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Paper 13
Entered: January 7, 2022

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ICE CASTLES, LLC,
Petitioner,

v.

JAMES YOUNGSTROM,
Patent Owner.

IPR2021-01179
Patent 10,663,204 B2

Before JAMES A. WORTH, BRENT M. DOUGAL, and ALYSSA A. FINAMORE, *Administrative Patent Judges*.

FINAMORE, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Ice Castles, LLC ("Petitioner") filed a Petition (Paper 1, "Pet.") requesting an *inter partes* review of claims 1–20 U.S. Patent No. 10,663,204 B2 ("the '204 patent") (Ex. 1001). Pet. 4. James Youngstrom ("Patent Owner") filed a Preliminary Response (Paper 5, "Prelim. Resp."), as well as a Disclaimer (Ex. 2009). According to the Disclaimer, Patent Owner disclaimed claims 1, 2, 4–6, 8–12, 15, 16, and 18–20. Ex. 2009, 1.

We authorized additional briefing on the issue of whether the asserted references are available as prior art. Paper 9, 2–3. Petitioner filed a Reply to Patent Owner Preliminary Response (Paper 10), and Patent Owner filed a Waiver of Sur-Reply (Paper 11).

We have authority, acting under the designation of the Director, to determine whether to institute an *inter partes* review. 35 U.S.C. § 314; 37 C.F.R. § 42.4(a). We may not authorize an *inter partes* review to be instituted "unless . . . the information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." 35 U.S.C. § 314(a).

Upon consideration of the arguments and evidence presented by both parties, we determine Petitioner has not demonstrated a reasonable likelihood that it would prevail with respect to at least one of the claims challenged in the Petition. Accordingly, we do not institute an *inter partes* review of the challenged claims of the '204 patent.

II. BACKGROUND

A. Real Parties In Interest

Petitioner identifies itself as a real party in interest. Pet. 5. Patent Owner identifies itself as a real party in interest. Paper 4, 1.

B. Related Matters

Petitioner identifies the following two civil actions as related to, but not involving, the '204 patent: *Ice Castles, LLC v. LaBelle Lake Ice Palace, LLC*, No. 4:18-cv-00571-DCN (D. Idaho filed Dec. 27, 2018) and *Ice Castles, LLC v. Cameron Clan Snack Co., LLC*, 2:21-cv-00154 (D. Me. filed June 14, 2021). Pet. 6. Patent Owner states that it is unaware of any related proceeding regarding the '204 patent. Paper 4, 1.

C. The '204 Patent

The '204 patent "relates to ice structures, and in particular to methods of forming ice structures." Ex. 1001, 1:8–9. A method for creating ice structures includes forming a plurality of ice logs and then joining the ice logs together to build a structure. *Id.* at 1:59–61. An ice log is formed by filling an elongate sleeve with water, freezing the water, and removing the sleeve. *Id.* at 1:62–65. Figure 1, reproduced below, shows two ice logs 4*a*, 4*b*. *Id.* at 5:1–3.

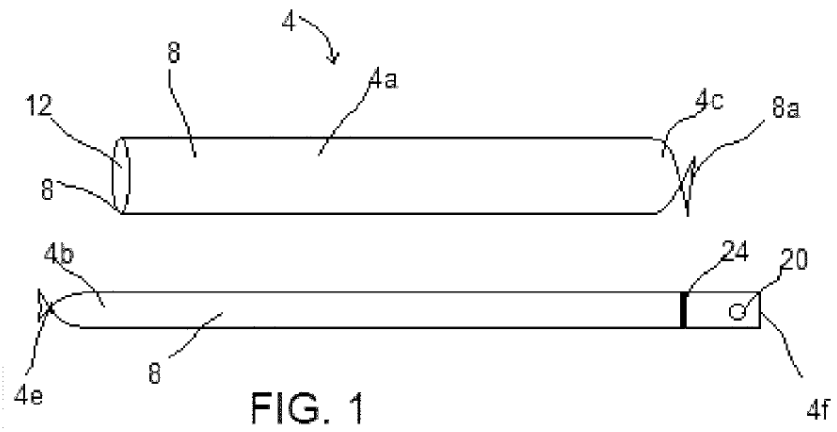


FIG. 1

Figure 1 depicts a pair of sleeves having water contained therein for making ice logs. *Id.* at 2:23–24. Ice log 4 is formed by filling sleeve 8 with water and leaving the filled sleeve at a location with a temperature below 32°F. *Id.* at 5:3–5. Sleeve 8 is formed from a thin, flexible material, such as polyethylene, or a more rigid plastic, such as polyvinyl chloride. *Id.* at 5:8–10, 6:25–27.

As shown in Figure 1, on ice log 4*a*, sleeve 8 includes end 8*a* that is knotted off to form end 4*c* of the ice log. *Id.* at 5:16–18. Ice log 4*a* is cut to a desired length, as shown on the left side, thereby exposing frozen water 12. *Id.* at 5:20–23. On ice log 4*b*, a tie or clamp is used to close sleeve 8 at end 4*e*. *Id.* at 5:18–19. The other end of sleeve 8 is squared off, as shown at end 4*f*. *Id.* at 6:31–32. Sleeve 8 also includes port 20 and retainers 24. *Id.* at 6:27–31.

According to the ’204 patent, “the use of the ice logs . . . allows substantial creativity on the part of the builder of the ice structure.” *Id.* at 8:33–36. Also, “sleeves 8 can be used to make a wide variety of shapes in the ice logs, thereby allowing for a wide variety of designs.” *Id.* at 8:36–38.

Figure 9, reproduced below, shows an ice log designed to be a base or footing for an ice structure. *Id.* at 8:62–63.

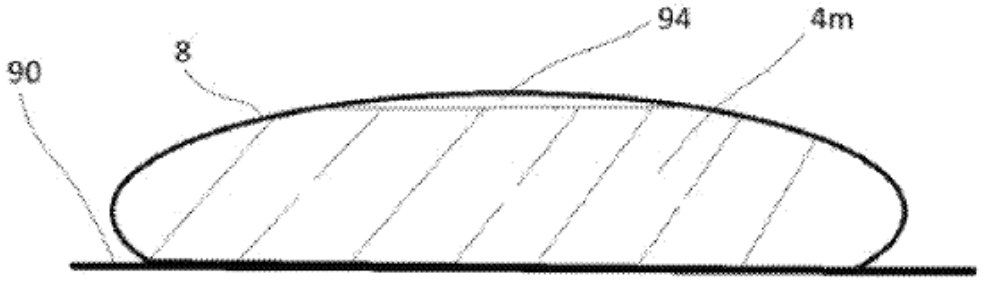


FIG. 9

Figure 9 is a cross-sectional view of a sleeve partially filled with water to form a base. *Id.* at 2:44–45. Ice log 4*m* is formed by filling sleeve 8 partially with water and leaving air pocket 94. *Id.* at 8:63–65, 9:6–7. The partial filling of sleeve 8 results in ice log 4*m* having a flat bottom, and air pocket 94 results in ice log 4*m* having a flat top surface. *Id.* at 9:1–2, 7–8.

The base formed by ice log 4*m* receives a plurality other ice logs 4, as shown in Figure 10, reproduced below. *Id.* at 9:17–23.

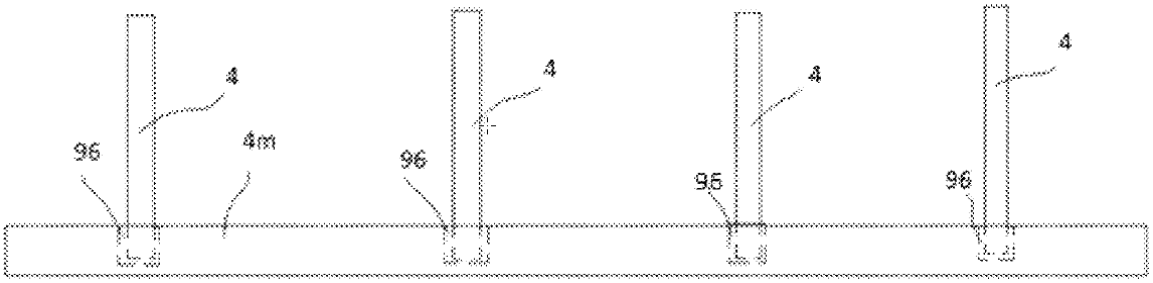


Figure 10 is a side view of a base supporting a plurality vertical ice logs. *Id.* at 2:46–47. As shown in Figure 10, the base formed by ice log 4*m* has one or more pockets or holes 96 cut into it. *Id.* at 9:17–18. Other ice logs 4 are inserted into holes 96, and slush and/or water is poured into holes 96 to freeze and thereby anchor ice logs 4 into ice log 4*m*. *Id.* at 9:21–23.

D. Challenged Claims

Petitioner challenges claims 1–20 of the '204 patent. Pet. 4. Patent Owner has disclaimed claims 1, 2, 4–6, 8–12, 15, 16, and 18–20. Prelim. Resp. 3; Ex. 2009, 1. Consequently, only claims 3, 7, 13, 14, and 17 remain in this proceeding. *See* 37 C.F.R. § 42.107(e) ("No *inter partes* review will be instituted based on disclaimed claims."); *Gunn v. Kopf*, 96 F.3d 1419, 1422 (Fed. Cir. 1996) ("A statutory disclaimer under 35 U.S.C. § 253 has the effect of canceling the claims from the patent and the patent is viewed as though the disclaimed claims had never existed in the patent.").

Claims 3, 7, 13, and 14 depend from independent claim 1, and claim 17 depends from independent claim 15. Ex. 1001, 13:22–24, 39–42, 14:5–16, 28–37. Independent claim 1, reproduced below, is illustrative of the claimed subject matter.

> 1. A method of building an ice structure, the method comprising:
>
> selecting at least one sleeve, the at least one sleeve including a first sleeve which has an initial cross-sectional shape and is sufficiently flexible that the cross-sectional shape of the sleeve changes from the initial cross-sectional shape as the sleeve is filled with water;
>
> filling at least part of the first sleeve with water and freezing the water to make at least one first ice log;
>
> creating at least one second ice log by either at least partially filling a second sleeve with water and freezing the water, or by cutting the at least one first ice log into two or more pieces; and
>
> attaching a plurality of ice logs together to form a structure.

Id. at 13:2–18.

E. Asserted Grounds And References

For the claims remaining in this proceeding in view of Patent Owner's disclaimer, i.e., claims 3, 7, 13, 14, and 17, Petitioner asserts the following five grounds of unpatentability:

Claim(s) Challenged	35 U.S.C. §	Reference(s)
3, 7, 14	102(a)(1)	Instructables[1]
7	102(a)(1), (2)	Christensen[2]
3, 7, 14	103	Instructables, Christensen
13	103	Instructables, DIYNetwork[3]
17	103	Instructables, DIYNetwork, Christensen '042[4]

Pet. 14; Prelim. Resp. 4.

[1] Boomfiziks, *Easy ice sculpture - for kids of all ages*, Instructables (Mar. 5, 2012), https://content.instructables.com/pdfs/ERX/UT9D/GZACJKTJ/Easy-ice-sculpture-for-kids-of-all-ages.pdf (Ex. 1003) and Boomfiziks, *Easy Ice Sculpture – for Kids of All Ages*, Instructables (Mar. 5, 2012), https://www.instructables.com/id/Easy-ice-sculpture-for-kids-of-all-ages/ (Ex. 1004) (collectively "Instructables").

[2] US 10,422,564 B2, issued Sept. 24, 2019 ("Christensen") (Ex. 1005).

[3] *How to Build Custom Deck Railings*, DIY Network, https://www.diynetwork.com/how-to/outdoors/patios-and-decks/how-to-build-custom-deck-railings (last visited June 17, 2021) (Ex. 1008) and *How to Build Custom Deck Railings*, DIY Network, https://www.diynetwork.com/how-to/outdoors/patios-and-decks/how-to-build-custom-deck-railings [https://web.archive.org/web/20150414025315/https://www.diynetwork.com/how-to/outdoors/patios-and-decks/how-to-build-custom-deck-railings] (Ex. 1009) (collectively "DIYNetwork").

[4] US 8,511,042 B2, issued Aug. 20, 2013 ("Christensen '042") (Ex. 1010).

III. ANALYSIS

A. Principles Of Law

1. Anticipation

"Under 35 U.S.C. § 102 a claim is anticipated 'if each and every limitation is found either expressly or inherently in a single prior art reference.'" *King Pharm., Inc. v. Eon Labs, Inc.*, 616 F.3d 1267, 1274 (Fed. Cir. 2010) (quoting *Celeritas Techs. Ltd. v. Rockwell Int'l Corp.*, 150 F.3d 1354, 1360 (Fed. Cir. 1998)). "[A]nticipation by inherent disclosure is appropriate only when the reference discloses prior art that must *necessarily* include the unstated limitation . . . ." *Therasense, Inc. v. Becton, Dickinson & Co.*, 593 F.3d 1325, 1332 (Fed. Cir. 2010) (alternation in original) (quoting *Transclean Corp. v. Bridgewood Servs., Inc.*, 290 F.3d 1364, 1373 (Fed. Cir. 2002)).

> Inherency . . . may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. . . . If, however, the disclosure is sufficient to show that the natural result flowing from the operation as taught would result in the performance of the questioned function, it seems to be well settled that the disclosure should be regarded as sufficient.

In re Oelrich, 666 F.2d 578, 581 (CCPA 1981) (citation omitted).

2. Obviousness

According to 35 U.S.C. § 103, a claim is unpatentable "if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains." The question of obviousness under 35 U.S.C. § 103 is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any

differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of nonobviousness, i.e., secondary considerations[5]. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

An obviousness analysis must include a reason, based upon rational underpinnings, why a person of ordinary skill would have been motivated to modify the prior art to achieve the claimed invention. *See In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016) ("To satisfy its burden of proving obviousness, a petitioner . . . must . . . articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness." (citing *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007))). The requirement of a reason to combine is a safeguard against hindsight bias, which is characterized by the "temptation to read into the prior art the teachings of the invention in issue." *KSR*, 550 U.S. at 421 (quoting *Graham*, 383 U.S. at 36).

B. Level Of Ordinary Skill In The Art

Petitioner argues a person of ordinary skill in the art "would have been familiar with general building techniques and would have been aware of the widespread use of a variety of building techniques for building ice structures." Pet. 6 (citing Exs. 1004, 1011). Petitioner further argues that "a [person of ordinary skill in the art] would not require a degree in engineering or require any sophisticated engineering knowledge" (*id.* at 6–7 (citing Exs. 1004, 1011)), and that "[a]ny person with reasonable mechanical

[5] Neither party has presented evidence or argument directed to secondary considerations.

amplitude and experience with cold weather could be a considered a [person of ordinary skill in the art]" (*id.* at 7 (citing Ex. 1004, comments)). Patent Owner contends a person of ordinary skill in the art "would have been a person who had built structures out of snow or ice, including the building of snow forts, ice castles and the like." Prelim. Resp. 18.

Based on our review of the current record, Petitioner's proposed level of ordinary skill in the art is consistent with level of skill reflected in the '204 patent and the cited references. Furthermore, the parties' proposals for the level of ordinary skill in the art are similar, and we do not discern a meaningful distinction between them. Accordingly, for purposes of this Decision, we adopt Petitioner's proposed level of ordinary art skill in the art.

C. Claim Construction

We interpret a claim "using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b)." 37 C.F.R. § 42.100(b) (2019). Under this standard, we construe the claim "in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent." *Id.* Furthermore, we expressly construe the claims to the extent necessary to determine whether to institute *inter partes* review. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Ltd.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) ("[W]e need only construe terms 'that are in controversy, and only to the extent necessary to resolve the controversy.'" (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

The parties propose constructions of the claims terms "ice log" and "sleeve." Pet. 9; Prelim. Resp. 18–20. Nonetheless, for the reasons set forth in our analysis of the asserted grounds of unpatentability in sections III.D–H, we determine that no claim term requires an express construction for the purpose of determining whether to institute an *inter partes* review.

D. Anticipation By Instructables

Petitioner challenges claims 3, 7, and 14 under 35 U.S.C. § 102(a)(1) as anticipated by Instructables. Pet. 14–17, 20. Patent Owner argues that Petitioner has failed to show Instructables discloses every claim limitation. Prelim. Resp. 8–10, 20–25, 28–30, 35–38. We begin our analysis of this asserted ground of unpatentability with an overview of Instructables. We next discuss the parties' arguments for independent claim 1, from which claims 3, 7, and 14 depend, and then turn to the parties' arguments for claims 3, 7, and 14.

1. Instructables

The Instructables website includes a webpage entitled "Easy Ice Sculpture - for Kids of All Ages," which may be downloaded from the website. *See* Ex. 1004, 1 (showing the webpage title, URL, and "Download" button). Petitioner provides a copy of the webpage (Ex. 1004) and the downloaded webpage (Ex. 1003) and refers to these webpages collectively as "Instructables." *See* Pet. 9 (defining Instructables as Exhibits 1003 and 1004).

Instructables discloses a five-step method for creating ice sculptures Ex. 1003, 1. According to Instructables, "[t]his is an easy and fun activity

for the whole family, especially when the temperatures get[] really cold." *Id.* at 2.

The first step involves getting an assortment of balloons, ranging from traditional balloons to sculpting balloons, i.e., snake balloons, and placing a couple grains of sand into each balloon to act as freezing nuclei for the water. *Id.* at 4. The second step entails setting the balloons outside when it is cold, as shown in the two photographs reproduced below. *Id.*





The first photograph shows filled traditional balloons placed on the ground and on a picnic table. *Id.* The second photograph shows filled snake balloons wrapped around an orange safety cone. *Id.* According to the third step, "[w]hen the balloons are frozen, peel off the balloons from the ice." *Id.* The fourth step involves adding food coloring. *Id.* at 5. The fifth step

involves arranging the pieces of ice in some order, as shown in the photograph reproduced below. *Id.*



In the photograph, ice pieces formed from traditional balloons and snake balloons are arranged together.

2. Independent Claim 1

The preamble of independent claim 1 recites "[a] method of building an ice structure, the method comprising[]." Ex. 1001, 13:2–3. Petitioner argues "Instructables provides steps for building an 'ice castle' which is a type of ice structure." Pet. 15 (citing Ex. 1003, 5[6]).

Independent claim 1 also recites "selecting at least one sleeve, the at least one sleeve including a first sleeve which has an initial cross-sectional shape and is sufficiently flexible that the cross-sectional shape of the sleeve changes from the initial cross-sectional shape as the sleeve is filled with water" ("the selecting limitation"). Ex. 1001, 13:4–10. For the selecting

[6] In support of argument that Instructables discloses building an ice castle, Petitioner cites to page 4 of Exhibit 1003. Exhibit 1003, however, references an ice castle on page 5, not page 4. Accordingly, we consider Petitioner's citation to page 4 to be a typographical error, and we understand Petitioner to be citing to page 5.

limitation, Petitioner argues Instructables discloses selecting balloons to form ice. Pet. 15 (citing Ex. 1003, 4). Petitioner also argues that "[i]t is indisputable that balloons are 'sufficiently flexible' so that their cross-sectional shape will change as they are filled with water," and that "Instructables recommends 'sculpting' the balloons to create a variety of shapes." *Id.* (citing Ex. 1003, 4).

The next limitation of independent claim 1 recites "filling at least part of the first sleeve with water and freezing the water to make at least one first ice log" ("the filling limitation"). Ex. 1001, 13:11–12. For the filling limitation, Petitioner argues "Instructables teaches filling balloons with water and setting the 'balloons outside when it is cold' so that the 'water in the balloons' will freeze." Pet. 15 (citing Ex. 1003, 4).

Independent claim 1 further recites "creating at least one second ice log by either at least partially filling a second sleeve with water and freezing the water, or by cutting the at least one first ice log into two or more pieces" ("the creating limitation"). Ex. 1001, 13:13–16. For the creating limitation, Petitioner reiterates its argument for the filling limitation, i.e., "Instructables teaches filling balloons with water and setting the 'balloons outside when it is cold' so that the 'water in the balloons' will freeze." Pet. 15 (citing Ex. 1003, 4).

The last limitation of independent claim 1 recites "attaching a plurality of ice logs together to form a structure" ("the attaching limitation"). Ex. 1001, 13:17–18. For the attaching limitation, Petitioner argues Instructables discloses that the ice logs formed by freezing water in balloons can be arranged and includes photographs showing ice logs attached together to form an ice castle. Pet. 16 (citing Ex. 1003, 5).

Patent Owner maintains Petitioner has not shown that Instructables discloses the attaching limitation of independent claim 1. Prelim. Resp. 21–23; *see also id.* at 8 ("Patent Owner can find no teaching in [Instructables] for attaching the ice from the sculpting balloons together to form a framework. To the contrary, Instructables seem[s] to suggest that the pieces of ice are not attached to each other as it discusses 'arranging, rearranging, and adding on to their ice sculpture.'" (citing Ex. 1003, 2)). Patent Owner argues the Petition does not explain how arranging ice pieces discloses attaching ice logs together as the attaching limitation requires. *Id.* at 21. Patent Owner also argues it is unclear from the photographs of the ice castles that any of the structures are attached. *Id.* at 22.

We agree with Patent Owner. Although the fifth step of Instructables's five-step method for forming an ice structure is "[a]rrange pieces in some order" (Ex. 1003, 5), Instructables does not expressly disclose attaching together the pieces of ice. Petitioner has not put forth any argument or evidence showing a person of ordinary skill in the art would have understood that Instructables's disclosure of arranging ice pieces means attaching the ice pieces together or that Instructables's photographs of ice castles show pieces of ice attached together.

For these reasons, Petitioner has not shown persuasively, for purposes of institution, that Instructables discloses the attaching limitation of independent claim 1. Although claims 3, 7, and 14 include the subject of independent claim 1 via their dependency therefrom, we nonetheless turn to Petitioner's arguments for claims 3, 7, and 14.

3. Claim 3

Claim 3 recites:

> 3. The method according to claim 1, wherein the first sleeve is filled while lying on the ground so that the first sleeve is substantially horizontal while being filled.

Ex. 1001, 13:22–24. Petitioner maintains "[t]his limitation [of claim 3] is at least inherently taught in Instructables." Pet. 16. Petitioner argues "Instructables teaches that the balloons should be set outside when it is cold and includes a picture . . . showing water-filled balloons on a table and on the ground in 'substantially horizontal' orientations." *Id.* at 16–17 (citing Ex. 1003, 4). Petitioner further argues "[o]ne of skill in the art would understand that the balloons, and particularly the 'snake balloons,' would be filled while in the depicted 'substantially horizontal' orientation." *Id.* at 17 (citing Ex. 1003, 4).

Patent Owner contends that Petitioner has not shown Instructables inherently discloses the limitation of claim 3. Prelim. Resp. 23–25. Specifically, Patent Owner contends:

> There is no indication that the balloons were filled while the "sleeve is substantially horizon[t]al while being filled." Nor is there any teaching, disclosure, or suggestion that the balloons are lying on the ground when they are filled. To the contrary, Instructables identifies "Step 2["] includes "Set balloons outside when it is cold." (Ex. 1004, p. 4). This suggests that the balloons are filled inside and then carried outside to freeze.

Id. at 23–24.

We agree with Patent Owner that Petitioner has not demonstrated sufficiently that Instructables inherently discloses the limitation of claim 3. A balloon may be filled and set outside irrespective of whether it is filled on the ground so that it is substantially horizontal during filling. Petitioner has

not put forth any argument or evidence demonstrating that filling a balloon on the ground so that it is substantially horizontal during filling is the natural of result of Instructables's disclosure of filling balloons and setting them outside to freeze. *See In re Oelrich*, 666 F.2d at 581 ("The mere fact that a certain thing may result from a given set of circumstances is not sufficient [for inherency]. . . . If, however, the disclosure is sufficient to show that the natural result flowing from the operation as taught would result in the performance of the questioned function, it seems to be well settled that the disclosure should be regarded as sufficient." (citation omitted)).

In view of the foregoing, Petitioner has not shown persuasively, for purposes of institution, that Instructables discloses the limitation of claim 3. Furthermore, for the reasons set forth above in section III.D.2, Petitioner has not shown persuasively, for purposes of institution, that Instructables discloses the attaching limitation of independent claim 1 from which claim 3 depends. Petitioner, therefore, has not shown a reasonable likelihood that it would prove claim 3 is anticipated by Instructables.

4. Claim 7

Claim 7 recites:

> 7. The method according to claim 1, wherein the method comprises attaching a plurality of ice logs which are disposed generally vertically to a plurality of ice logs which are disposed generally horizontally to thereby form a staircase.

Ex. 1001, 13:39–42. Petitioner argues "Instructables at least inherently teaches this limitation." Pet. 20. According to Petitioner, "[g]iven that a [person of ordinary skill in the art] knows what a staircase is, the [person of ordinary skill in the art] would understand that Instructables'[s] recommendation to 'arrange pieces in some order' encompasses forming a staircase." *Id.*

Patent Owner contends that Petitioner has not shown Instructables inherently discloses the limitation of claim 7. Prelim. Resp. 28–30. In particular, Patent Owner contends that "Petitioner provides no support for the assertion that to 'arrange the pieces in some order' teaches and enables every structure with which a person of ordinary skill in the art may be familiar." *Id.* at 29.

Although Instructables's disclosure of arranging pieces in some order may encompass forming a staircase, "[t]he mere fact that a certain thing may result from a given set of circumstances is not sufficient [for inherency]." *In re Oelrich*, 666 F.2d at 581 (citation omitted). Moreover, Petitioner has not put forth any argument or evidence demonstrating that forming a staircase is the natural of result of Instructables's disclosure of arranging pieces in some order.

In view of the foregoing, Petitioner has not shown persuasively, for purposes of institution, that Instructables discloses the limitation of claim 7. Additionally, for the reasons set forth above in section III.D.2, Petitioner has not shown persuasively, for purposes of institution, that Instructables discloses the attaching limitation of independent claim 1 from which claim 7 depends. Petitioner, therefore, has not shown a reasonable likelihood that it would prove claim 7 is anticipated by Instructables.

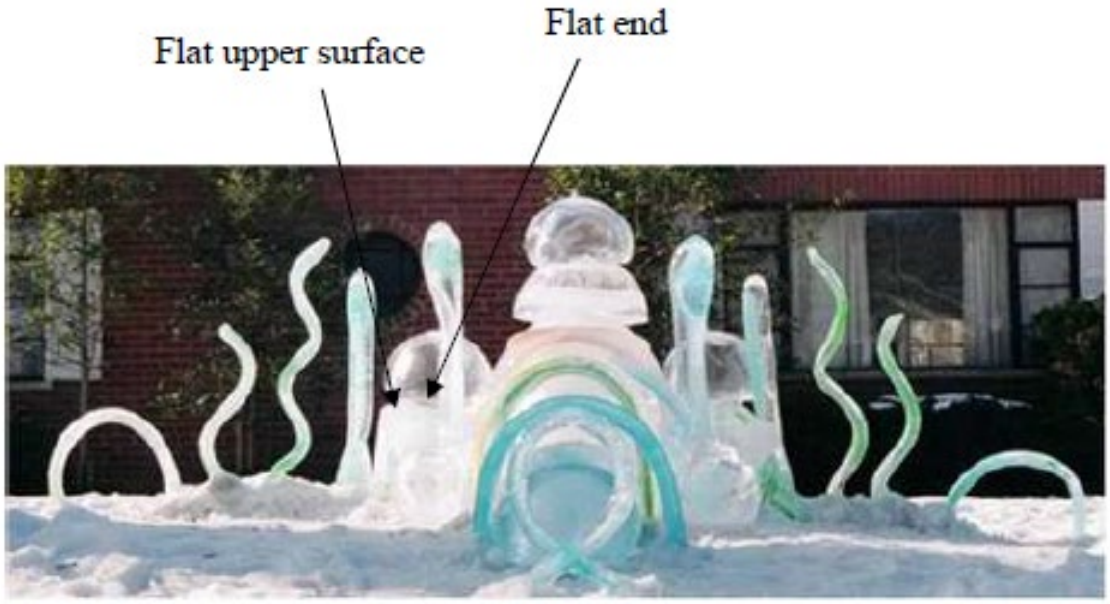
5. Claim 14

Claim 14 recites:

> 14. The method according to claim 1, wherein the method includes forming the at least one first ice log with a flat upper surface when the at least one first ice log is laying on the ground, and wherein creating at least one second ice log includes forming a plurality of second ice logs, each having a flat end, and disposing the plurality of second ice logs generally vertically so

that the flat ends are disposed on the flat upper surface of the at least one first ice log.

Ex. 1001, 14:9–16. Petitioner argues "Instructables at least inherently teaches these limitations." Pet. 23. Petitioner contends Instructables's photograph of an ice castle shows an ice log with a flat upper surface and an ice log with a flat end disposed on the flat upper surface, and Petitioner provides an annotated version of this photograph, reproduced below. *Id.*



Instructables's photograph of an ice castle shows a portion of the castle made up of a dome-shaped piece of ice atop of rectangular block of ice. Petitioner annotated the photograph to label the upper surface of the rectangular block of ice as "Flat upper surface" and the lower surface of the dome-shaped piece of ice, which contacts the upper surface of the rectangular block of ice, as "Flat end." Petitioner also contends "Instructables encourages creativity in forming ice logs in a variety of shapes and in arranging the ice logs to form an ice

structure." *Id.* (citing Ex. 1003, 4–5). According to Petitioner, "[s]uch creativity would encompass the limitations of claim 14." *Id.*

Patent Owner argues that Petitioner has not shown Instructables inherently discloses the limitations of claim 14. Prelim. Resp. 35–38. In particular, Patent Owner argues there is no support for Petitioner's assertion that Instructables's disclosure of encouraging creativity would encompass the limitations of claim 14. *Id.* at 38.

As we explain above in section III.D.4, "[t]he mere fact that a certain thing may result from a given set of circumstances is not sufficient [for inherency]." *In re Oelrich*, 666 F.2d at 581. Petitioner has not put forth any argument or evidence demonstrating that the recited steps of forming a first ice log with a flat upper surface when the ice log is laying on the ground, forming second ice logs each having a flat end, and disposing the second ice logs generally vertically so that the flat ends are disposed on the flat upper surface of the first ice log are the natural of result of Instructables's disclosure of encouraging creativity.

For these reasons, Petitioner has not shown persuasively, for purposes of institution, that Instructables discloses the limitations of claim 14. Furthermore, as set forth above in section III.D.2, Petitioner has not shown persuasively, for purposes of institution, that Instructables discloses the attaching limitation of independent claim 1 from which claim 14 depends. Thus, Petitioner has not shown a reasonable likelihood that it would prove claim 14 is anticipated by Instructables.

E. Anticipation By Christensen

Petitioner challenges claim 7 under 35 U.S.C. §§ 102(a)(1) and (2) as anticipated by Christensen. Pet. 24–27. Patent Owner argues that Petitioner has failed to show Christensen discloses every claim limitation. Prelim. Resp. 11–13, 30–32. We begin our analysis of this asserted ground of unpatentability with an overview of Christensen. We next discuss the parties' arguments for independent claim 1, from which claim 7 depends, and then turn to the parties' arguments for claim 7.

1. Christensen

Christensen "relates generally to apparatus and methods for constructing ice structures." Ex. 1005, 1:29–30. Figure 1, reproduced below, shows an apparatus for constructing ice structures. *Id.* at 4:27–30.

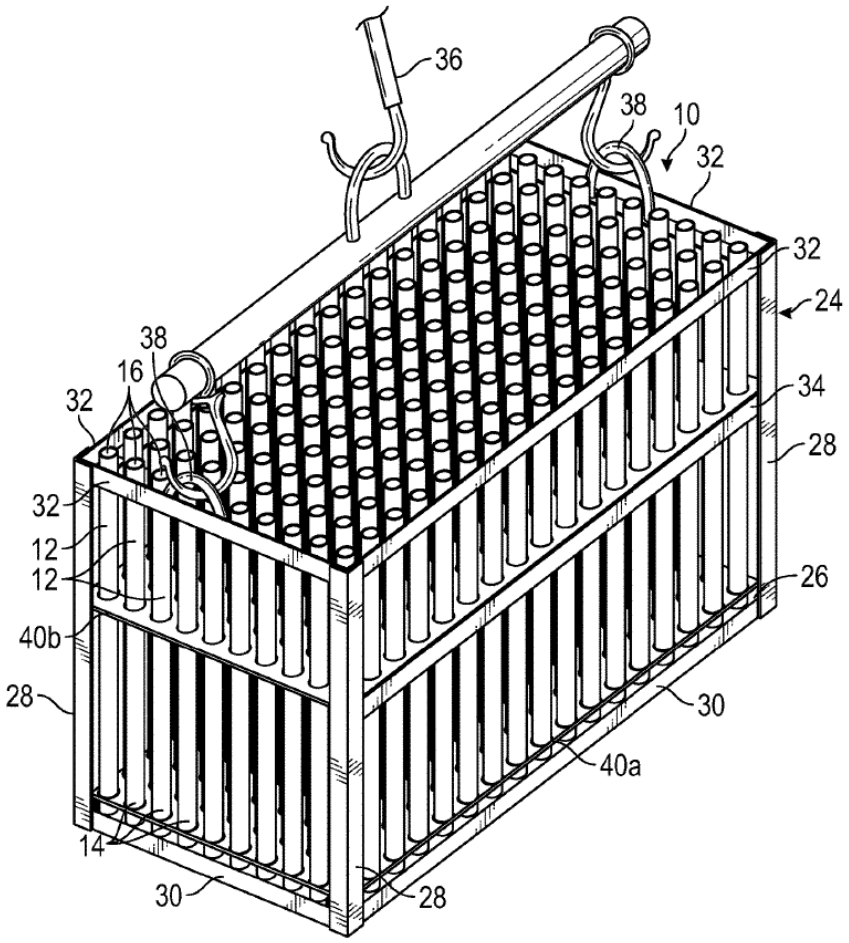


Figure 1 is an upper perspective view of an apparatus for constructing a structure from ice. *Id.* at 3:66–67. Apparatus 10 includes multiple tubes 12, each being disposed in an upright position and having closed bottom 14 for holding a liquid, such as water. *Id.* at 4:31–35. Apparatus 10 also includes container 22 with frame 24 comprising base 26, one or more side shafts 28, one or more bottom rails 30, one or more top rails 32, one or more intermediate rails 34, and one or more handles 38 for attaching to crane 36. *Id.* at 5:26–27, 34–37, 50–55, 6:9–12. Container 22 has open sides and is configured to allow transport of tubes 12, as well as ready and even contact of tubes 12 with a cooling air or a warming liquid. *Id.* at 5:22–25, 29–31. Apparatus 10 further includes one or more support sheets 40 with one or more holes 42 sized to secure tubes 12. *Id.* at 5:60–63. Support sheets 40 are disposed within frame 24 and coupled to base 26 or one or more intermediate rails 34. *Id.* at 5:63–65, 6:9–12.

A particular tube 12 may have a constant inner diameter along the entire length of the tube to facilitate formation of an icicle having a constant diameter along the entire length of the icicle. *Id.* at 4:39–46. Furthermore, tubes 12 may be constructed of polyethylene, high density polyethylene (HDPE), cross-linked polyethylene, cross-linked HDPE, e.g., PEX, polypropylene, polyvinyl chloride (PVC), metal, or another material. *Id.* at 4:65–5:2.

Figure 6, reproduced below, depicts a method for constructing a structure from ice. *Id.* at 6:42–44.

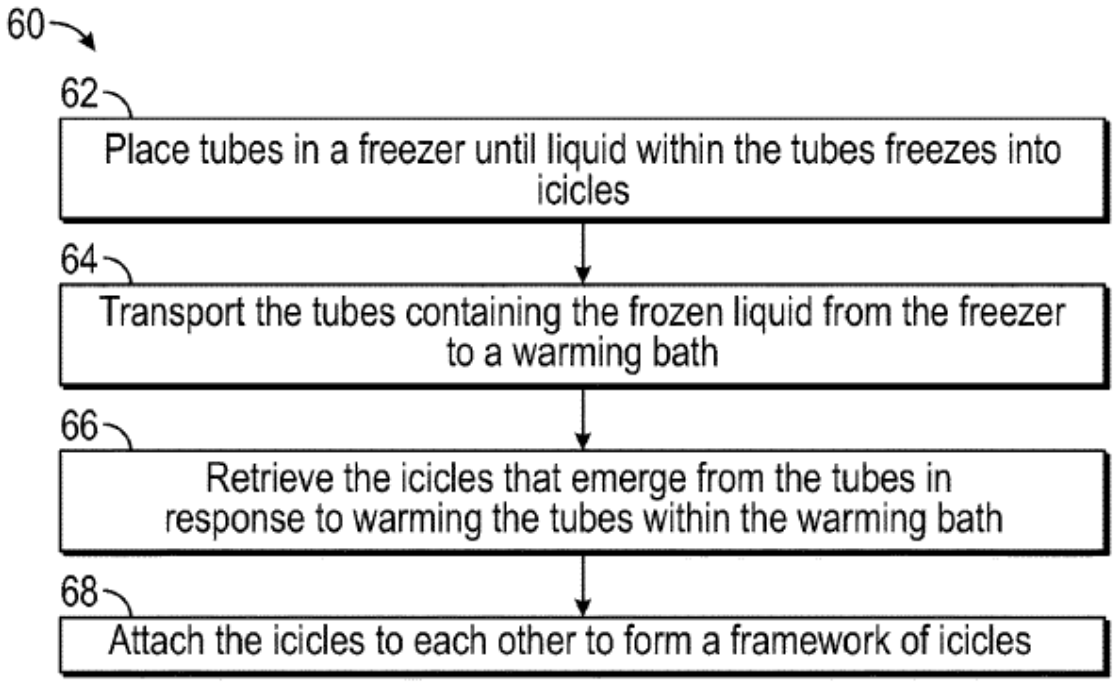


FIG. 6

Figure 6 is a flow diagram of a method of constructing a structure from ice. *Id.* at 4:16–18. Method 60 begins with block 62 where tubes 12 are placed in a freezer until liquid within tubes 12 freezes into icicles. *Id.* at 6:42–46. In block 64, which follows block 62, tubes 12 containing frozen liquid are transported from the freezer to a warming bath. *Id.* at 6:46–51. Block 66 follows block 64, and in block 66, icicles that emerge from tubes 12 in response to the warming bath are retrieved. *Id.* at 6:51–54. In block 68, which follows block 66, the icicles are attached to each other to form a framework of icicles. *Id.* at 6:64–67.

2. Independent Claim 1

For the preamble of independent claim 1, Petitioner argues "Christensen discloses '[a]pparatus and method for constructing ice

structures.'" Pet. 25 (alternation in original) (citing Ex. 1005, Title[7]). For the selecting limitation, Petitioner argues Christensen discloses forming icicles from tubes made from a variety of materials, including polyethylene and polypropylene. *Id.* (citing Ex. 1005, 4:27–32, 4:64–5:2). Petitioner also argues polyethylene and polypropylene are known to be flexible. *Id.* (citing Exs. 1006[8], 1007[9]). According to Petitioner, Christensen's tubes formed of polyethylene or polypropylene "would naturally flex and change shape to some extent when filled with water – even if minimally – and therefore meet this limitation." *Id.*

In regard to the filling limitation, Petitioner argues Christensen discloses filling tubes with water and placing the filled tubes in a freezer to freeze the water. *Id.* (citing Ex. 1005, 6:13–14). For the creating limitation, Petitioner argues Christensen discloses using tubes to form icicles. *Id.* at 26 (citing Ex. 1005, 6:13–14, Fig. 1). For the last limitation of independent claim 1, which is the attaching limitation, Petitioner argues Christensen discloses that the icicles formed in the tubes maybe attached to each other to form a framework of icicles. *Id.* (citing Ex. 1005, 6:66–7:2).

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[7] For this argument, which includes a quotation from Christensen, Petitioner cites to "EX1005, face." Pet. 25. The quotation appears to be the title of the patent, which is set forth on the face of the patent. Accordingly, we understand Petitioner to be citing to the title of Exhibit 1005.

[8] Tony Rogers, *Everything You Need to Know About Polyethylene (PE)*, Creative Mechanisms Blog (Sept. 14, 2015), https://www.creativemechanisms.com/blog/polyethylene-pe-for-prototypes-3d-printing-and-cnc ("Creative Mechanisms – Polyethylene") (Ex. 1006).

[9] Creative Mechanisms Staff, *Everything You Need to Know About Polypropylene (PP) Plastic*, Creative Mechanisms Blog (May 4, 2016), https://www.creativemechanisms.com/blog/all-about-polypropylene-pp-plastic ("Creative Mechanisms – Polypropylene") (Ex. 1007).

Patent Owner asserts Petitioner has not shown Christensen discloses the selecting limitation of independent claim 1, which requires a sleeve having sufficient flexibility such that the cross-sectional shape changes as the sleeve is filled with water. Prelim. Resp. 11–13, 31. Patent Owner maintains a person of ordinary skill in the art would not read Christensen as disclosing tubes that expand as they are being filled because Christensen discloses the tubes maintain a constant diameter and are disposed vertically. *Id.* at 12; *see also id.* at 31 ("[Christensen] specifically mentions the use of 'tubes or pipes' which have a 'constant inner diameter.'" (citing Ex. 1005, Abstract, 1:39–40, 4:39–46, 8:11–12)).

We agree with Patent Owner that Petitioner has not shown sufficiently that Christensen discloses the flexible sleeve recited in the selecting limitation of independent claim 1. Christensen discloses the tubes may be made from polyethylene, HDPE, cross-linked polyethylene, cross-linked HDPE, polypropylene, PVC, metal, or another material. *Id.* at 4:65–5:2. Christensen is silent regarding the flexibility of the tubes, and the inclusion of stiff materials like HDPE, PVC, and metal as exemplary materials for the tubes suggests the tubes are not flexible. Petitioner, however, relies on Creative Mechanisms – Polyethylene and Creative Mechanisms – Polypropylene to show that polyethylene and polypropylene are flexible materials. Creative Mechanisms – Polyethylene teaches that "[t]here are several types of polyethylene, and each one is best suited for a different set of applications." Ex. 1006, 1. According to Creative Mechanisms – Polyethylene, "Low-Density Polyethylene (LDPE) is a very flexible material with unique flow properties that makes is particularly suitable for shopping bags and other plastic film applications," whereas "High-Density

Polyethylene (HDPE) is a robust, moderately stiff plastic." *Id.* Although Creative Mechanisms – Polyethylene teaches that LDPE is a flexible material, Christensen does not disclose the tubes being formed from LDPE, but rather from polyethylene and HDPE, which Creative Mechanisms – Polyethylene describes as a robust, moderately stiff plastic. Similarly, Creative Mechanisms – Polypropylene teaches that polypropylene is a very flexible material, but further teaches that there are different types of polypropylene. Ex. 1007, 2. According to Creative Mechanisms – Polypropylene:

> Each category [of polypropylene] fits certain applications better than the others. Polypropylene is often called the "steel" of the plastic industry because of the various ways in which it can be modified or customized to best serve a particular purpose. This is usually achieved by introducing special additives to it or by manufacturing it in a very particular way. This adaptability is a vital property.

Id.

Moreover, Christensen's tubes are oriented vertically (Ex. 1005, Abstract, 4:32–35, Fig. 1), and Christensen discloses that each of the tubes may have a constant inner diameter along the length of the tube to facilitate the formation of an icicle having a constant diameter along its length (*id.* at Abstract, 1:39–40, 4:39–46, 8:11–12). A vertically-oriented tube must have some rigidity to maintain a constant diameter when filled with water, and Petitioner has not demonstrated persuasively that a person of ordinary skill in the art would have understood such a tube to be sufficiently flexible so that the cross-sectional shape changes as it is filled with water, as the selecting limitation of independent claim 1 requires.

For these reasons, Petitioner has not shown persuasively, for purposes of institution, that Christensen discloses the selecting limitation of

independent claim 1. Although claim 7 includes the subject of independent claim 1 via its dependency therefrom, we nevertheless turn to Petitioner's arguments for claim 7.

3. Claim 7

For the limitation of claim 7, which recites attaching a plurality of ice logs to form a staircase, Petitioner argues Christensen inherently teaches this limitation. Pet. 27. Specifically, Petitioner argues that Christensen discloses forming icicles in tubes and then attaching the icicles together to create a framework of icicles, and that this disclosure encompasses forming a staircase. *Id.* (citing Ex. 1005, 6:66–7:2). According to Petitioner, "[a person of ordinary skill in the art] would understand Christensen's teachings as enabling the use of ice logs to build a wide variety of common building structures." *Id.*

Patent Owner contends that Petitioner has not shown Christensen inherently discloses the limitation of claim 7. Prelim. Resp. 30–32. We agree with Patent Owner. As we explain above in section III.D.4, "[t]he mere fact that a certain thing may result from a given set of circumstances is not sufficient [for inherency]." *In re Oelrich*, 666 F.2d at 581. Petitioner has not put forth any argument or evidence demonstrating that forming a staircase is the natural of result of Christensen's disclosure of attaching icicles together to form a framework of icicles.

In view of the foregoing, Petitioner has not shown persuasively, for purposes of institution, that Christensen discloses the limitation of claim 7. Furthermore, for the reasons set forth above in section III.E.2, Petitioner has not shown persuasively, for purposes of institution, that Christensen discloses the selecting limitation of independent claim 1 from which claim 7

depends. Petitioner, therefore, has not shown a reasonable likelihood that it would prove claim 7 is anticipated by Christensen.

F. Obviousness Based On Instructables And Christensen

Petitioner challenges claims 3, 7, and 14 under 35 U.S.C. § 103, contending the claimed subject matter would have been obvious in view of Instructables and Christensen. Pet. 28. Specifically, Petitioner argues:

> Instructables'[s] balloons, pitchers, etc. and Christensen's tubes are used for the same purpose – to form ice logs for use in building ice structures. Therefore, a [person of ordinary skill in the art] would have been motivated to combine their respective teachings. To the extent that Instructables may be determined to lack an explicit teaching of any limitation in these claims, Christensen can be relied upon to provide the teaching.

Id.

Patent Owner argues that Petitioner has failed to show Instructables and Christensen render the claimed subject matter obvious. Prelim. Resp. 25–27, 32–33, 38–39. We agree with Patent Owner.

As an initial matter, this asserted ground of unpatentability fails to comply with 37 C.F.R. §§ 42.104(b)(4) and (5), which require Petitioner to specify where each element of the claim is found in the prior art and identify the specific portions of the evidence that support the challenge. Petitioner does not specify where the limitations of claims 3, 7, and 14 are found in its proposed combination of Instructables and Christensen, nor does Petitioner provide any citation to the evidence in support of this asserted ground.

That notwithstanding, Petitioner has not shown persuasively, for purposes of institution, that the subject matter of claims 3, 7, and 14 would have been obvious in view of Instructables and Christensen. Beginning with Petitioner's identification of the claim limitations in Instructables and

Christensen, as set forth above in sections III.D.3–5, Petitioner has not demonstrated sufficiently that Instructables discloses the limitations of claims 3, 7, and 14. Petitioner contends Christensen also discloses the limitations of these claims and ostensibly relies on the arguments for the asserted ground of unpatentability premised on anticipation by Christensen. Petitioner's asserted ground premised on anticipation by Christensen, however, does not include claims 3 and 14, and Petitioner does not present any arguments or evidence showing that Christensen discloses the limitations of these claims. Furthermore, for the reasons above in section III.E.3, Petitioner has not demonstrated sufficiently that Christensen discloses the limitation of claim 7. Turning to Petitioner's rationale for combining the teachings of Instructables and Christensen, although Petitioner argues Instructables's balloons and Christensen's tubes are used for the same purpose, namely forming ice logs that are used to build ice structures, Petitioner does not posit how a person of ordinary skill in the art would have combined the teachings of these references. *See Metalcraft of Mayville, Inc. v. Toro Co.*, 848 F.3d 1358, 1367 (Fed. Cir. 2017) ("Without any explanation as to how or why the references would be combined to arrive at the claimed invention, we are left with only hindsight bias that *KSR* warns against." (citing *KSR*, 550 U.S. 398 at 421)). For these reasons, Petitioner has not shown a reasonable likelihood that it would prove the subject matter of claims 3, 7, and 14 would have been obvious in view of Instructables and Christensen.

G. Obviousness Based On Instructables And DIYNetwork

Petitioner challenges claim 13 under 35 U.S.C. § 103, contending the claimed subject matter would have been obvious in view of Instructables and DIYNetwork. Pet. 33. Patent Owner argues that Petitioner has failed to show Instructables and DIYNetwork render the claimed subject matter obvious. Prelim. Resp. 14–15, 33–35. As we discuss Instructables above in section III.D.1, we begin our analysis of this asserted ground with an overview of DIYNetwork and then turn to the parties' arguments.

1. DIYNetwork

The DIY Network website includes a webpage entitled "How to Build Custom Deck Railings." *See* Ex. 1008, 1 (showing the webpage title and URL). Petitioner provides a copy of the webpage (Ex. 1008) and a web archive thereof (Ex. 1009) and refers to these webpages collectively as "DIYNetwork." *See* Pet. 12 (defining DIYNetwork as Exhibits 1008 and 1009).

DIYNetwork teaches a method for building custom deck railings which uses the deck support posts as mounts for the new railing system. Ex. 1008, 1. As shown in the photograph reproduced below, the method includes laying out two railing beams, clamping them together, and using a power drill in coordination with an aluminum jig to form holes for receiving the railing balusters. *Id.* at 2.



The photograph shows two wooden beams clamped together, as well as using a drill and an aluminum jig to form holes at the same locations along the length of each railing beam. After the holes are formed in the railing beams, one of the railing beams is drilled into the deck support posts near the bottom of each deck support post. *Id.* at 2–4. With the bottom railing attached to the deck support posts, steel powder-coated balusters are inserted into the holes of the bottom railing beam. *Id.* at 4. The other railing beam is then positioned atop the balusters so that the balusters are received within the holes, as shown in the photograph reproduced below. *Id.*



The photograph shows placing a railing beam atop the balusters so that the balusters are received within the holes of the railing beam. Once the top railing beam is in place on top of the balusters, the top railing beam is attached near the top of each deck support post using wood screws. *Id.* at 5. Lastly, a top rail is crafted and secured to the tops of the deck support posts by drilling several screws through the top rail into the deck support posts. *Id.* at 6–7.

2. Claim 13

Claim 13 recites:

> 13. The method according to claim 1, wherein the method comprises forming a plurality of second logs and cutting a plurality of holes in the at least one first ice log and inserting the plurality of second logs into the holes.

Ex. 1001, 14:5–8. Petitioner argues DIYNetwork teaches a building technique that involves cutting holes in one log and inserting other logs into the holes. Pet. 33 (citing Ex. 1008, 2–4). Petitioner also argues that Instructables discloses arranging ice logs in some order, and that a person of

ordinary skill in the art would have understood this disclosure encompasses any known building technique. *Id.* (citing Ex. 1003, 5). Petitioner maintains "[i]t would have been obvious to use DIYNetwork's building technique when building with ice as taught by Instructables." *Id.*

Patent Owner contends that Petitioner has not provided a sufficient rationale for combining Instructables with DIYNetwork. Prelim. Resp. 14–15, 34–35. In particular, Patent Owner argues: "[DIYNetwork] appear[s] to show taking two 2x4s, drilling holes into the 2x4s and placing steel balusters in the holes so that they extend between the 2x4s. Nothing in the reference suggests forming a railing with ice . . . ." *Id.* at 15. According to Patent Owner, "[w]ood and ice are two materially different substances." *Id.*

We agree with Patent Owner. Petitioner's reasoning for combining the teachings of Instructables and DIYNetwork is premised on Instructables's disclosure of arranging ice pieces in some order encompassing any known building technique, including DIYNetwork's technique for building custom deck railings out of wood. Petitioner, however, has not put forth any argument or evidence showing that a person of ordinary skill in the art would have understood Instructables's disclosure of arranging ice pieces in some order extends to DIYNetwork's technique of building deck railings out of wood.

Petitioner has not demonstrated sufficiently that a person of ordinary skill in the art would have combined the teachings of Instructables and DIYNetwork to result in the subject matter of claim 13. Furthermore, Petitioner ostensibly relies on Instructables for disclosing the limitations of independent claim 1, from which claim 13 depends, and, for the reasons set

forth above in section III.D.2, Petitioner has not shown persuasively, for purposes of institution, that Instructables discloses the attaching limitation of independent claim 1. Petitioner thus has not shown a reasonable likelihood that it would prove the subject matter of claim 13 would have been obvious in view of Instructables and DIYNetwork.

H. Obviousness Based On Instructables, DIYNetwork, And Christensen '042

Petitioner challenges claim 17 under 35 U.S.C. § 103, contending the claimed subject matter would have been obvious in view of Instructables, DIYNetwork, and Christensen '042. Pet. 41–66. Patent Owner argues that Petitioner has failed to show these references render the claimed subject matter obvious. Prelim. Resp. 14–16, 40–42. As we discuss Instructables and DIYNetwork above in sections III.D.1 and III.G.1, respectively, we begin our analysis of this asserted ground with an overview of Christensen '042 and then turn to the parties' arguments.

1. Christensen '042

Christensen '042 "relates to ice structures, and more particularly to methods for constructing structures of ice in a low-temperature environment." Ex. 1010, 1:7–9. In particular, Christensen '042 teaches forming a framework by joining together icicles using a slush of ice in liquid water. *Id.* at 3:14–16.

2. Claim 17

Claim 17 recites:

> 17. The method according to claim 15, wherein the method includes forming a plurality of holes in the first ice log; and wherein the method further includes forming a plurality of second ice logs by either cutting the first ice log or filling one or

> more additional sleeves with water and freezing the water, each of the second ice logs having a first end; and
>
> disposing the first ends of the plurality of second ice logs in the plurality of holes and applying at least one binder chosen from slush and water to the plurality of holes.

Ex. 1001, 14:28–37. Petitioner argues Instructables discloses the limitations of independent claim 15, from which claim 17 depends, and forming multiple ice logs. Pet. 34; *see also id.* at 23–24 (arguing Instructables discloses the limitations of independent claim 15). Petitioner also argues that Instructables discloses arranging ice logs in some order, and that a person of ordinary skill in the art would have understood this disclosure encompasses any known building technique. *Id.* (citing Ex. 1003, 5). Petitioner contends DIYNetwork teaches a building technique that involves cutting holes in one log and inserting other logs into the holes. *Id.* at 34 (citing Ex. 1008, 2–4). According to Petitioner, "[i]t would have been obvious to use DIYNetwork's building technique when building with ice as taught by Instructables." *Id.* Petitioner also contends "Christensen '042 teaches that ice structures can be built by joining icicles 'one to another to form a framework using a slush of ice in liquid water.'" *Id.* (quoting Ex. 1010, 3:14–16). Per Petitioner, "it would have been obvious to use slush to bind ice logs that are inserted into holes in another ice log." *Id.*

Patent Owner contends that Petitioner has not provided a sufficient rationale for combining Instructables, DIYNetwork, and Christensen '042. Prelim. Resp. 14–16, 40–42. We agree with Patent Owner for the reasons set forth above in section III.G.2. Like the asserted ground premised on Instructables and DIYNetwork, Petitioner's reasoning for combining the teachings of Instructables, DIYNetwork, and Christensen '042 is premised on Instructables's disclosure of arranging ice pieces in some order

encompassing any known building technique, including DIYNetwork's technique for building custom deck railings out of wood. Petitioner, however, has not put forth any argument or evidence showing that a person of ordinary skill in the art would have understood Instructables's disclosure of arranging ice pieces in some order extends to DIYNetwork's technique of building deck railings out of wood.

Petitioner has not demonstrated sufficiently that a person of ordinary skill in the art would have combined the teachings of Instructables, DIYNetwork, and Christensen '042 to result in the subject matter of claim 17. Petitioner has not shown a reasonable likelihood that it would prove the subject matter of claim 17 would have been obvious in view of Instructables, DIYNetwork, and Christensen '042.

I. Availability As Prior Art

Patent Owner contends that Petitioner has not shown Instructables and DIYNetwork are available as prior art. Prelim. Resp. 5–8, 13–14. We, however, need not address Patent Owner's contentions regarding the availability of Instructables and DIYNetwork as prior art because, for the reasons set forth above in sections III.D–H, we determine that Petitioner has failed to show a reasonable likelihood that it would prove at least one of the claims challenged in the Petition is unpatentable.

J. Discretionary Denial

Patent Owner argues we should exercise our discretion under 35 U.S.C. § 325(d) to deny institution of an *inter partes* review. Prelim. Resp. 10–13, 16. We need not decide whether it would be appropriate to

discretionarily deny institution because, as set forth above in sections III.D–H, we determine Petitioner has not demonstrated a reasonable likelihood that it would prove at least one of the claims challenged in the Petition is unpatentable.

IV. CONCLUSION

After considering the evidence and arguments presently before us, we determine Petitioner has not demonstrated a reasonable likelihood that it would prevail with respect to at least one of the claims challenged in the Petition. Accordingly, we do not institute an *inter partes* review.

V. ORDER

In consideration of the foregoing, it is:

ORDERED that the Petition is *denied*; and

FURTHER ORDERED that no *inter partes* review is instituted.

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