

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTEX RECREATION CORP.,
Petitioner,

v.

BESTWAY INFLATABLES & MATERIALS CORP.,
Patent Owner.

IPR2023-00489
Patent 10,687,633 B2

Before BARRY L. GROSSMAN, KIMBERLY McGRAW, and
RICHARD H. MARSCHALL, *Administrative Patent Judges*.

McGRAW, *Administrative Patent Judge*.

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

I. INTRODUCTION

Intex Recreation Corp. (“Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting an *inter partes* review of claims 3–15 and 17 of U.S. Patent No. 10,687,633 B2 (Ex. 1001, “the ’633 patent”). Petitioner also filed a Ranking and Explanation of Material Differences Between Petitions to address its four concurrently filed petitions (IPR2023–00486 through IPR2023-00489) challenging claims of the ’633 patent. Paper 3. Bestway Inflatables and Material Corp. (“Patent Owner”) filed a Preliminary Response. Paper 8 (“Prelim. Resp.”). With our authorization (Paper 9), Petitioner then filed an authorized Reply (Paper 10, “Reply”) to respond to Patent Owner’s Preliminary Response, to which Patent Owner filed a Sur-Reply to Petitioner’s Reply. Paper 11 (“Sur-Reply”).

We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314(b); 37 C.F.R. § 42.4(a). The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), 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.”

After considering the parties’ submissions and the evidence of record, we determine it is appropriate to exercise our discretion and decline to institute an *inter partes* review.

II. BACKGROUND

A. Related Matters

The parties identify *Bestway (USA), Inc. et al. v. Intex Recreation Corp. et al.*, No. 2:22-cv-00406 (C.D. Cal.) (the “District Court Proceeding”) as a related matter involving the ’633 patent. Pet. 1; Paper 6

(Patent Owner’s Mandatory Notice), 2.¹ In addition, the parties identify IPR2023-00486, IPR2023-00487, and IPR2023-00488, which also challenge claims of ’633 patent, as well as pending U.S. Patent Appl. No. 16/907,893, which is a continuation of the application that became the ’633 patent, as related matters. Pet. 1; Paper 6, 2.

B. Real Parties-in-Interest

Petitioner identifies itself, Intex Development Company Ltd., Intex Industries (Xiamen) Co., Ltd., and Intex Marketing Ltd. as real parties-in-interest. Pet. 1. Patent Owner identifies itself, Bestway (USA), Inc., Bestway Global Holding, Inc., and Bestway (Hong Kong) International, Ltd. as real parties-in-interest. Paper 6, 1.

C. Overview of the ’633 patent

The ’633 patent, titled “Inflatable Bed,” “relates to inflatable beds or inflatable mattresses, and more specifically, to an inflatable bed, the structure of which is configured to limit the outward bulging or deformation of a side wall.” Ex. 1001, code (54), 1:12–15. The ’633 patent discloses that prior art inflatable beds or mattresses having a larger height can experience side wall bulging and deforming, which affects appearance and may result in decay of air pressure and softening that reduces comfort. *Id.* at 1:37–46. The ’633 patent also discloses that these prior art inflatable beds or mattresses also have a stability issue in which the bed may roll over as a user sits or lies near the edge. *Id.* at 1:60–65. According to the ’633 patent, “[t]he technical problem to be solved by the present invention to provide an

¹ Patent Owner’s Mandatory Notice filed in accordance with 37 C.F.R. § 42.8 does not include page numbers. Paper 6. We consider the title page as page 1 and then proceed from there in numerical order.

inflatable bed, in order to overcome the defects of easy occurrence of bulging and deformation of the side walls of the inflatable beds and inflatable mattresses, poor stability of the inflatable beds and inflatable mattresses, and susceptibility of roll-over.” *Id.* at 2:7–12.

Figure 6 of the '633 patent, reproduced below, is a partial section view of an inflatable bed according to a first embodiment. *Id.* at 5:13–15.

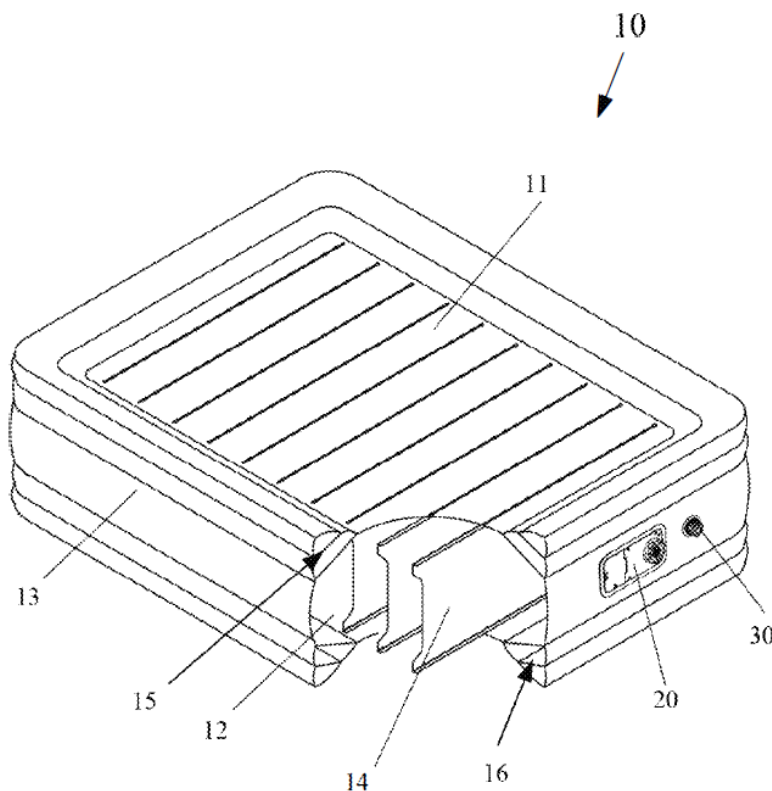


Fig. 6

Figure 6 of the '633 patent depicts inflatable bed 10 including top sheet 11, bottom sheet 12, at least one side wall 13, and at least one first tensioning structure 14. *Id.* at 6:18–22. An upper edge of sidewall 13 is coupled to an outer edge of top sheet 11 and a lower edge of sidewall 13 is coupled to an outer edge of bottom sheet 12. *Id.* at 6:22–26. An air chamber is formed between the top sheet 11, bottom sheet 12, and side wall 13. *Id.* at

6:26–28. First tensioning structure 14 includes upper and lower ends that are coupled to top sheet 11 and lower sheet 12, respectively. *Id.* at 6:28–31. According to the '633 patent, first tensioning structure 14 limits upward and downward bulging of top sheet 11 and bottom sheet 12 after the air chamber is inflated. *Id.* at 6:31–35. Inflatable bed 10 also includes a support structure comprising second tensioning structure 15 and third tensioning structure 16. *Id.* at 6:47–48. Second tensioning structure 15 is coupled to side wall 13 and top sheet 11 to limit lateral bulging of top sheet 11 and side wall 13 after the air chamber is inflated. *Id.* at 6:49–55. Similarly, third tensioning structure 16 is coupled to side wall 13 and bottom sheet 12 to limit lateral bulging of bottom sheet 12 and side wall 13. *Id.* at 6:56–63.

D. The Challenged Claims

Petitioner challenges dependent claims 3–15 and 17 of the '633 patent. Pet. 1. Each of the claims depend directly or indirectly from claim 1, which is representative of the challenged subject matter and is reproduced below with bracketed lettering added.

1.[a] An inflatable bed, comprising:

[b] a top sheet and a bottom sheet disposed vertically at an interval;

[c] at least one side wall, an upper edge of said side wall being coupled to an outer edge of said top sheet, a lower edge of said side wall being coupled to an outer edge of said bottom sheet, an air chamber formed between said top sheet, said bottom sheet and said side wall;

[d] at least one first tensioning structure disposed in said air chamber, an upper end and a lower end of said first tensioning structure being respectively coupled to said top sheet and said bottom sheet; and

[e] at least one support structure disposed in said air chamber, said support structure being disposed in a longitudinal direction of at least one of said side walls, at least two outside

edges of said support structure being respectively coupled to the side wall adjacent, at least one inside edge of said support structure being coupled to the top sheet or bottom sheet adjacent;

[f] wherein said support structure comprises a second tensioning structure and a third tensioning structure, at least two outside edges of said second tensioning structure are respectively coupled to said at least one side wall, at least one inside edge of said second tensioning structure is coupled to said top sheet; and

[g] wherein at least two outside edges of said third tensioning structure are respectively coupled to said at least one side wall, at least one inside edge of said third tensioning structure is coupled to said bottom sheet.

Ex. 1001, 12:37–65.

3. The inflatable bed according to claim 1, [a] wherein said second tensioning structure and said third tensioning structure are disposed at an interval.

Id. at 13:4–6.

E. Asserted Grounds of Unpatentability

Petitioner contends claims 3–15 and 17 of the '633 patent are unpatentable on the following grounds.

Claim(s) Challenged	35 U.S.C. §	Reference(s) /Basis
3–13, 17	103 ²	Lin ³ , Intex Product Catalog ⁴ ,

² The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. § 103 effective March 16, 2013. Because the application giving rise to the '633 patent was filed after that date, with no benefit claim prior to that date, the AIA version of § 103 applies. *See* Ex. 1001, (60).

³ CN 203137719 U, dated August 21, 2013 (Chinese language document (Ex. 1006); English translation (Ex. 1007, “Lin”)).

⁴ Intex 2014 Comfort Collection Catalog (Ex. 1008, the “Catalog” or “Intex Product Catalog”). Petitioner represents that the Catalog published June 10, 2013 and was publicly accessible. Pet. 21–22.

Claim(s) Challenged	35 U.S.C. §	Reference(s) /Basis
		Metzger ⁵
12–14	103	Lin, Intex Product Catalog, Metzger, Lin '773 ⁶
15	103	Lin, Intex Product Catalog, Metzger, Lin '773, Liu ⁷

Pet. 3–4. In support of its unpatentability arguments, Petitioner relies on the declaration of Bernhard Kuchel. Ex. 1002 (“Kuchel Declaration”).

F. Overview of Asserted Art

1. Lin

Lin is a Chinese patent that “relates to a structure of an inflatable product, and in particular to a cable-stayed reinforcement structure for an air chamber of an inflatable product.” Ex. 1007 ¶ 1.⁸ Lin states that the cable-stayed reinforcement structure “may prevent the periphery of the product from overly protruding to affect the aesthetic appearance of the product while ensuring the height and strength of the product, and may effectively reduce the material cost and the production cost.” *Id.* ¶ 6.

Figure 1 of Lin, reproduced below, is an exploded view of an inflatable product with a cable-stayed reinforcement structure according to a first embodiment. *Id.* ¶ 15.

⁵ US 7,089,618 B1, issued Aug. 15, 2006 (Ex. 1010, “Metzger”).

⁶ US 8,562,773 B2, issued Oct. 22, 2013 (Ex. 1009, “Lin ’773”).

⁷ US 2015/0335164 A1, published Nov. 26, 2015 (Ex. 1015, “Liu”).

⁸ We cite to the paragraph numbers included in the English language version of Lin (Ex. 1007).

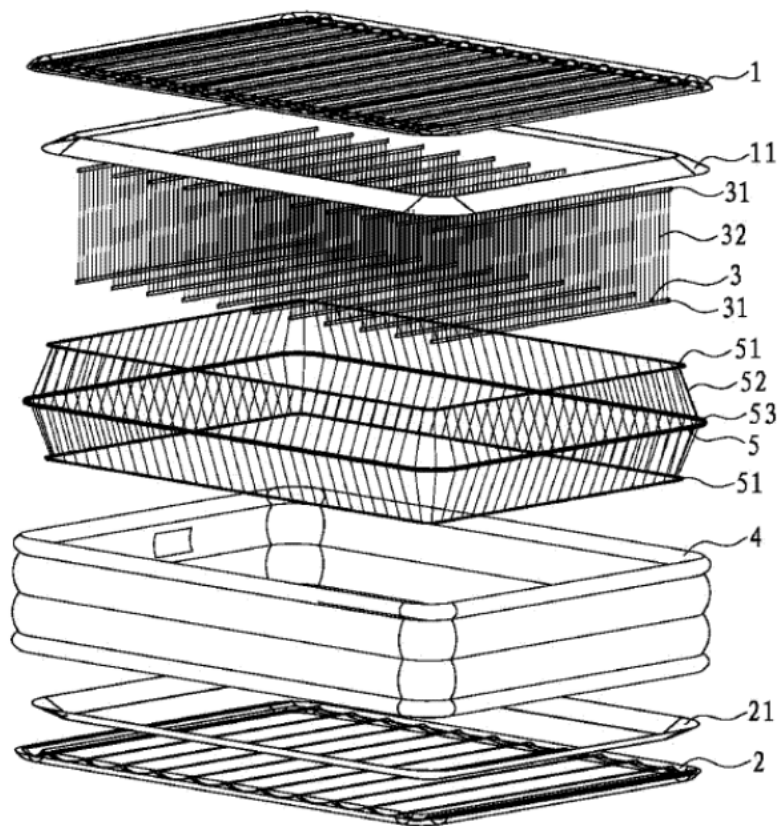


Figure 2 of Lin depicts an inflatable product with a cable-stayed reinforcement structure including upper piece 1, lower piece 2, drawbelts 3, wrapping piece 4, and side wrapping belt 5. *Id.* ¶ 21. The ends of each drawbelt 3 connect to a lower surface of upper piece 1 and an upper surface of lower piece 2. *Id.* Upper and lower sides of wrapping piece 4 connect, respectively, to the peripheries of upper piece 1 and lower piece 2 to form an air chamber. *Id.* One end of side wrapping belt 5 connects to the middle of an inner surfaces of wrapping piece 4, and the other end of side wrapping belt 5 connects near the periphery of the lower surface of upper piece 1 or near the periphery of the upper surface of lower piece 2. *Id.* Side wrapping belt 5 is an integral ring-shaped drawbelt formed by ring-shaped plastic strips 51 connected to a plurality of cables 52, the middle of the cables being fixed to plastic strip 53, which connects to the middle of an inner surface of

wrapping piece 4. *Id.* Each end of ring-shaped plastic strips 51 respectively connects to upper piece 1 and lower piece 2. *Id.* Lin discloses that side wrapping belt 5 pinches the middle portion of wrapping piece 4 to be concave in order “to prevent the periphery from overly protruding, and, at the same time, to ensure the strength of the periphery of the bed and the support strength of the bed as a whole.” *Id.* ¶ 24.

2. Catalog

The Catalog is an Intex product catalog for a line of inflatable products, including inflatable beds. Ex. 1008, 3.⁹ The Catalog discloses airbeds having Dura-Beam™ interior construction, which uses high-strength polyester fibers that are durable and do not stretch over time. *Id.* at 6.

Page 16 of the Catalog is reproduced below.



COMFORT-PLUSH
HIGH RISE AIRBED
WITH DURA-BEAM™ CONSTRUCTION

Patent pending
Dura-Beam™ Construction

Built-in
AC electric pump

AIRBED WITH BUILT-IN ELECTRIC PUMP

Item	Size	Approximate Inflated Size	Built-in Pump	Case Pack	Case Weight
64417 / E	Queen	60" x 80" x 22" (152cm x 203cm x 56cm)	110 - 120V	2 Ea.	43.6 Lb. (19.8kg)
64418			220 - 240V		

22"
(56cm)
BED HEIGHT

INFLATING TIMES*

AC Electric Pump
110-120V 4½ minutes
220-240V 4½ minutes

* Inflating time varies by mattress size and desired firmness

⁹ We cite to the exhibit page numbers added by Petitioner.

Page 16 of the Catalog depicts a Comfort-Plush High Rise Airbed with Dura-Beam™ construction. *Id.* at 16. The inset figure on the upper right of the page is a cut-away drawing showing the interior construction of the Comfort-Plush High Rise Airbed, including the polyester fibers. *Id.* The airbed includes horizontal air chambers to provide stability and support, and also includes a built-in electric pump for inflating and deflating the airbed. *Id.* at 17.

3. Metzger

Metzger, titled “Air Mattress,” “relates to an air mattress or bed constructed to limit the expansion or deformation of the mattress during use.” Ex. 1010, code (54), 1:6–8. Metzger states that “a need exists for an improved double height air mattress better adapted for controlling or limiting the expansion or deflection of the mattress sidewall, or sidewalls, during usage.” *Id.* at 2:48–51.

Figure 7 of Metzger, reproduced below, is a partial cross-section view of an air mattress according to one embodiment. *Id.* at 3:66–67.

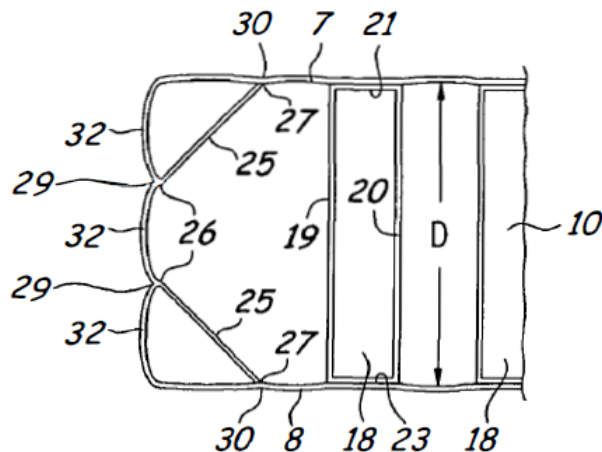


Figure 7 of Metzger depicts an air mattress including top panel 7 and bottom panel 8 tied together by spaced coils 18 extending through air chamber 10. *Id.* at 4:41–51. Side support beams 25 extend lengthwise along the side

panels of the air mattress (not labeled). *Id.* at 5:27–30. Each support beam 25 has first edge 26 affixed to a side panel along weld line 29 and second edge 27 affixed to top panel 7 or bottom panel 8 along weld line 30. *Id.* at 5:27–35. Metzger discloses that side support beams 25 act to limit the outward expansion of the side panel of the air mattress in response to the presence of a load placed externally on the first panel or the second panel. *Id.* at 5:52–59.

4. *Lin '773*

Lin '773, titled “Method of Producing an Internal Tensioning Structure Useable with Inflatable Devices,” relates “to an inflatable product structure which is light in weight and low in cost.” Ex. 1009, code (54), 1:20–22. Lin '773 discloses an internal tensioning structure for inflatable products that maintains a desired geometric arrangement of inflatable surfaces. *Id.* at 2:8–13.

Figure 1 of Lin '773, reproduced below, is an exploded perspective view of a tensioning structure according to one embodiment. *Id.* at 5:4–6.

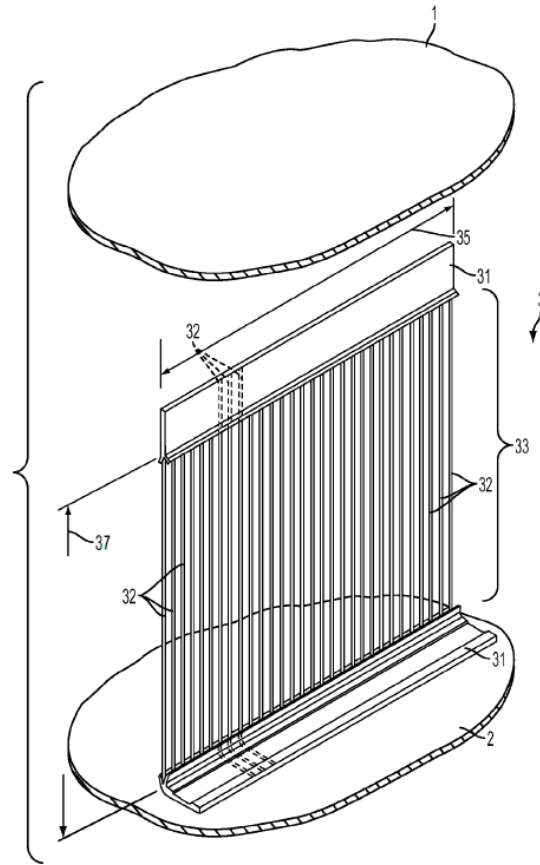


FIG. 1

Figure 1 of Lin '773 depicts tensioning structure 3 for joining upper material 1 and lower material 2. *Id.* at 7:16–22. Tensioning structure 3 includes upper and lower weld strips 31, which are connected by a plurality of substantially-parallel strands 32 and are welded to upper material 1 and lower material 2. *Id.* at 7:16–25.

5. *Liu*

Liu, titled “Internal Supports for Inflatable Products,” relates “to an inflatable product incorporating a durable tensioning structure that is light in weight and low in cost.” Ex. 1015, code (54), ¶ 3. Liu discloses a tensioning structure that spans the gap between sheets of an inflatable product. *Id.* ¶ 11.

Figure 1 of Liu, reproduced below, is an exploded perspective view of an exemplary air mattress incorporating a tensioning structure. *Id.* ¶ 21.

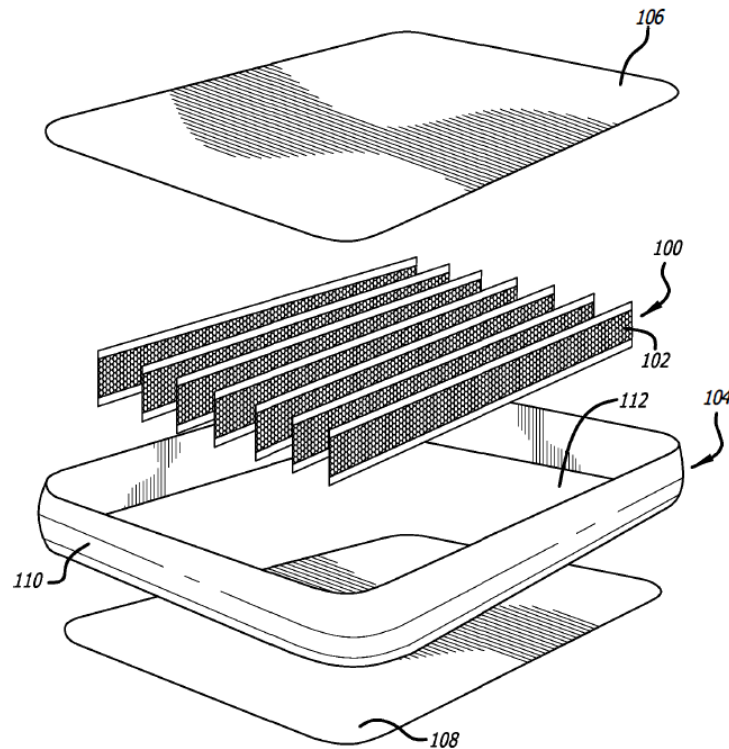


FIG. 1

Figure 1 of Liu depicts inflatable air mattress 104 including top sheet 106 and bottom sheet 108, and flexible sidewall 110, which are peripherally-welded to form inflatable chamber 112. *Id.* ¶ 37. Tensioning structures 100 within inflatable chamber 112 may include one or more I-beam support structures 102 attached to the inner surfaces of top sheet 106 and bottom sheet 108. *Id.* Liu also discloses the use of “RF welding, hot-air coupling, adhering, or other means known in the art” to attach tensioning structures to the top and bottom sheets. *Id.* ¶ 54.

III. DISCRETIONARY DENIAL UNDER 35 U.S.C. § 314(a)

A. Overview

Petitioner filed four petitions challenging the patentability of claims of the '633 patent. The instant petition challenges claims 3–15 and 17, which are not asserted in the related District Court Proceeding, and relies on Lin (Ex. 1007) and other references including an Intex Product Catalog (Ex. 1008). Paper 3, 1–2. The petition in IPR2023-00488 (the “488-Petition”) also challenges these same claims, but relies on Aoki¹⁰ (Ex. 1005) and other references. *Id.*

The remaining two petitions similarly rely either on Lin or on Aoki, but challenge claims of the '633 patent that are asserted in the related District Court. *See* Paper 3, 1 (noting the petition filed in IPR2023-00486 challenges claims 1, 2, 16, 19, 20 based on Aoki with other references and that the petition filed in IPR2023-00487 challenges claims 1, 2, 16, 19, and 20 based on Lin with other references, including the Intex Product Catalog).

Petitioner ranks the Aoki-based 486-Petition first but requests that the Board institute on all four petitions. Paper 3, 1–2. Patent Owner argues that the Board institute no more than one petition challenging the claims of the '633 patent. Prelim. Resp. 15.

As explained more fully below, we exercise discretion to deny institution of the present Petition under 35 U.S.C. § 314(a) in light of our decision to institute the 488-Petition, which challenges the same claims based on Aoki.

¹⁰ JPU-1-1974-034811, dated June 28, 1972 (Japanese language document (Ex. 1004); English translation (Ex. 1005, “Aoki”).

B. 35 U.S.C. § 314(a)

Under § 314(a), the Director has discretion to deny institution of an *inter partes* review. *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2140 (2016) (“[T]he agency’s decision to deny a petition is a matter committed to the Patent Office’s discretion.”); *SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1356 (2018) (“[Section] 314(a) invests the Director with discretion on the question whether to institute review . . .” (emphasis omitted)); *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) (“[T]he PTO is permitted, but never compelled, to institute an IPR proceeding.”).

When evaluating whether to exercise discretion to deny institution based on more than one concurrently filed petition addressing the same patent, we are guided by our Consolidated Trial Practice Guide (“Consolidated TPG”)¹¹, which states:

Based on the Board’s prior experience, one petition should be sufficient to challenge the claims of a patent in most situations. Two or more petitions filed against the same patent at or about the same time . . . may place a substantial and unnecessary burden on the Board and the patent owner and could raise fairness, timing, and efficiency concerns. See U.S.C. § 316(b).

Nonetheless, the Board recognizes that there may be circumstances in which more than one petition may be necessary, including, for example, when the patent owner has asserted a large number of claims in litigation or when there is a dispute about priority date requiring arguments under multiple prior art references. In such cases two petitions by a petitioner may be needed, although this should be rare.

Consolidated TPG, 59.

¹¹ Available at <https://www.uspto.gov/TrialPracticeGuideConsolidated>.

C. Analysis

Petitioner argues that the Board should institute both the Lin-based petitions as well as the Aoki-based petitions because “Aoki is an older reference that Patent Owner may argue does not disclose certain limitations reciting how the claimed bed sheets and tensioning structures are coupled to each other.” Paper 3, 3. Petitioner also asserts that Patent Owner (1) may challenge the Lin-based petitions under 35 U.S.C. § 325(d) because Lin was applied by the Examiner during prosecution of the ’633 patent and (2) may challenge the printed publication status of the Intex Product Catalog. *Id.* at 3–5. Additionally, Petitioner contends that it is not possible to present the Aoki and Lin based grounds, nor the asserted and non-asserted claims, in one petition. *Id.* at 5.

We are not persuaded that Petitioner’s arguments justify institution of the present Petition, which challenges claims 3–15 and 17 of the ’633 patent based on Lin, in addition to institution of the petition in IPR2023-00488, which challenges the same claims based on Aoki.

Petitioner’s arguments regarding the differences between its Aoki-based and Lin-based petitions fail to take into account the full scope of arguments in the Aoki-based petitions, which do not rely solely on Aoki to teach the “coupling” limitations. For example, Ground 2 of the 488-Petition contends, to the extent Aoki does not disclose how Aoki’s diagonal hanging bracing sheets (the tensioning structures) are “coupled” to the outer surfaces as recited in claim 1, that the combination of Aoki and Lin ’773 teaches such limitations. *See, e.g.*, 488-Petition at 49. Significantly, Petitioner does not provide any explanation as to how these arguments set forth in the 488-Petition—i.e., that the “coupling limitations” are taught by the combination

of Aoki and Lin '773—are materially different than its arguments regarding the coupling limitations allegedly taught by Lin set forth in the present Petition. As such, Petitioner fails to sufficiently identify material differences between the challenges presented in the 488-Petition and the present 489-Petition that would warrant institution of a second petition challenging the same claims.

Petitioner's remaining arguments regarding the differences between the lower-ranked Lin-based petitions and the higher-ranked Aoki-based are similarly unpersuasive. *See* Paper 3, 3–5 (stating Patent Owner may challenge the lower-ranked petitions under § 325(d) or as based on prior art that does not qualify as a printed publication). These arguments do not provide a persuasive reason why the Board should institute the lower-ranked petition if the Board institutes on the higher-ranked petition. We also note that Patent Owner did not make any § 325(d) or printed publication arguments in its Preliminary Response. *See generally* Prelim. Resp.

In view of the above, Petitioner has not provided sufficient reasons to justify instituting *inter partes* review on two parallel petitions challenging the same set of claims. Accordingly, because we institute an *inter partes* review of claims 3–15 and 17 of the '633 patent on the grounds presented in the IPR2023-00488 Petition, we exercise our discretion under § 314(a) to deny institution in this proceeding.

IV. CONCLUSION

For the reasons set forth above, we determine that the circumstances weigh in favor of discretionary denial of this Petition. Accordingly, we exercise our discretion to deny institution under 35 U.S.C. § 314(a).

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that the Petition is denied and no trial is instituted.

IPR2023-00489
Patent 10,687,633 B2

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