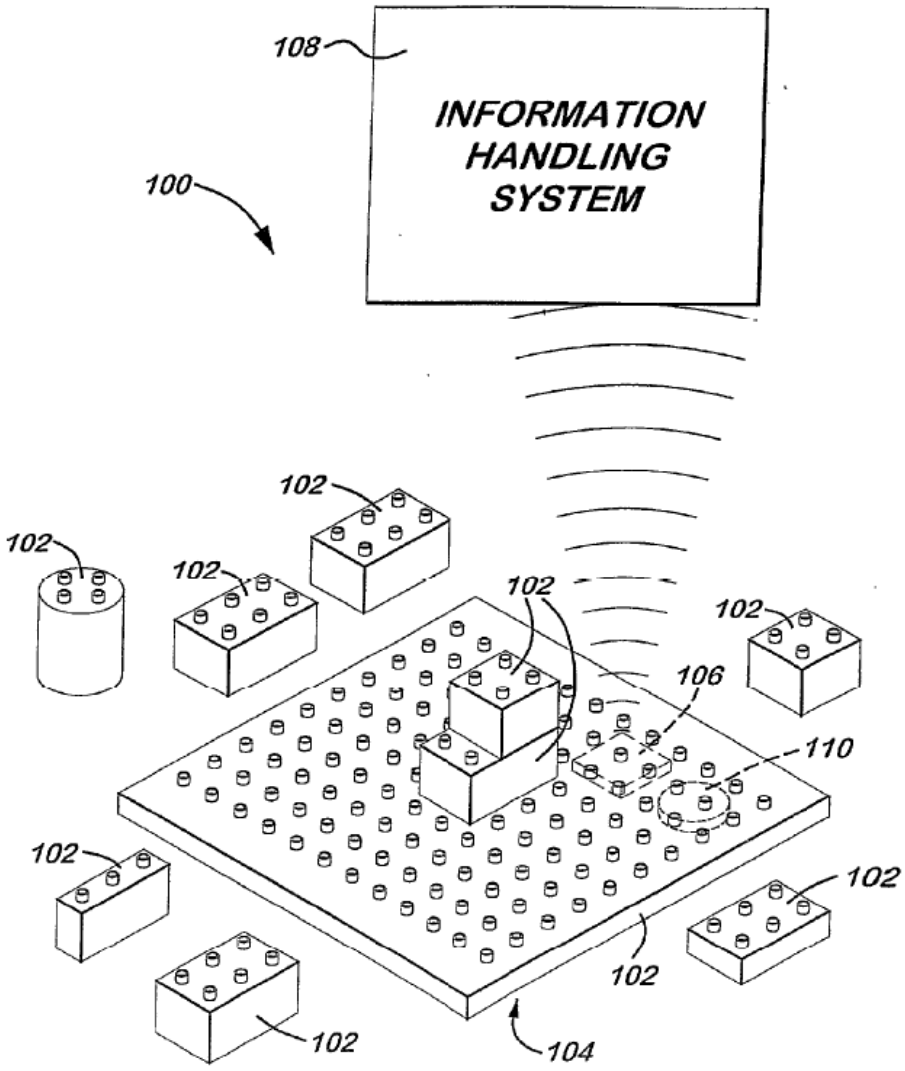

FIG. 1

Anderson's Figure 1 shows system 100, which includes, construction elements 102, assembled together to form physical model 104. *Id.* at ¶ 19. System 100 includes controller 106 "disposed within at least one construction element 102." *Id.* at ¶ 19.

2. Discussion

Petitioner asserts that Anderson anticipates each of claims 1–4, 6, and 8, citing to record evidence. Pet. 39–44. With respect to the "controller having a housing" recited in independent claim 1, Petitioner cites Anderson's controller 106. Pet. 40. With respect to the claimed "a main casing configured to conformably fit around a portion of the exterior surface of and thereby receive the housing of the controller," Petitioner asserts that "Anderson discloses a main casing 102 that fits around controller 106 (as shown in Figs. 1 and 2)." *Id.*

Patent Owner argues that Petitioner has not demonstrated that "its putative main casing 102 conformably fits around a portion of the exterior surface of the housing of controller 106." PO Resp. 29. Noting that Petitioner cites Figures 1 and 2 of Anderson, Patent Owner argues that these Figures do not disclose the spatial relationship between controller 106 and "Petitioner's putative main casing 102." *Id.* at 29. Instead, Patent Owner argues, "Anderson simply discloses that controller 106 is disposed within a construction element 102." *Id.* at 30 (citing Ex. 1020 ¶ 6). Accordingly, Patent Owner argues that Anderson does not disclose that construction element 102 is configured to conformably fit controller 106. *Id.* (citing Ex. 2026 ¶ 69).

In its Reply, Petitioner points to Anderson's Figures 4 and 6. Pet. Reply 24–27. Petitioner asserts that "Anderson's FIG. 4 and corresponding discussion expands on corresponding elements of FIG. 1." *Id.* at 24. Petitioner further asserts that "Anderson explicitly identifies FIG. 6 as being related to FIG. 4," such that "one of ordinary skill in the art would understand Anderson's FIG. 6 to illustrate how memory devices or

controllers are disposed within Anderson's construction elements in general." *Id.* at 25–26 (citing Ex. 1036 ¶ 76). Petitioner further asserts that Anderson's Figures 4 and 6 disclose a casing configured to "conformably fit" around a portion of a housing of a controller. *Id.* at 24–25 (citing Ex. 1036 ¶¶ 74–75).

In light of Patent Owner's arguments, we are not persuaded that Petitioner has demonstrated by a preponderance of the evidence that Anderson discloses "a main casing configured to conformably fit around a portion of the exterior surface of . . . the housing of the controller." We first consider the cited disclosures of Anderson related to Figures 1 and 2. We agree with Patent Owner that it is not clear from Figures 1 and 2 of Anderson that construction element 102 conformably fits around a portion of controller 106. Regarding the spatial relationship between construction element 102 and controller 106, Anderson discloses that "[a] controller 106 is disposed within at least one construction element 102 to be assembled into the physical model 104." Ex. 1020 ¶ 20. This tells us only that controller 106 is inside construction element 102; it discloses nothing about how construction element 102 fits around controller 106. Accordingly, the Petition's reliance on Figures 1 and 2 does not suffice to demonstrate anticipation by a preponderance of the evidence.

We next consider Petitioner's reliance in its Reply on Figures 4 and 6. Because the Petition relied only on Figures 1 and 2 as disclosing the casing configured to "conformably fit" (*See* Pet. 40–41), we consider Petitioner's assertions regarding the relationship of Figures 4 and 6 to Figures 1 and 2. As noted above, Petitioner asserts that "Anderson's FIG. 4 and corresponding discussion expands on corresponding elements of FIG. 1."

Pet. Reply 24. Petitioner cites no evidence to support this assertion. *See id.* Regarding Figure 4, Anderson discloses that it shows a system in accordance with an embodiment, and that it may be used to assemble a physical model as described in the discussion of Figures 1 through 3. Ex. 1020 ¶ 37. This discloses that, like the elements shown in Figures 1 through 3, the elements shown in Figure 4 may be used to assemble a physical model. Contrary to Petitioner's conclusory suggestion, however, it does not disclose that the discussion of Figure 4 further explains the construction of the elements in Figures 1 and 2. Accordingly, we are not persuaded that Anderson's disclosures regarding Figure 4 demonstrate that Figures 1 and 2 disclose a casing configured to "conformably fit" around controller 106. Regarding Anderson's Figure 6, Petitioner provides no link between Figure 6 and Figures 1 and 2 other than through Figure 4. *See* Pet. Reply 25–26.

In sum, the Petition relies on the embodiment shown in Figures 1 and 2 of Anderson as anticipating independent claim 1, and Petitioner's Reply resorts to Figures 4 and 6 without persuasive reasoning or evidence that Figures 1 and 2 employ the disclosed element constructions of Figures 4 and 6. Accordingly, Petitioner does not demonstrate by a preponderance of the evidence that the disclosure cited in the Petition anticipates independent claim 1. To the extent Anderson's disclosures in Figures 4 and 6 may anticipate independent claim 1, we find that Petitioner's resort to these disclosures after Patent Owner's Response does not afford Patent Owner a fair opportunity to respond. Accordingly, Petitioner's assertions that Anderson's Figures 4 and 6 disclose a casing configured to "conformably fit" a controller housing will not be considered on the merits.

Consequently, Petitioner has not demonstrated by a preponderance of the evidence that Anderson anticipates claim 1. Additionally, Petitioner has not demonstrated anticipation of claims 2–4, 6, and 8, as Petitioner's assertions regarding these claims do not cure the foregoing deficiencies in Petitioner's assertion that Anderson anticipates independent claim 1.

III. CONCLUSION

For the reasons expressed above, we determine that Petitioner has shown by a preponderance of the evidence anticipation of claims 1, 4, 6, and 8 by Philo.

Additionally, for the reasons expressed above, we determine that Petitioner has not shown by a preponderance of the evidence:

Anticipation of claims 2, 3, and 5 by Philo;

Obviousness of claim 7 over Philo and Building Robots; and

Anticipation of claims 1–4, 6, and 8 by Anderson.

IV. ORDERS

After due consideration of the record before us, it is:

ORDERED that claims 1, 4, 6, and 8 of the '066 patent have been shown to be *unpatentable*; and

FURTHER ORDERED that claims 2, 3, 5, and 7 of the '066 patent have *not* been shown to be *unpatentable*; and

FURTHER ORDERED that because this is a Final Written Decision, 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.

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