

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MAZE INNOVATIONS, INC.,
Petitioner,

v.

THE GREEN PET SHOP ENTERPRISES, LLC,
Patent Owner.

Case IPR2016-00117
Patent 8,720,218 B2

Before HYUN J. JUNG, SCOTT A. DANIELS, and
MITCHELL G. WEATHERLY, *Administrative Patent Judges*.

JUNG, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

Maze Innovations, Inc. (“Petitioner”) filed a Petition (Paper 1, “Pet.”), requesting institution of an *inter partes* review of claims 15, 16, 18, and 19 of U.S. Patent No. 8,720,218 B2 (Ex. 1001, “the ’218 patent”). The Green Pet Shop Enterprises, LLC (“Patent Owner”) timely filed a Preliminary Response (Paper 6, “Prelim. Resp.”). We have jurisdiction under 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.”

We determine that the information in the Petition does not demonstrate a reasonable likelihood that Petitioner would prevail with respect to claims 15, 16, 18, and 19 of the ’218 patent. Accordingly, we do not institute an *inter partes* review of those claims for the reasons that follow.

A. *Related Proceeding*

The parties indicate that the ’218 patent is involved in *Green Pet Shop Enterprises, LLC v. Maze Innovations, Inc.*, Case No. 15-cv-01138 (N.D. Ill.). Pet. 3; *see also* Paper 5, 2.

B. The '218 Patent (Ex. 1001)

The '218 patent relates to “cooling platforms for animals.” Ex. 1001, 1:7–8. Figure 3 of the '218 patent is reproduced below.

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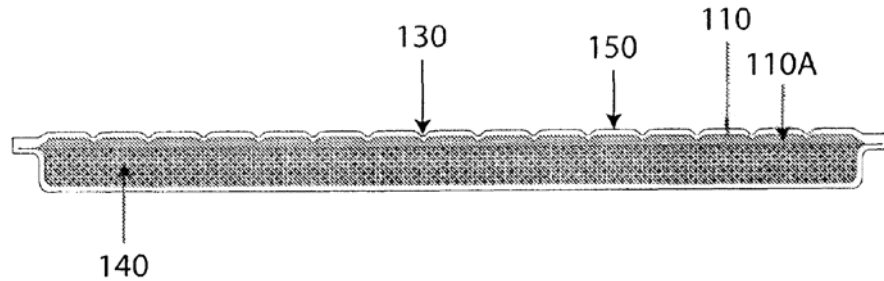


Fig. 3

Figure 3 is a cross-sectional view of a cooling platform. *Id.* at 1:38–39. Cooling platform 100 is comprised of temperature regulation layer 110, support layer 140, and channeled covering layer 150. *Id.* at 2:13–16.

Temperature regulation layer 110 is adapted to hold composition 110A. *Id.* at 2:18–20. Composition 110A “serves to control the temperature of the cooling platform 100” and “can encompass a variety of cooling and heating compounds.” *Id.* at 3:7–12. In an embodiment, composition 110 “can be activated by pressure, wherein the pressure . . . activates the composition 110A, triggering an endothermic process and subsequent cooling” and “[u]pon the release of that pressure, . . . undergoes a subsequent recharge, essentially the reverse of the initial reaction.” *Id.* at 3:17–23. Composition 110A of this embodiment can include water and polyacrylamide. *Id.* at 3:25–28.

C. Illustrative Claim

Each of the challenged claims is independent, and claim 15 is reproduced below:

15. A cooling platform for cooling an object, the platform comprising:

a temperature regulation layer, the temperature regulation layer having an angled segment formed by a top side and a bottom side at a predefined distance, and channels, wherein the channels form sides by contacting the top side with the bottom side; and

a pressure activated recharging cooling composition within the temperature regulation layer, the pressure activated recharging cooling composition endothermically activated and endothermically deactivated upon the application and release of pressure, respectively.

D. Challenges

Reference[s]	Basis	Claims challenged
Fan ¹	§102	15, 16, 18, and 19
Fan	§103	15, 16, 18, and 19
Xiong ²	§102	15 and 16
Fan and Xiong	§103	15, 16, 18, and 19

II. ANALYSIS

A. Claim Construction

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b);

¹ CN 101305877 B, published Dec. 28, 2008 (Ex. 1003).

² Xiong, U.S. Patent No. 7,324,340 B2, iss. Jan. 29, 2008 (Ex. 1004).

Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,766; *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1275–79 (Fed. Cir. 2015), *cert. granted sub nom. Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 890 (mem.) (2016). Claim terms are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

Petitioner submits that the broadest reasonable interpretation of “pressure” in the context of the ’218 patent is “contact.” Pet. 19. Petitioner cites portions of the ’218 patent that state “composition 110A can be activated by pressure, wherein the pressure of a[n] object sitting on the cooling platform 100 . . . activates the composition 110A,” that “composition 110A is able to recharge after alleviation of pressure,” that an “object contacts the channeled covering layer 150 exerting pressure over the cooling platform,” and that a “predefined distance . . . essentially prevents the dispersion of the composition 110A from the pressure the object exerts on the cooling platform 100.” Pet. 17–18 (citing Ex. 1001, 3:17–20, 4:43–45, 5:13–14, 5:23–27). Petitioner also asserts that the ’218 patent does not define or require a magnitude or range of pressure. Pet. 18. Petitioner contends that only “some amount of contact is required to activate and deactivate the recharging cooling composition” and that “moving of an object to recharge the composition shows that the composition recharges after there is no longer *contact*.” *Id.* Petitioner further contends that the “[t]he broadest reasonable interpretation must encompass the ’218 Patent’s use of ‘pressure’ as a synonym for ‘contact.’” *Id.* at 19. Petitioner also argues that a narrower interpretation would result in “claims that recite a

physical impossibility, as there are no viable, known compositions . . . that undergo a reversible endothermic reaction upon the application of a certain amount of pressure.” *Id.*

Patent Owner responds that “pressure” and “contact” are not used as synonyms in the ’218 patent and instead “pressure” is used “in a manner consistent with its ordinary meaning, which is application of force over an area.” Prelim. Resp. 6. Patent Owner refers to portions of the ’218 patent that state an “object contacts the channeled covering layer 150 exerting pressure over the cooling platform,” that “the pressure of a[n] object sitting on the cooling platform 100 activates the composition 110A,” that “[u]pon the release of that pressure, the composition 110 undergoes a subsequent recharge,” and that a “predefined distance . . . essentially prevents the dispersion of the composition 110A from the pressure the object exerts on the cooling platform 100.” *Id.* at 6–8 (citing Ex. 1001, 3:17–25, 4:42–49, 5:19–27). Based on these citations, Patent Owner argues that “pressure” and “contact” in the same sentence have different meanings, that “pressure” is not used to mean contact, that “contact” cannot replace “pressure,” and that pressure is described as being exerted, which “contact” cannot do. *Id.* at 6–8.

Patent Owner’s arguments are persuasive. Considering the cited portions of the disclosure of the ’218 patent and the disclosure as a whole, the ’218 patent states that “pressure” is exerted after an object contacts layer 150 (*see* Ex. 1001, 4:43–45 (“object contacts the channeled covering layer 150 exerting pressure over the cooling platform”)) and that pressure is exerted on cooling platform 100 (*see id.* at 5:26–27 (“the pressure the object exerts on the cooling platform 100”)). Patent Owner persuades us that the

'218 patent indicates that “pressure” is more than mere contact and is not a synonym for “contact,” as urged by Petitioner. Moreover, without citation to some evidence, for example, in the form of an expert declaration, we are not persuaded by Petitioner’s contention that “there are no viable, known compositions . . . that undergo a reversible endothermic reaction upon the application of a certain amount of pressure” (Pet. 19).

In view of the foregoing, we apply the ordinary and customary meaning of “pressure,” as it would be understood by one of ordinary skill in the art in the context of the '218 patent’s disclosure for the purposes of this Decision. We find that an ordinary and customary meaning of pressure is “force per unit area.” Gordon J. Van Wylen & Richard E. Sonntag, *Fundamentals of Classical Thermodynamics*, § 2.7 (3d ed. 1986) (Ex. 3001).

Petitioner also proposes constructions for “pressure activated recharging cooling composition,” “endothermically activated and endothermically deactivated,” and “channel.” Pet. 19–23. Petitioner’s contentions for “pressure activated recharging cooling composition” do not provide additional clarity for the terms “pressure” or “pressure activated.” *See id.* at 19–20. For the purposes of this Decision, explicit constructions of these or any other claim terms are not necessary.

B. Anticipation of Claims 15, 16, 18, and 19 by Fan

Petitioner contends that claims 15, 16, 18, and 19 are anticipated by Fan with citations to Fan. Pet. 5, 23–38.

1. *Fan (Ex. 1003)*

Fan relates to a gel pad and its production method. Ex. 1003, Abstract.³ Figure 2 of Fan is reproduced below.

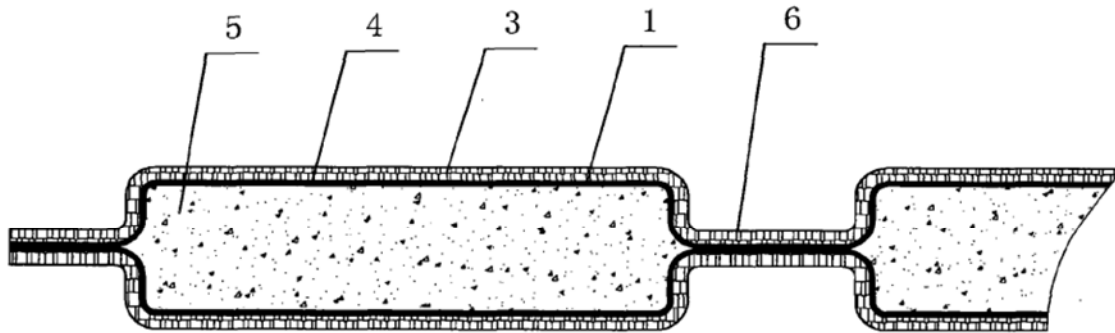


图 2

Figure 2 is a sectional view of a gel pad. *Id.* ¶ 14. Fan represents that it “aims to overcome the disadvantages of existing products by providing a gel pad . . . which is low-cost, convenient and reliable and not prone to being pierced through or squeezed.” *Id.* ¶ 3.

The gel pad comprises an enclosed pouch made from two flakes 1 and gel 5. *Id.* Abstract, ¶¶ 4, 16. One of the steps of producing the gel pad is filling the pouch with a monomeric solution produced from “water, monomer(s), a cross-linking agent, a polymerization initiator as well as pigment and/or condiment.” *Id.* ¶ 20. The monomer can be “monomer(s) used for making highly absorbent polyacrylamide materials.” *Id.* ¶ 21.

2. *Claims 15, 16, 18, and 19*

Petitioner argues that Fan discloses the elements of claim 15. Pet. 26–33 (citing Ex. 1003 Abstract, ¶¶ 2, 3, 8, 9, 11, 16, 20, 21, Figs. 1, 2;

³ Citations herein to Fan refer to paragraph numbers in Petitioner’s translation of Fan at pages 12–17 of Exhibit 1003.

Ex. 1012, 5–8). In particular, for a “pressure activated recharging cooling composition,” Petitioner asserts that “[w]hen a warm object contacts the gel pad in Fan, . . . the gel becomes endothermic” and “once the object is no longer contacting the pad in Fan, it will release the heat back to the room.” *Id.* at 32 (citing Ex. 1003, Abstract, ¶ 11). Petitioner, thus, argues that “Fan discloses that its cooling composition is activated when a warm object *contacts* the pad and deactivated when the warm object *loses contact* with the pad.” *Id.* at 32–33. In addition, Petitioner argues “Fan discloses that the object resting on its gel pad is applying a non-zero force equal to the weight of the object” and thus “discloses that it is the pressure of the object on the gel pad that activates the transfer of heat to the gel, and the lack of pressure that activates the transfer of heat out of the gel.” *Id.* at 33 (citing Ex. 1003 ¶¶ 2–3).

With reference to its arguments for claim 15 and citations to Fan, Petitioner argues that Fan discloses claim 16. Pet. 34–37 (citing Ex. 1003 Abstract, ¶¶ 7–9, 11, 16, 20–21, Figs. 1, 2). Referring to arguments for claims 15 and 16 and citations to Fan, Petitioner also argues that Fan discloses claims 18 and 19. Pet. 37–38 (citing Ex. 1003 Abstract, ¶¶ 7–9, 11, 16, 20, 21, Figs. 1–2). For the “pressure activated recharging cooling composition” of claims 16, 18, and 19, Petitioner does not provide additional arguments regarding pressure. *See* Pet. 37–38.

Patent Owner responds that “[t]here is no disclosure in Fan that . . . the gel is ‘pressure activated.’” Prelim. Resp. 18. Patent Owner further contends that “the disclosure in Fan regarding the ability of the pad to withstand pressure . . . merely describe[s] the structural strength of the pad.” *Id.* (citing Pet. 33). Patent Owner asserts that there “is no evidentiary

support for Petitioner’s conclusory statement that ‘Fan discloses that it is the pressure of the object on the gel pad that activates the transfer of heat to the gel, and the lack of pressure that activates the transfer of heat out of the gel.’” *Id.* (citing Pet. 33).

We agree with Patent Owner. Petitioner cites to Fan’s description that previous water pouches may be “pierced through by sharp objects, and excessive pressure will cause the water pad to burst” and that Fan provides a gel pad “not prone to being pierced through or squeezed.” See Pet. 24, 33 (citing Ex. 1003 ¶¶ 2–3). The cited portions of Fan indicate that Fan’s gel pad can withstand excessive pressure, but Petitioner provides insufficient argument and evidence that Fan’s ability to withstand excessive pressure also discloses a pressure activated cooling composition as recited by the challenged claims. Petitioner’s argument that Fan discloses a compound that is endothermic when in contact and exothermic when not in contact is not persuasive, when pressure is given its ordinary and customary meaning. Also, without other evidence regarding Fan’s disclosure beyond its resistance to being pierced or burst, we are not persuaded that Fan discloses that application and release of pressure by an object on its gel pad activates and deactivates, respectively, its cooling composition, as required by the challenged claims. While Fan states that its “gel has a water content of about 70% and hence a high heat absorption capacity” (Ex. 1003, Abstract, ¶ 11), we cannot find, nor does Petitioner provide, any indication in Fan of how that heat absorption capacity is activated or deactivated.

Therefore, we determine that Petitioner has failed to establish a reasonable likelihood that it would prevail with respect to its challenge of claims 15, 16, 18, and 19 of the ’218 patent as anticipated by Fan.

C. Obviousness of Claims 15, 16, 18, and 19 over Fan

Petitioner contends that Fan renders obvious claims 15, 16, 18, and 19 with citations to Fan. Pet. 5, 38–49. Petitioner asserts that Fan discloses “an identical cooling platform product with an identical structural configuration filled with the same composition as is recited in the claims of the ’218 Patent.” Pet. 38. Petitioner states that it presents this challenge: “(1) to further address the only differences [Patent Owner] has ever alleged between the claims and Fan, (2) in the event [Patent Owner] presents an unexpected claim construction argument, and (3) in the event [Patent Owner] attempts to present further distinctions between Fan and the claims.” *Id.* at 39.

Petitioner argues that Fan discloses claim 15. Pet. 39–44 (citing Ex. 1003, Abstract, ¶¶ 2, 3, 8, 9, 11, 16, 20, 21, Fig. 2). Specifically, Petitioner contends that, under its proposed interpretation of pressure, “Fan discloses that its cooling composition is activated when a warm object *contacts* the pad and deactivated when the warm object *loses contact* with the pad.” Pet. 43 (citing Ex. 1003, Abstract, ¶¶ 8, 9, 11, 16, 20, 21). Petitioner also argues that Fan discloses a non-zero force or weight of an object on the gel pad activating and deactivating the gel. *Id.* at 44 (citing Ex. 1003 ¶¶ 2–3). Citing arguments for claim 15, Petitioner contends that Fan also renders obvious claim 16. Pet. 45–48 (citing Ex. 1003, Abstract, ¶¶ 7, 8, 9, 11, 16, 20, 21, Figs. 1, 2). Relying on arguments for claims 15 and 16, Petitioner argues that Fan renders obvious claims 18 and 19. *Id.* at 48–49 (citing Ex. 1003 ¶¶ 20, 21). The additional arguments for claims 16, 18, and 19 do not add substantively to previous arguments regarding the “pressure activated recharging cooling composition.” *Id.* at 48–49.

Petitioner relies on its proposed interpretation of pressure as contact in its assertions regarding the pressure activated recharging cooling composition of claims 15, 16, 18, and 19. Pet 43, 48–49. For the reasons stated above, we are not persuaded that Fan discloses a pressure activated cooling composition in accordance with the ordinary and customary meaning of pressure as it would be understood by one of ordinary skill in the art in the context of the '218 patent's disclosure. Also, Petitioner cites to the same portion of Fan regarding its resistance to being pierced or burst that, without more, does not persuade us that Fan discloses application and release of pressure on its gel pad activates and deactivates, respectively, its cooling composition, as recited by the challenged claims.

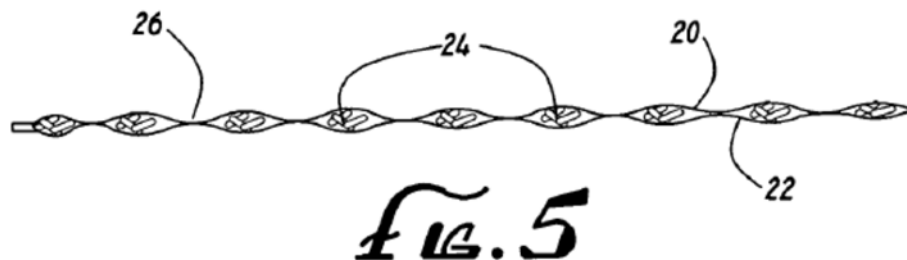
We, thus, determine that Petitioner has failed to establish a reasonable likelihood that it would prevail with respect to its challenge that Fan renders obvious claims 15, 16, 18, and 19 of the '218 patent.

D. Anticipation of Claims 15 and 16 by Xiong

Petitioner argues that Xiong anticipates claims 15 and 16 with citations to Xiong. Pet. 5, 49–57.

1. Xiong (Ex. 1004)

Xiong relates to “a cooling pad for laptop-style portable computers and the like.” Ex. 1004, 1:7–10. Figures 5 and 8 of Xiong are reproduced below.



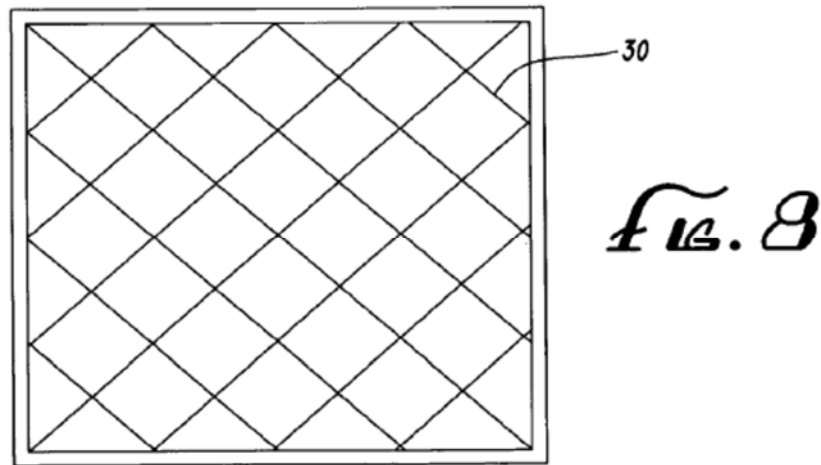


Figure 5 is a section view of a cooling pad, and Figure 8 is a plan view of an alternative embodiment. *Id.* at 3:37–38, 3:44–45. Cooling pad 10 includes top portion 12 with upper layer 20 and bottom layer 22. *Id.* at 3:57–60, 4:4–9. Between layers 20, 22 are pellets 24 of a phase change material. *Id.* at 4:11–12. Press seal means 26 bring together layers 20, 22 to subdivide top portion 12 into pockets. *Id.* at 4:15–17. Stitching pattern 30 can form closed pockets that prevent shifting of pellets 24 between pockets. *Id.* at 4:23–25.

2. Claims 15 and 16

Petitioner states that the “only alleged deficiency [Patent Owner] identified in the district court case is that Xiong does not disclose ‘a pressure activated cooling composition.’” Pet. 52 (citing Ex. 1010, 8). Petitioner asserts that Xiong discloses all the limitations of claims 15 and 16. Pet. 49–57 (citing Ex. 1004 Abstract, 1:7–10, 2:40–57, 3:1–12, 3:57–58, 4:3–9, 4:15–25, 4:28–36, 4:38–45, 4:50–56, Figs. 6–8).

For the “pressure activated cooling composition,” Petitioner argues that “Xiong discloses that upon contact with a hot object, the [phase change

material] becomes endothermic” and when “*contact* (i.e., pressure) is eliminated, the material *becomes exothermic* . . . the [phase change material] solidifies.” Pet. 53–54 (citing Ex. 1004, 4:28–36, 4:38–45, 4:50–57).

Petitioner also argues that “Xiong discloses that the pressure of the laptop activates the [phase change material], and the lack of pressure . . .

deactivates the [phase change material].” *Id.* at 54 (citing Ex. 1004, 4:28–34).

Patent Owner responds that Xiong does not disclose “a pressure activated recharging cooling composition” because “Xiong discloses that heat is conducted into the cooling pad and when the heat is received by the pellets 24, the pellets undergo a ‘phase change process’” and “does not disclose that ‘pressure’ provides any ‘activation.’” Prelim. Resp. 24–25 (citing Ex. 1004, 4:38–43).

Patent Owner’s arguments are persuasive. For the reasons stated above, we give pressure its ordinary and customary meaning. Petitioner’s arguments relying on pressure being mere contact, therefore, are not persuasive. Also, Xiong describes “pellets 24 of a phase change material (PCM) such as sodium sulfate decahydrate, sodium carbonate decahydrate, disodium phosphate dodecahydrate, sodium thiosulfate pentahydrate or equivalent” (Ex. 1004, 4:12–15) and states that “[a]s heat transfers into the pellets 24 they will begin and eventually complete the phase change process” (*id.* at 4:38–39). Xiong does not address how pressure affects its pellets 24, and instead indicates a temperature difference causing heat transfer begins the phase change process of its pellets 24 (*id.* at 4:38–39). Petitioner provides insufficient evidence that Xiong discloses that the

application and release of pressure activates and deactivates, respectively, its phase change material pellets, as recited by the challenged claims.

Accordingly, we determine that Petitioner has failed to establish a reasonable likelihood that it would prevail with respect to its challenge of claims 15 and 16 of the '218 patent as anticipated by Xiong.

E. Obviousness of Claims 15, 16, 18, and 19 over Xiong and Fan

For claims 15 and 16, Petitioner argues that combining Fan and Xiong results in the gel of Fan containing polyacrylamide and water being used in the cooling pad of Xiong and that the gel of Fan teaches or suggests the required “pressure activated recharging cooling composition.” Pet. 58–59 (citing Ex. 1003, Abstract, ¶¶ 8, 9, 11, 16, 20, 21). For claims 18 and 19, Petitioner argues that Fan teaches or suggests all their limitations and that Xiong teaches or suggests the temperature regulation layer. Pet. 59–60 (citing Ex. 1003, Abstract, ¶¶ 8, 9, 11, 16, 20, 21; Ex. 1004, 3:1–12, 4:3–9, 4:15–19, 4:20–25, Figs. 6–8). Petitioner also argues the combination of Fan and Xiong would result in Fan’s gel being used in the cooling pad of Xiong. *Id.* at 60.

Petitioner asserts that “it would be well within the grasp of a person of ordinary skill in the art . . . to look to Xiong, which teaches a ‘pad 10 [that] does not require electrical power to operate, and will effectively and efficiently reduce the operating temperature inside a micro computer’s housing.’” Pet. 58 (citing Ex. 1004, 4:52–56). Petitioner also argues that a person of ordinary skill would have been motivated to combine Xiong and Fan because both disclose cooling platforms and thus, it would have been obvious to try to use Fan and Xiong together to create improved cooling pads. Pet. 57 (citing Ex. 1003, Abstract; Ex. 1004, Abstract, 3:8–12, 4:15–

16, 4;20–25, Figs. 6–8). Petitioner further contends that “Fan’s and Xiong’s express disclosure of the advantages and necessity of having ‘channels’ . . . constitutes a teaching, suggestion, or motivation to combine Fan with Xiong, since both described similar solutions to the same problem[s].” *Id.* at 58.

Petitioner asserts that one of ordinary skill would have understood that “both Fan and Xiong teach cooling an object with a cooling composition encased within an outer layer of the cooling pad” and recognized that “the incorporation of Xiong’s channels into Fan’s gel pad would predictably result in an improved cooling platform.” *Id.* at 57–58.

Patent Owner responds that neither Xiong nor Fan teach or suggest “a pressure activated recharging cooling composition” with reference to its previous arguments. Prelim. Resp. 27. Patent Owner also argues that there is no evidence that Xiong and Fan provide an improved cooling platform, no evidence regarding the understanding and knowledge of one of skill in the art, and no evidence for the “obvious to try” rationale. *Id.* at 26–27, 28–31.

Patent Owner’s arguments are persuasive. For the reasons stated above, Petitioner does not provide enough evidence that Xiong and Fan teach or suggest a pressure activated recharging cooling composition in accordance with the ordinary and customary meaning of “pressure” as it would be understood by one of ordinary skill in the art in the context of the ’218 patent’s disclosure.

Accordingly, we determine that Petitioner has failed to establish a reasonable likelihood that it would prevail with respect to its challenge that Xiong and Fan render obvious claims 15, 16, 18, and 19 of the ’218 patent.

III. CONCLUSION

For the foregoing reasons, we determine that the information presented in the Petition does not demonstrate that Petitioner is reasonably likely to prevail in demonstrating that claims 15, 16, 18, and 19 of the '218 patent are unpatentable.

IV. ORDER

Accordingly, it is ORDERED that the Petition is *denied* for the reasons discussed, and no trial is instituted.

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