

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MILLERKNOLL, INC.,
Petitioner,

v.

AARON DEJULE,
Patent Owner.

IPR2023-01427
Patent 10,893,753 B2

Before KEN B. BARRETT, RICHARD H. MARSCHALL, and
ROBERT J. SILVERMAN, *Administrative Patent Judges*.

MARSCHALL, *Administrative Patent Judge*.

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

Petitioner MillerKnoll, Inc. (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting an *inter partes* review of claims 1–15 and 17–22 of U.S. Patent No. 10,893,753 B2 (Ex. 1001, “the ’753 patent”). *See* Pet. 1. Patent Owner Aaron DeJule (“Patent Owner”) filed a Preliminary Response (Paper 5, “Prelim. Resp.”).¹

We have authority to determine whether to institute an *inter partes* review. *See* 35 U.S.C. § 314; 37 C.F.R. § 42.4(a) (2022). Under 35 U.S.C. § 314(a), we may not authorize an *inter partes* review unless the information in the petition and the preliminary response “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.”

For the reasons that follow, we determine that Petitioner has not demonstrated a reasonable likelihood of prevailing with respect to any of the challenges in the Petition. Accordingly, we do not institute an *inter partes* review.

BACKGROUND

A. Real Parties-in-Interest and Related Matters

Petitioner identifies itself, MillerKnoll, Inc., as the real party-in-interest. Pet. 1. Patent Owner identifies itself, Aaron DeJule, as the real party-in-interest. Paper 4, 2.

The parties identify the following related matters: *DeJule v. Miller Knoll, Inc.*, Case No. 1:23-cv-00969-RJJ-SJB (W.D. Mich., filed Sept. 13,

¹ Petitioner also includes a challenge to dependent claim 16 in the Petition, but Patent Owner disclaimed claim 16 after Petitioner filed the Petition. *See* Pet. 91–108; Prelim. Resp. 38–39; Ex. 2010. We do not address claim 16 or Petitioner’s challenge to claim 16 in this Decision.

2023); IPR2023-01428 (challenging a patent related to the '753 patent).
Pet. 1; Paper 4, 2.

B. The '753 Patent

The '753 patent, which is titled “Apparatus With Weight Responsive Changeable Adjusting Characteristics,” relates to an “apparatus upon which variable weight is applied during normal use and, more particularly, to an apparatus having at least one part with different adjusting characteristics during normal use depending upon the particular applied weight.” Ex. 1001, code (54), 1:9–13. “In one form, the invention is directed to a reconfigurable apparatus for seating a user” that includes a frame, seat, back rest, and an adjusting assembly. *Id.* at 2:48–50.

In its discussion of “Background Art,” the '753 patent refers to “a typical task chair construction,” wherein “a wheeled frame supports a vertically adjustable seat” and “[a] back rest is integrated into the frame and/or seat so that it can be tilted or reclined to accommodate a user’s normal movements and/or to allow inclined back positions to be comfortably maintained by the user’s upper torso weight as he/she is sitting.” Ex. 1001, 1:26–31. The '753 patent Specification explains how the varying weights of users can affect the operation of such chairs:

With a single design, performance of a particular seating apparatus will be different depending upon the weight of a user. For example, a heavier individual may be able to comfortably urge a back rest towards an inclined position and comfortably maintain potentially a number of different, desired, inclined positions within a range. On the other hand, a lighter individual with the same design may have to engage in a more unnatural movement and constantly exert a pressure on the seat back to prevent it from returning to its normal upright position, generally maintained through some sort of biasing mechanism.

Id. at 1:41–51.

In the “Detailed Description of the Preferred Embodiment,” the Specification describes various exemplary embodiments, such as that shown in Figure 2, which is reproduced below.

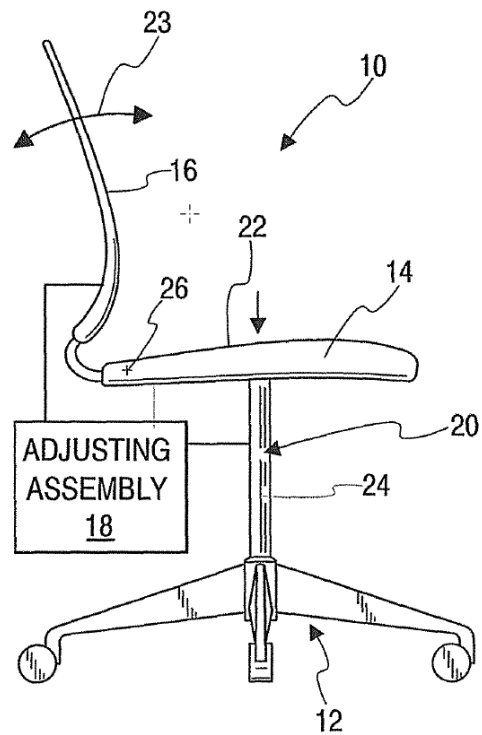


Fig. 2

Figure 2 “is a side elevation view of a task chair” that “has a wheeled frame 12 with a vertically extending pedestal assembly 20,” a “first component 14,” which “is in the form of a conventional-type seat with an upwardly facing user support surface 22,” as well as a “second component 16 . . . in the form of a back rest against which a seated user leans to exert the aforementioned force in the second manner to reconfigure the chair 10.” Ex. 1001, 4:15, 5:32–42. In operation, “the back rest moves relative to the frame 12 and first component 14, as the user leans back and forth while seated, generally in a manner as indicated by the double-headed arrow 23.” *Id.* at 5:42–45. “The adjusting assembly 18, as shown schematically in FIG. 2,

acts between the first component/seat 14 and second component/back rest 16 directly and/or through the frame 12.” *Id.* at 5:43–46.

The Specification describes “[e]xemplary specific forms of the adjusting assembly 18.” Ex. 1001, 5:66. One of these exemplary forms is shown in Figure 3 of the ’753 patent, which is reproduced below.

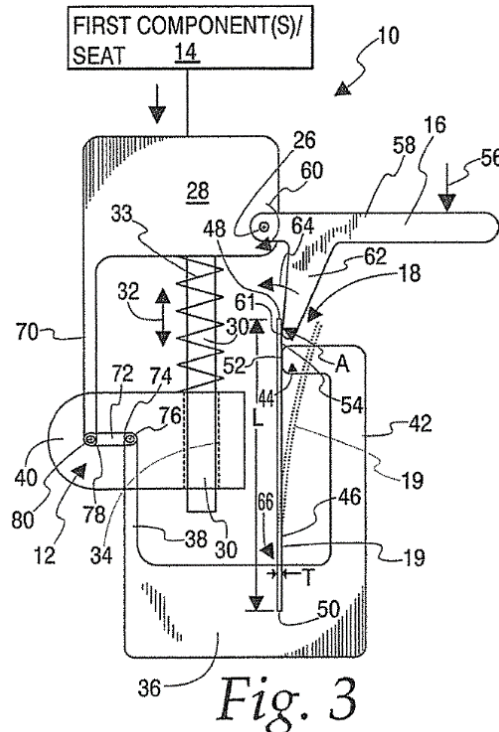


Figure 3 “is a partially schematic representation of one specific form of adjusting assembly.” *Id.* at 4:19–20. The Specification describes various elements shown in Figure 3, and their operation, including a “biasing assembly, shown in one exemplary form as a coil spring 33,” that “urges the seat 14 upwardly relative to the frame 12.” *Id.* at 6:13–16. The Specification also describes support 28 and member 36, which “can be considered to be part of the frame 12 and/or the adjusting assembly 18” and component 58 that “can be considered to be part of the back rest 16 and/or the adjusting assembly 18.” *Id.* at 6:20–24. The adjusting assembly 18

depicted in Figure 3 also includes leaf spring 19 “anchored in the member 36 to project in cantilever fashion vertically upwardly therefrom.” *Id.* at 6:25–30. When a user leans against back rest 16, “that tends to pivot the component 58 in the direction of the arrow 60 around the axis 26,” with leaf spring 19 “biasably resists movement of the component 58, and the back rest 16 of which the component 58 is a part.” *Id.* at 6:42–56. “In the event that an individual of greater weight assumes a sitting position on the seat 14, the support 28 and component 58 will translate further downwardly against the force of the spring 33, which causes the edge 61 on the back rest component 58 to bear upon the leaf spring 19 at a location below the location A,” such that “a shorter moment arm is established between the location where the edge 61 on the part 62 contacts the surface 54 and the fulcrum location at 66.” *Id.* at 6:65–7:6. “Accordingly, an increase in the weight of a user causes the leaf spring 19 to produce a greater resistance to movement of the back rest 16 relative to the frame 12.” *Id.* at 7:23–25.

The additional Figures and accompanying written description of the ’753 patent Specification describe various modifications to the adjusting assembly shown in Figure 3, as well as other forms and implementations of adjusting assemblies. *See, e.g.*, Ex. 1001, Figs. 7–18.

We reproduce Figure 7 of the ’753 patent below.

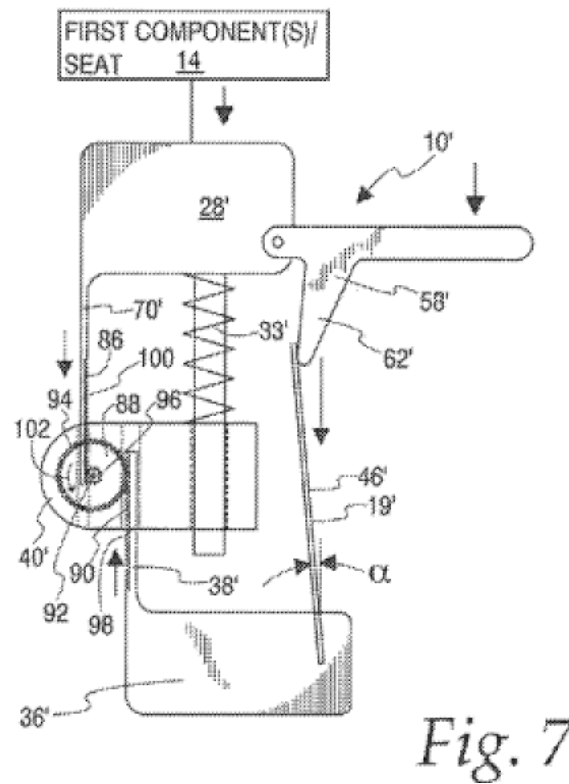


Figure 7 depicts a partially schematic representation that incorporates one form of the disclosed adjusting assembly. Ex. 1001, 4:31–33. Figure 7 incorporates toothed elements 86, 88, 90, toothed portions 94, 96, and toothed racks 98, 100 that cooperate to cause movement of various components to the frame part in a manner “that replicates the relative movement that occurs with corresponding elements in the embodiment shown in FIGS. 3 and 4.” *See id.* at Fig. 7; 8:3–15. The ’753 patent discloses further embodiments in later figures that incorporate gears that cooperate to cause movement to achieve the goals of the ’753 patent. *See id.* at Figs. 8–18.

C. Challenged Claims

As noted above, Petitioner challenges claims 1–15 and 17–22 of the ’753 patent, with claim 1 the only independent claim. Pet. 1; Ex. 1001,

claims 1–22. Claim 1, which illustrates the challenged subject matter, is reproduced below.

1. A reconfigurable apparatus for seating a user, the reconfigurable apparatus comprising:

- a frame,
- a seat mounted on the frame and movable relative to the frame between: a) a first position in which the seat resides with no user sitting on the seat; and b) a loaded position into which the seat moves from the first position as an incident of a user sitting on the seat;
- a back rest against which a user sitting on the seat can bear his/her back to produce a leaning force that changes an angular orientation of the back rest relative to the frame,

the apparatus configured so that a first leaning force is required to be applied to the back rest to change the angular orientation of the back rest from a starting angular position relative to the frame with no user sitting in the seat; and

an adjusting assembly comprising a plurality of gears that cooperate and move relative to each other as an incident of the seat moving from the first position into the loaded position and configured to thereby increase a resistance to changing of the angular orientation of the back rest from the starting angular position,

whereby as an incident of a user sitting on the seat a leaning force greater than the first leaning force is required to change the angular position of the back rest from the starting angular position.

Ex. 1001, claim 1 (emphasis added to the “adjusting assembly” limitation).

D. Asserted Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability (Pet. 11):

Claim(s) Challenged	35 U.S.C. §	Basis/Reference(s)
1–6, 8–14, 18–22	102	Schmitz ²
1–3, 7, 15, 17	102	Takamatsu ³

Petitioner filed a Declaration of Marcus C. Koepke (Ex. 1012) with the Petition.

ANALYSIS

A. Legal Standards

Petitioner’s challenges rely solely on anticipation. *See* Pet. 11. To establish anticipation under 35 U.S.C. § 102, each and every element in a claim, arranged as recited in the claim, must be found in a single prior art reference. *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008); *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383 (Fed. Cir. 2001). Each element of the challenged claim must be found, either expressly or inherently, in the single prior art reference. *Verdegaal Bros., Inc. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987). When evaluating a prior art reference in the context of anticipation, the reference must be “considered together with the knowledge of one of ordinary skill in the pertinent art.” *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (citing *In re Samour*, 571 F.2d 559, 562 (CCPA 1978)). “[A] reference can anticipate a claim even if it ‘d[oes] not expressly spell out’ all the limitations arranged or combined as in the claim, if a person of skill in

² US Pub. 2009/0261637 A1, published October 22, 2009 (Ex. 1006, “Schmitz”).

³ US 5,348,372, issued September 20, 1994 (Ex. 1007, “Takamatsu”).

the art, reading the reference, would ‘at once envisage’ the claimed arrangement or combination.” *Kennametal, Inc. v. Ingersoll Cutting Tool Co.*, 780 F.3d 1376, 1381 (Fed. Cir. 2015) (quoting *In re Petering*, 301 F.2d 676, 681 (CCPA 1962)) (alterations in original).

In order to anticipate, a prior art reference must enable a person of ordinary skill in the art to make the invention without undue experimentation. *See Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1336 (Fed. Cir. 2008). A sufficiently enabling anticipatory reference must put the invention “in the possession” of the person of ordinary skill in the art. *See Impax Labs., Inc. v. Aventis Pharms. Inc.*, 545 F.3d 1312, 1315 (Fed. Cir. 2008).

B. Level of Ordinary Skill in the Art

The level of skill in the art is “a prism or lens” through which we view the prior art and the claimed invention. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). “This reference point prevents . . . factfinders from using their own insight or, worse yet, hindsight, to gauge obviousness.” *Id.* Factors pertinent to a determination of the level of ordinary skill in the art include: (1) educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of workers active in the field. *Env’t Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 696–697 (Fed. Cir. 1983) (citing *Orthopedic Equip. Co. v. All Orthopedic Appliances, Inc.*, 707 F.2d 1376, 1381–82 (Fed. Cir. 1983)). Not all such factors may be present in every case, and one or more of these or other factors may predominate in a particular case. *Id.* Moreover, these factors are not exhaustive but are merely a guide to

determining the level of ordinary skill in the art. *Daiichi Sankyo Co. v. Apotex, Inc.*, 501 F.3d 1254, 1256 (Fed. Cir. 2007). In determining a level of ordinary skill, we also may look to the prior art, which may reflect an appropriate skill level. *Okajima*, 261 F.3d at 1355.

Petitioner contends that one of ordinary skill in the art “would have had a bachelor’s degree in industrial design, mechanical engineering, and/or a related field, and at least 2–3 years of experience designing furniture.” Pet. 12 (citing Ex. 1012 ¶¶ 22–23). Patent Owner states that “for the purposes of this Preliminary Response only, Patent Owner forgoes offering a competing definition of the level of ordinary skill.” Prelim. Resp. 7.

For purposes of this Decision, we adopt and apply Petitioner’s proposed level of ordinary skill in the art, which we view as consistent with the level of skill reflected in the ’753 patent and the asserted prior art.

C. Claim Construction

1. Legal Standards

We construe each 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). Under this standard, claim terms are generally given their ordinary and customary meaning as would have been understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005) (en banc) (“We have frequently stated that the words of a claim ‘are generally given their ordinary and customary meaning.’” (citations omitted)). “The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’” *Realtime Data, LLC v. Iancu*, 912

F.3d 1368, 1375 (Fed. Cir. 2019) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

The claim construction dispute here involves construction of “adjusting assembly” in claim 1 as a “means-plus-function” limitation. *See* Pet. 13–17; Prelim. Resp. 7–27.

Section 112(f)⁴ states that an “element in a claim for a combination may be expressed as a means or step for performing a specified function . . . and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.” 35 U.S.C. § 112(f). The use of the term “means” creates a rebuttable presumption that 35 U.S.C. § 112(f) applies and, conversely, the absence of the term “means” creates a rebuttable presumption that this statutory mandate does not apply. *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015) (en banc, in relevant part). These presumptions can be overcome, however, if the claim limitation “fails to ‘recite sufficiently definite structure’ or else recites ‘function without reciting sufficient structure for performing that function.’” *Id.* (citing *Watts v. XL Sys., Inc.*, 232 F.3d 877, 880 (Fed. Cir. 2000)). Indeed, as the Federal Circuit has emphasized,

the essential inquiry is not merely the presence or absence of the word “means” but whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure.

⁴ Section 4(c) of the Leahy-Smith America Invents Act (AIA), Pub. L. No. 112-29, § 4(c), 125 Stat. 284 (2011), re-designated former 35 U.S.C. § 112, ¶ 6, as 35 U.S.C. § 112(f). The AIA designation (i.e., “§ 112(f)”) applies to the ’753 patent.

Id. at 1348 (citing *Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1583 (Fed. Cir. 1996)); *see also* *TriMed, Inc. v. Stryker Corp.*, 514 F.3d 1256, 1259–60 (Fed. Cir. 2008) (“Sufficient structure exists when the claim language specifies the exact structure that performs the functions in question without need to resort to other portions of the specification or extrinsic evidence for an adequate understanding of the structure.”)

Construing a means-plus-function claim limitation is a two-step process, undertaken by first identifying the claimed function and then determining what corresponding structure is disclosed in the specification, if any such disclosure exists, that performs the claimed function. *See Williamson*, 792 F.3d at 1351; *see also* *Med. Instrumentation & Diagnostics Corp. v. Elekta AB*, 344 F.3d 1205, 1210 (Fed. Cir. 2003). The “corresponding structure need not include all things necessary to enable the claimed invention to work,” but “corresponding structure must include all structure that actually performs the recited function.” *Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 296 F.3d 1106, 1119 (Fed. Cir. 2002). Further, the referenced “structure disclosed in the specification is ‘corresponding’ structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim.” *Golight, Inc. v. Wal-Mart Stores, Inc.*, 355 F.3d 1327, 1334 (Fed. Cir. 2004); *see also* *Cardiac Pacemakers*, 296 F.3d at 1113.

The Board’s Rules require that a petition for *inter partes* review identify how each challenged claim is to be construed, including identification of the corresponding structure for means-plus-function limitations. In particular, “[w]here the claim to be construed contains a means-plus-function . . . limitation as permitted under 35 U.S.C. 112(f), the

construction of the claim must identify the specific portions of the specification that describe the structure, material, or acts corresponding to each claimed function.” 37 C.F.R. § 42.104(b)(3). The Consolidated Trial Practice Guide⁵ emphasizes the significance of 37 C.F.R. § 42.104(b)(3):

Where claim language may be construed according to 35 U.S.C. § 112(f), a petitioner must provide a construction that includes both the claimed function and the specific portions of the specification that describe the structure, material, or acts corresponding to each claimed function. 37 C.F.R. § 42.104(b)(3). A party may choose to elaborate why § 112(f) should or should not apply to the limitation at issue. . . . A petitioner who chooses not to address construction under § 112(f) risks failing to satisfy the requirement of 37 C.F.R. § 42.104(b)(3).

Consolidated Practice Guide, 45.

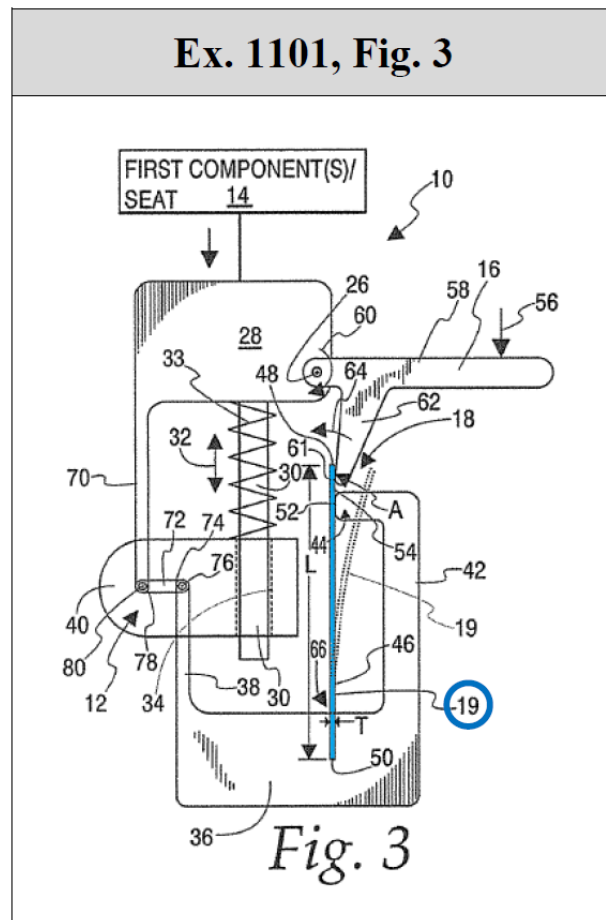
2. *The Parties’ Positions*

Petitioner contends that “adjusting assembly” in claim 1 “should be construed as a means-plus-function (‘MPF’) element under § 112(f).” Pet. 13. According to Petitioner, although claim elements that lack the word “means” are presumed not to fall under the statute, the claim element recites a function without sufficient structure for performing that function. *Id.* More specifically, Petitioner contends that the element recites function when it recites “an adjusting assembly comprising a plurality of gears” configured to “increase a resistance to changing of the angular orientation of the back rest from the starting angular position” when the seat moves from a “first position into [a] loaded position.” *Id.* (quoting Ex. 1001, 12:41–46)

⁵ See Consolidated Trial Practice Guide (“Consolidated Practice Guide”) at 45 (available at <https://www.uspto.gov/TrialPracticeGuideConsolidated>); see also 84 Fed. Reg. 64,280 (Nov. 21, 2019).

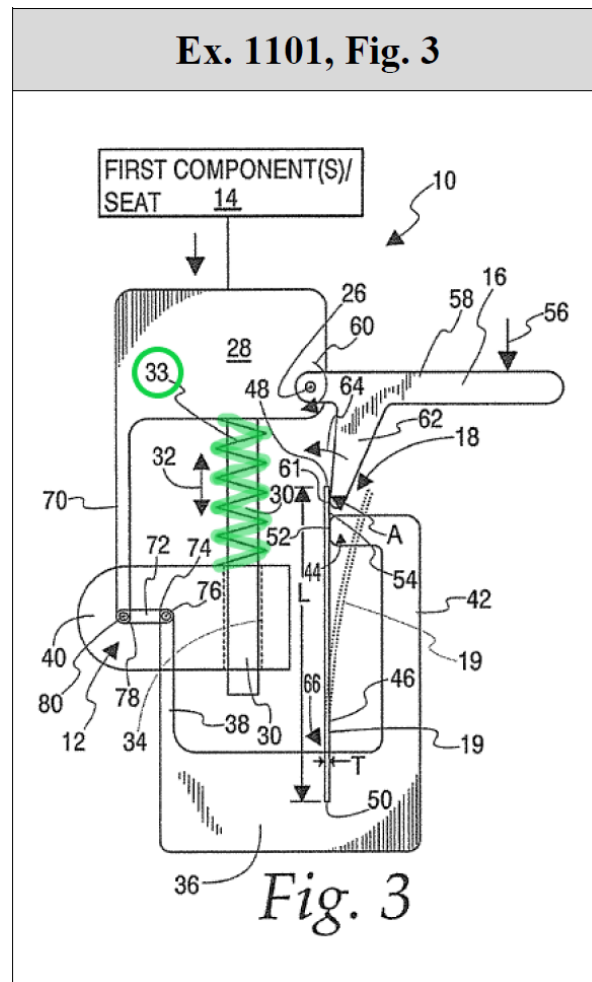
(alteration in original). Petitioner further asserts that “adjusting assembly” amounts to a “nonce” term that “operates as a substitute for ‘means’ to claim a function.” *Id.* at 13–14. Petitioner acknowledges that the inclusion of “plurality of gears” in the claim element recites structure, but contends that the gears alone cannot perform the claimed function, which requires the springs shown in the ’753 patent Specification. *See id.* at 14–16. In light of this, in Petitioner’s view, “‘adjusting assembly’ is properly construed as MPF.” *Id.* at 16.

Petitioner further asserts that the function required by the “adjusting assembly” is “increas[ing] a resistance to changing of the angular orientation of the back rest from the starting angular position.” Pet. 16–17 (alteration in original). As to the corresponding structure to perform the function, Petitioner relies on the Specification’s description of tilting springs (leaf spring 19, coil spring, or torsion component) and a weighing spring (coil spring 33). *Id.* (citing Ex. 1001, 6:13–16, 6:25–28, 10:1–6, 10:31–34, 10:53–11:8; Ex. 1012 ¶¶ 61–64, 67). Petitioner characterizes a “tilting spring” as “a spring structure that variably resists the tilting of the chair’s backrest.” *Id.* at 14 (citing Ex. 1012 ¶ 61). Petitioner refers to “leaf spring 19,” shown in Figure 3 of the ’753 patent Specification, as an example of a “tilting spring” and provides an annotated Figure 3, reproduced below, indicating “leaf spring 19,” highlighted in blue. *Id.* at 14–15.



Petitioner’s annotated Figure 3, shown above, reproduces Figure 3 from the ’753 patent, with the addition of blue coloring to indicate leaf spring 19 and its reference number. *Id.* at 15.

Petitioner characterizes the “weighing spring” as “a spring structure that allows the seat to move down a distance proportionate to a user’s weight when the user sits.” Pet. 15 (citing Ex. 1012 ¶ 63). Petitioner refers to “coil spring 33,” shown in Figure 3 of the ’753 patent, as an example of a “weighing spring” and provides another annotated Figure 3, reproduced below, indicating “coil spring 33,” highlighted in green. *Id.* at 15–16.



Petitioner’s annotated Figure 3, shown above, reproduces Figure 3 from the ’753 patent, with the addition of green coloring to indicate coil spring 33 and its reference number. *Id.* at 16. Petitioner contends that a “weighing spring,” such as coil spring 33 in Figure 3, allows the seat to move down in response to a user sitting, reducing the effective length of the tilting spring (leaf spring 19), “thereby increasing the backrest tilting resistance—the claimed function.” *Id.* at 15 (citing Ex. 1012 ¶ 63).

Patent Owner “agrees,” for purposes of this proceeding, “that means-plus-function treatment is appropriate for the ‘adjusting assembly’” limitation. Prelim. Resp. 8 n.3. Patent Owner disagrees with Petitioner’s identification of the claimed function as well as the corresponding structure.

As to the claimed function, Patent Owner argues that Petitioner omits key language that requires the gears to “cooperate and move relative to each other as an incident of the seat moving from the first position into the loaded position,” which in turn links to the function identified by Petitioner—“to thereby increase a resistance to changing of the angular orientation of the back rest from the starting angular position.” *Id.* at 8–9.⁶

As to corresponding structure, Patent Owner argues that Figures 7 and 9 in the ’753 patent Specification “need to be accounted for” and that the claim language and those figures require a “plurality of gears” to be a part of the corresponding structure. Prelim. Resp. 10–12. According to Patent Owner, an “election of species during prosecution” that elected Figure 9 justifies focus on that particular embodiment. *See id.* Patent Owner also argues that Petitioner fails to identify the gears as part of the corresponding structure and that the “two disconnected spring structures” Petitioner does rely on “are not sufficient structure to provide the full functionality” required by the claim. *Id.* at 12–16. Based on this approach, Patent Owner identifies the following structure in Figure 9 as corresponding to the claimed function: a weighing spring, a leaf spring with an effective length that shortens “as weight is applied to the weighing spring,” cooperating gears, and a linkage

⁶ Patent Owner also argues that Petitioner fails to include the “whereby” clause at the end of claim 1 as part of the claimed function. *See* Prelim. Resp. 9–10. We need not reach that issue because the structure that corresponds to that functional language appears to be the same as the structure that corresponds to the other functional language, and Patent Owner does not dispute that the prior art performs this function. *See id.* at 9–10, 31–38.

(identified as 58 in Figure 3 and 58''' in Figure 9) “in direct contact with, or is a part of,” a back rest and the leaf spring. *Id.* at 16–27.

3. Discussion

We first address whether section 112(f) applies to the “adjusting assembly” limitation. The parties agree that it does. *See* Pet. 13–16; Prelim. Resp. 8 n.3. Based on the current record, including the unrebutted declarant testimony Petitioner relies on, we agree that the “adjusting assembly” language alone does not refer to any specific structure to one of ordinary skill in the art. *See* Pet. 13–14; Ex. 1012 ¶¶ 58–59. We also agree that the presence of “a plurality of gears” within the overall limitation does not recite sufficient structure to perform the claimed function because other structure, including the springs Petitioner identifies, are necessary to “increase a resistance to changing of the angular orientation of the back rest.” *See* Pet. 14–16; Ex. 1012 ¶¶ 60–65. The remainder of the “adjusting assembly” limitation recites only functional terms without any additional structure. Under these circumstances, we agree with the parties that the “adjusting assembly” limitation should be construed as a means-plus-function limitation consistent with section 112(f).

While we do not view Patent Owner’s proposed construction as correct, due to improper identification of corresponding structure,⁷ we focus

⁷ For example, Patent Owner alleges that “for purposes of understanding the structure that the patent links or associates with the claimed functions for the ‘adjusting assembly,’ Figure 9 is the pertinent embodiment” because Patent Owner made an “election of species during prosecution, in which Figure 9 was elected for further prosecution.” Prelim. Resp. 10–12 (emphasis omitted). Patent Owner does not adequately explain the basis for limiting the corresponding structure in a means-plus-function construction to elected species during prosecution. *See id.*; compare *Signtech USA, Ltd. v. Vutek*,

on incorrect aspects of Petitioner’s proposed construction because Petitioner’s faulty construction fatally undermines Petitioner’s anticipation challenges. We agree with Patent Owner that Petitioner’s construction fails to give adequate weight, or any weight, to the “plurality of gears” aspect of the “adjusting assembly” limitation. Petitioner acknowledges the “plurality of gears” language when arguing that the presence of this structure in the claim does not prevent that the “adjusting assembly” limitation from being construed as a means-plus-function limitation, but Petitioner does not include the functional requirements of the gears in its identification of the claimed function or identify the gears as part of the structure in the Specification that performs the claimed function. *See* Pet. 13–17. Both of these approaches are erroneous and lead to an incorrect construction of the “adjusting assembly” limitation.

The adjusting assembly limitation requires “an adjusting assembly *comprising a plurality of gears that cooperate and move relative to each other as an incident of the seat moving from the first position into the loaded position* configured to thereby increase a resistance to changing of the angular orientation of the back rest from the starting angular position.” Ex. 1001, claim 1 (emphasis added). Accordingly, the plain language of the claim requires an adjusting assembly that includes gears that perform a certain function (“cooperate and move relative to each other . . .”). Petitioner’s identified function focuses on the “increase a resistance” functional language and improperly omits the functional language associated

Inc., 174 F.3d 1352, 1357–58 (Fed. Cir. 1999) (refusing to rely on species restriction requirement in prosecution history as a basis to construe a means-plus-function limitation).

with the gears, which forms part of the functional requirements of the overall adjusting assembly. *See* Pet. 13–17.

As to the corresponding structure, because the claim language defines the “plurality of gears” as part of the “adjusting assembly,” Petitioner erred by failing to identify any of the embodiments in the Specification that employ gears to perform the claimed functions. *See* Pet. 17. The claim language further supports this reading by tying the claim language associated with the gears to the functional language that follows when the later language includes the phrase “*configured to thereby* increase a resistance to changing of the angular orientation of the back rest from the starting angular position.” Ex. 1001, claim 1 (emphasis added). The “thereby” language suggests that the cooperating and moving gears are part of the structure that performs the function of “increas[ing] a resistance to changing of the angular orientation of the back rest from the starting angular position” and therefore are a part of the corresponding structure that performs the claimed functions. *See id.*

Further, because claim 1 requires “gears” that are a part of the adjusting assembly, the embodiment that Petitioner relies upon in Figure 3 of the ’753 patent, which does not include any gears, does not correspond to the “adjusting assembly” limitation in claim 1. Pet. 14–16 (relying on Figure 3 embodiment). Only those embodiments that employ gears that help perform the claimed functions, such as the embodiments shown in Figures 7 and 9 and relied on by Patent Owner, can correspond to the claimed function. *See* Prelim. Resp. 22–24. While the full scope of the “adjusting assembly” limitation includes all of the embodiments in the Specification that include gears that perform the claimed functions, and neither party

addresses these additional embodiments, we need not determine the full scope of the “adjusting assembly” limitation. For purposes of this Decision, we need only conclude that the structure corresponding to the “adjusting assembly” limitation includes at least the plurality of gears shown in the embodiments depicted in Figures 7 and 9 of the ’753 patent and described in the accompanying text, and equivalents thereof. *See* Ex. 1001, Figs. 7, 9, 7:59–8:47. The parties agree that the corresponding structure also includes at least the weighing spring and leaf spring disclosed in the Specification. *See* Pet. 17; Prelim. Resp. 16–17.⁸

Based on the foregoing, we construe the “adjusting assembly” limitation in independent claim 1 to require, at a minimum, performance of the functions identified in the claim using structure that is the same as, or equivalent to, the gears and spring structure employed in the embodiments of Figures 7 and 9⁹ of the ’753 patent to perform the claimed functions. *See*

⁸ Because we focus on the gears and the absence of them from Petitioner’s construction and invalidity analysis, we need not reach whether the “weighing spring” should not be viewed as part of the adjusting assembly because the Specification describes it as a part of a biasing assembly, or whether linkage 58 should not be viewed as part of the adjusting assembly because the Specification describes it as a part of the back rest 16. Prelim. Resp. 17 n.6, 25–27; Ex. 1001, 6:20–24.

⁹ Our reference to Figures 7 *and* 9 does not suggest that the structures in *both* embodiments are required to meet the claim limitation because they are alternative embodiments, not embodiments meant to be employed at the same time to perform the claimed functions. *See* Ex. 1001, 8:39–44 (“In a further modified form of chair, as shown at 10” in FIG. 9, the basic construction of FIGS. 3 and 7 is utilized with the exception that the leaf spring 19” is fixedly mounted to the component 58” and acts against the member 36”, i.e., this component arrangement is reversed from that in the earlier embodiments.”). Accordingly, the “adjusting assembly” limitation covers the structure employing gears and springs as depicted in

Ex. 1001, Figs. 7, 9, 7:59–8:15, 8:39–47. We need not reach whether other embodiments, not addressed by the parties, also correspond to the “adjusting assembly” limitation. *Micro Chemical, Inc. v. Great Plains Chemical Co.*, 194 F.3d 1250, 1259 (Fed. Cir. 1999) (holding that claim covers not only the preferred embodiment in the specification, but “alternative structures corresponding to the claimed function” described in the specification). We also need not construe any other aspects of the “adjusting assembly” limitation or the remainder of claim 1 to resolve the issues raised by the Petition.

D. Anticipation Based on Schmitz

Petitioner argues that Schmitz discloses all of the limitations of claims 1–6, 8–14, and 18–22. *See* Pet. 28–68. Patent Owner disagrees. Prelim. Resp. 31–34. We first provide an overview of Schmitz, and then address the parties’ arguments.

1. Schmitz

Schmitz describes a chair supported by a spring mechanism. Ex. 1006, code (57). In one embodiment, Schmitz discloses the use of springs and gears that cooperate to vary the resistance to tilting the seat based on the weight applied to the seat. *See id.* ¶¶ 70–71.

We reproduce Schmitz’s Figure 7d below.

Figure 7 that performs the claimed functions, and equivalents thereof, as well as the structure employing gears and spring as depicted in Figure 9 that perform the claimed functions, and equivalents thereof.

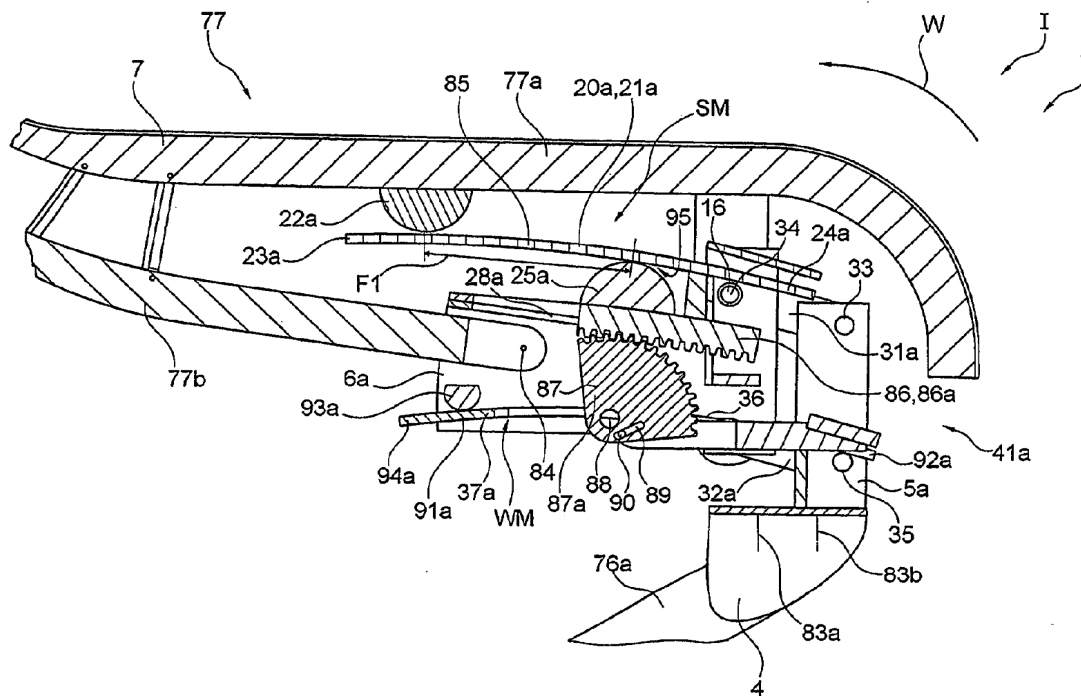


Fig. 7d

Figure 7d shows a sectional view of movement converter 41a in an unloaded position. Ex. 1006 ¶¶ 71. Figure 7d depicts seat 7 supported in part by leaf spring 21a acting on projection 22a on the underside of upper leg 77a, with leaf spring 21a supported by support 25a. *Id.* ¶¶ 70–71. Figure 7d also shows support 25a arranged on tooth slide 86, a linear or curvilinear rack or gear, which cooperates with toothed quadrant 87, a rotary gear. *Id.* ¶ 71. Leaf spring 91a forms part of a weighing mechanism interlinked with the leaf spring 21a mechanism such that adding weight to the seat causes rotation of the gears, a shortening of the distance between supports 25a and 22a contacting leaf spring 21a, and an increase in resistance to tilting seat 7. *See id.*

2. Discussion

Petitioner argues that Schmitz’s movement converters, including gears 86 and 87, meet the “plurality of gears” aspect of claim 1, including the functional aspects of the limitation. Pet. 36–41. Petitioner also argues that Schmitz “discloses ‘adjusting assembly’ if it is construed as a means-plus-function element” because Schmitz “discloses the same or equivalent structure that provides the same function, in substantially the same way, with substantially the same result.” *Id.* at 41–42. As part of its analysis, Petitioner relies on the similarity between the leaf springs used in Schmitz and the springs used in the Figure 3 embodiment of the ’753 patent, and the alleged equivalents between the two approaches. *See id.* at 42–43 (citing Ex. 1012 ¶¶ 114–120). Petitioner asserts that the spring structures in Schmitz “provide the claimed function of ‘increas[ing] a resistance to changing of the angular orientation of the back rest from the starting angular position’ as a result of a user sitting.” *Id.* at 43 (citing Ex. 1012 ¶¶ 114–116, 120) (alteration in original).

Patent Owner argues that Petitioner’s analysis does not establish that the embodiment in Schmitz that Petitioner relies on discloses the structure corresponding to the “adjusting assembly” in claim 1. *See* Prelim. Resp. 31–34. Patent Owner focuses its argument on its proposed construction of the “adjusting assembly,” which includes a linkage (identified as linkage 58 or 58’’ in Figures 3 and 9 of the ’753 patent) in direct contact with a leaf spring, and the alleged failure of Schmitz to disclose such a structure. *See id.*

A “challenger who seeks to demonstrate that a means-plus-function limitation was present in the prior art must prove that the corresponding

structure [appearing in the specification of the subject patent]—or an equivalent—was present in the prior art.” *Fresenius USA, Inc. v. Baxter Int’l, Inc.*, 582 F.3d 1288, 1299 (Fed. Cir. 2009) (citing *In re Donaldson Co.*, 16 F.3d 1189, 1193 (Fed. Cir. 1994) (en banc)). It is important to keep in mind, in the context of a means-plus-function limitation, that the “individual components, if any, of an overall structure that corresponds to the claimed function are not claim limitations” and “the claim limitation is the *overall* structure corresponding to the claimed function.” *Odetics, Inc. v. Storage Technology Corp.*, 185 F.3d 1259, 1267–68 (Fed. Cir. 1999) (emphasis added).

Here, a proper analysis requires a comparison between the overall corresponding structure we identified above, which includes, at a minimum, the arrangement of gears and springs in Figures 7 and 9 of the ’753 patent (and equivalents) that perform the claimed functions, to the overall structure in Schmitz that performs the claimed functions. Because Petitioner fails to identify the correct structure in the ’753 patent that performs the claimed functions, and relies on Figure 3 of the ’753 patent that does not include any gears that the claim requires, Petitioner fails to provide the required analysis between the relevant structures from Schmitz and the corresponding structures in the ’753 patent. *See* Pet. 36–44. Moreover, because the relevant structures in Schmitz and the ’753 patent do not appear to be the same, a proper analysis would seem to require an analysis of the potential equivalence between the overall structures in Schmitz and the corresponding structures in the ’753 patent, but the Petition and accompanying declaration do not address this issue. *See id.* Instead, the only “equivalents” analysis

focuses on the springs used in Schmitz and the '753 patent. *See id.* at 41–43; Ex. 1012 ¶¶ 117–118.

We acknowledge that the Petition does provide an analysis of Schmitz's gears and the way in which they work when asserting that Schmitz discloses the claimed "plurality of gears," as well as a description of Schmitz's springs and the way in which they work to perform aspects of the claimed functions. *See* Pet. 36–43. This analysis, however, does not compare those structures to the correct corresponding overall structures in the '753 patent and allege, much less establish, that the relevant structures that carry out the claimed functions are the same as or equivalent to one another. *See id.*

Further, and apart from the failure to address the role of the gears in performing the claimed function, the Petition also takes an overly simplified approach to the role of the springs in the '753 patent and how they perform the claimed function. The springs, standing alone, cannot perform the claimed function; they are mounted in a particular manner and interact with other structures to perform the claimed functions. *See, e.g.,* Ex. 1001, Figs. 3, 7, 6:20–7:47, 7:59–8:2. As noted above, we need not reach whether linkage 58 is part of the corresponding structure in the '753 patent as Patent Owner alleges, but we agree with Patent Owner that Petitioner must provide some additional context and explanation as to how the springs in the '753 patent work and perform the claimed function and then compare that overall structure to the structure in Schmitz, which involves more than simply finding similar springs, in isolation, in the respective structures. *See* Pet. 42–43. The failure to perform that analysis also supports denial of institution here. *See* Prelim. Resp. 31–33.

Based on the foregoing, we determine that Petitioner has not established a reasonable likelihood of establishing that Schmitz anticipates claim 1. For the same reasons, we determine that Petitioner has not established that any of the challenged dependent claims 2–6, 8–14, and 18–22 are anticipated by Schmitz.

E. Anticipation Based on Takamatsu

Petitioner argues that Schmitz anticipates all of the limitations of claims 1–3, 7, 15, and 17. *See* Pet. 69–90. Patent Owner disagrees. Prelim. Resp. 34–38. We first provide an overview of Takamatsu, and then address the parties’ arguments.

1. Takamatsu

Takamatsu “relates generally to chairs” and, “[m]ore particularly, . . . to a chair of the type wherein at least the seat back are designed to be tiltable rearwardly against a spring or springs.” Ex. 1007, 1:6–10. Further, Takamatsu “provide[s] a tilting control assembly for a chair,” comprising:

tilting control spring means for elastically supporting the seat back against rearward tilting thereof via load applying means; and displacing means responsive to a downward load applied to the seat for causing relative displacement between the tilting control spring means and the load applying means in a manner such that the tilting control spring means provides a progressively larger supportive force as the downward load increases; wherein the tilting control assembly further comprises lock means for preventing reverse relative movement between the tilting control spring means and the load applying means at least while the seat back is rearwardly tilted.

Id. at 1:58–2:7.

2. Discussion

The parties’ arguments and our analysis of this challenge generally mirrors that above in the context of Petitioner’s challenge based on Schmitz.

Petitioner argues that Takamatsu discloses “gears that cooperate when the seat moves from the first position into the loaded position” and meet the “plurality of gears” limitation of claim 1. *See* Pet. 80–88 (citing Ex. 1012, ¶¶ 248–258). Petitioner also argues that Takamatsu “discloses ‘adjusting assembly’ if it is construed as a means-plus-function element” because Takamatsu “discloses the same or equivalent structure that provides the same function, in substantially the same way, with substantially the same results.” *Id.* at 83 (citing Ex. 1012 ¶¶ 259–262). As part of its analysis, Petitioner relies on the similarity between the springs used in Takamatsu and the springs used in the Figure 3 embodiment of the ’753 patent, and the alleged equivalents between the two approaches. *See id.* at 83–85 (citing Ex. 1012 ¶¶ 259–261). Petitioner asserts that the spring structures in Takamatsu “provide the claimed function of ‘increas[ing] a resistance to changing of the angular orientation of the back rest from the starting angular position’ as a result of a user sitting.” *Id.* at 85–86 (citing Ex. 1012 ¶ 262) (alteration in original).

Patent Owner argues that Petitioner’s analysis does not establish that the embodiment in Takamatsu that Petitioner relies on discloses the structure corresponding to the “adjusting assembly” in claim 1. *See* Prelim. Resp. 34–38. Patent Owner focuses its argument on its proposed construction of the “adjusting assembly,” which includes a linkage in direct contact with a leaf spring, and the alleged failure of Takamatsu to disclose such a structure. *See id.*

As noted above, a proper analysis addressing whether Takamatsu discloses the “adjusting assembly” limitation requires a comparison between the corresponding structure, which includes, at a minimum, the overall

arrangement of gears and springs in Figures 7 and 9 of the '753 patent (and equivalents) that perform the claimed functions, to the structure in Takamatsu. Because Petitioner fails to identify the correct structure in the '753 patent that performs the claimed functions, and relies on Figure 3 that does not include any gears, Petitioner fails to provide the required analysis between the relevant structures from Takamatsu and the corresponding structure in the '753 patent. Because the structures in Takamatsu and the '753 patent do not appear to be the same, such an analysis would seem to require an analysis of the potential equivalence between the structures in Takamatsu and the corresponding structures in the '753 patent, but the Petition and accompanying declaration do not address this issue. *See* Pet. 80–86. Instead, the only “equivalents” analysis focuses on the springs used in Takamatsu and the '753 patent. *See* Pet. 83–85; Ex. 1012 ¶¶ 259–261.

The Petition provides an analysis of Takamatsu’s gears and the way in which they work when asserting that Takamatsu discloses the claimed “plurality of gears,” as well as a description of Takamatsu’s springs and the way in which they work to perform aspects of the claimed functions. *See* Pet. 80–85. As noted above, such an analysis does not properly compare the relevant overall structures from Takamatsu to the correct corresponding structures in the '753 patent and allege, much less establish, that the structures that carry out the claimed functions are the same as or equivalent to one another. *See id.*

In addition, as above, the Petition’s overly simplified approach to the role of the springs in the '753 patent and how they perform the claimed function provides a separate reason to find Petitioner’s arguments and evidence lacking. Because the springs of the '753 patent, standing alone and

in isolation, cannot perform the claimed function, Petitioner must provide some additional context and explanation as to how the springs in the '753 patent work and perform the claimed function and then compare that overall structure to the structure in Takamatsu. *See, e.g.*, Ex. 1001, Figs. 3, 7, 6:20–7:47, 7:59–8:2. It is not enough to allege that the two structures both employ springs without addressing other related structures that impact how the springs achieve the claimed functions in the respective designs. *See* Pet. 82–85; Prelim. Resp. 34–38 (arguing that Petitioner fails to compare the correct structures in each design; “equivalency in the context of the full corresponding structure has not been established”).

Based on the foregoing, we determine that Petitioner has not established a reasonable likelihood of establishing that Takamatsu anticipates claim 1. For the same reasons, we determine that Petitioner has not established that any of the challenged dependent claims 2, 3, 7, 15, and 17 are anticipated by Takamatsu.

F. Discretionary Denial

Patent Owner also contends that we should exercise our discretion to deny institution for several reasons. *See* Prelim. Resp. 39–45. We need not reach Patent Owner’s contentions concerning discretionary denial because Petitioner has not established a reasonable likelihood of prevailing in demonstrating the unpatentability of any challenged claim of the '753 patent.

CONCLUSION

After considering the evidence and arguments presented in the current record, we determine that Petitioner has not demonstrated a reasonable likelihood that it would prevail with respect to at least one claim of the '753

IPR2023-01427
Patent 10,893,753 B2

patent challenged in the Petition. Therefore, we do not institute *inter partes* review.

ORDER

Accordingly, it is

ORDERED that the Petition is denied and no *inter partes* review is instituted.

IPR2023-01427
Patent 10,893,753 B2

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