

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FTC SOLAR, INC.,
Petitioner,

v.

FCX SOLAR, LLC,
Patent Owner.

IPR2022-01101
Patent 10,903,782 B2

Before DONNA M. PRAISS, CHRISTOPHER M. KAISER,
and ELIZABETH M. ROESEL, *Administrative Patent Judges*.

PRAISS, *Administrative Patent Judge*.

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

INTRODUCTION

A. Background

FTC Solar, Inc. (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting an *inter partes* review of claims 1–20 of U.S. Patent No. 10,903,782 B2 (Ex. 1001, “the ’782 patent”). FCX Solar, LLC (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”).

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) (2020). 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 Petition, the Preliminary Response, and the evidence of record, we determine that Petitioner has not demonstrated a reasonable likelihood that it would prevail with respect to at least one challenged claim. Accordingly, we do not institute an *inter partes* review of any challenged claim on any asserted ground.

B. Related Matters

The parties identify as related matters currently pending consolidated civil actions captioned *FCX Solar, LLC v. FTC Solar, Inc.*, Nos. 21-cv-3556-RA-VF and 21-cv-8766-RA (S.D.N.Y.) (collectively “the litigation”). Pet. 1; Paper 4, 1.

C. The Asserted Grounds of Unpatentability

Petitioner contends that claims 1–19¹ of the '782 patent are unpatentable based on the following grounds (Pet. 32–80):²

Claim(s) Challenged	35 U.S.C. § ³	Reference(s)/Basis
1–7, 9–14, 16–19	103	Kull, ⁴ Schmidt ⁵
1–19	103	Childress, ⁶ Schmidt
1–4, 6, 9–11, 13, 16–19	102	Kull

D. The '782 Patent

The '782 patent, titled “Solar Tracker System,” issued on January 26, 2021. Ex. 1001, codes (45), (54). According to the patent, photovoltaic

¹ Claim 20 has been disclaimed pursuant to 35 U.S.C. § 253 and 37 C.F.R. § 1.321(a). Prelim. Resp. 2; Ex. 2001. Notably, claim 20 does not recite claim 1’s “first damping ratio” and “second damping ratio.” *Compare* Ex. 1001, 6:9–17, *with* Ex. 1001, 8:26–44. In view of the statutory disclaimer of claim 20, we do not include it in the asserted challenges.

² Petitioner also relies on the Declaration of Daniel S. Codd, Ph.D. (Ex. 1003).

³ The '782 patent has an effective filing date after March 16, 2013. Ex. 1001 codes (22), (60), (63). Accordingly, patentability is governed by the versions of 35 U.S.C. §§ 102 and 103 as amended by the Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, 125 Stat. 284 (2011).

⁴ US 10,648,528 B2, issued May 12, 2020. (Ex. 1007). Petitioner asserts that Kull is entitled to an effective filing date of September 7, 2017, by virtue of provisional application 62/555,327 filed September 7, 2017 (Ex. 1008) to which priority is claimed. Pet. 9; Ex. 1007, code (60). Petitioner supports this assertion on the basis that Kull’s claim 1 is almost identical to the provisional application’s claim 1. *Id.* at 12 n.7 (“the Kull Provisional’s claim 1 includes a typo (‘the piston having a including a [sic] bypass groove’)”); Ex. 1007, 8:62–9:22; Ex. 1008, 16. Petitioner also provides parallel citations in the Petition to both Kull and Kull’s provisional application. Pet. 18.

⁵ US 7,584,829 B2, issued Sept. 8, 2009 (Ex. 1010).

⁶ US 2018/0013380 A1, pub. Jan. 11, 2018 (Ex. 1009).

power systems track the sun to increase the amount of energy produced by the system by rotating photovoltaic modules around an axis, principally oriented north to south, and tilting the modules as much as 60 degrees towards the east and west throughout the day. *Id.* at 1:19–27. The '782 patent describes a common configuration of a single-axis tracker as having a single actuator near the center of a row of photovoltaic modules with potentially 80–120 modules tilted by a single actuator. *Id.* at 1: 29–32. The '782 patent describes environmental conditions, such as wind and snow, interfering with the intended tilt angle and requiring design considerations. *Id.* at 1:35–39. According to the '782 patent, active control systems, such as when actuators in a row stop working when one actuator fails, bring additional failure modes that must be considered in the design of a system. *Id.* at 1:43–49.

The '782 patent describes a photovoltaic system comprising a damper for resisting movement of the photovoltaic modules relative to the base, which damper has different damping ratios under different operating states. *Id.* at 2:56–3:5. According to the patent, a high damping ratio enables the damper to dissipate more energy and better mitigate undesired oscillations under wind loading, but may cause high enough resistance to the movement of the actuator causing the photovoltaic module to twist away from its intended orientation. *Id.* at 3:5–16. The patent describes lower damping ratios as providing lower resistance to movement of the actuator in that situation, thereby reducing such a twist. *Id.* at 3:20–22. The '782 patent states that a damper can have a first damping ratio when the photovoltaic modules move at a first rate and a second damping ratio, higher than the first damping ratio, during a second movement rate of the photovoltaic modules

that is higher than the first rate. *Id.* at 3:23–27. The '782 patent describes changing the damping ratio passively based on the operating state of the actuator, such as the actuator rate, without active control by the controller. *Id.* at 3:41–45.

E. Illustrative Claim

Claims 1–19 of the '782 patent, which constitute all of the '782 patent claims that are not statutorily disclaimed, are challenged. Claims 1, 11, and 19 are independent claims. Claim 1 is illustrative. We reproduce claim 1 below:

1. A photovoltaic system, comprising:
 - a collection of photovoltaic modules;
 - a base supporting the collection of photovoltaic modules;
 - and
 - a damper coupled between the collection of photovoltaic modules and the base and resisting movement of the photovoltaic modules relative to the base, the damper having a first damping ratio when the collection of photovoltaic modules moves at a first rate relative to the base and a second damping ratio when the collection of photovoltaic modules moves at a second rate relative to the base, wherein the damper passively transitions from the first damping ratio to the second damping ratio;
- the second damping ratio being greater than the first damping ratio; and
- the damper comprising:
 - a damper chamber containing a fluid; and
 - a damper piston movable through the fluid inside the damper chamber, the damper piston including:
 - a first port;
 - a second port; and

a valve, configured to passively open or close the second port.

Ex. 1001, 6:2–25.

ANALYSIS

A. Level of Ordinary Skill in the Art

Petitioner asserts that a person of ordinary skill in the art (POSITA) “would have had at least an undergraduate degree in mechanical engineering, physics, or a similar discipline, and at least three to five years of work experience designing, analyzing, or evaluating solar trackers.” Pet. 6 (citing Ex. 1003 ¶¶ 35–39). Patent Owner supplements Petitioner’s description of a POSITA to include as similar disciplines “applied aerodynamics, aerospace engineering, fluid dynamics, photovoltaic systems engineering” and asserts that a POSITA in the field of solar trackers would “enlist the expertise of a damper expert in designing the dampers to provide desired characteristics to trackers.” Prelim. Resp. 14. For the purposes of this Decision, we adopt Petitioner’s description of the level of one of ordinary skill in the art, as modified by Patent Owner; any differences between the parties’ descriptions do not affect our analysis. The level of ordinary skill in the art is also reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

B. Claim Construction

Petitioner provides claim interpretations for the following recitations in claim 1 (and all the independent claims): “damping ratio,” “the damper having a [first/second] damping ratio,” and “valve, configured to passively open or close the second port.” Pet. 6–9. Patent Owner informs us that the District Court issued an oral decision on claim construction in the litigation

adopting each of Patent Owner’s proposed constructions. Prelim. Resp. 15 (citing Ex. 2005). For purposes of this Decision, we adopt the District Court’s claim constructions as discussed below.

1. Damping Ratio and Damper Having a . . . Damping Ratio

Each party states that, in the District Court, the parties have agreed to construe “damping ratio” to mean “a ratio determined by dividing the actual damping coefficient of a system by the critical damping coefficient of the system.” Pet. 6; Prelim. Resp. 15. Petitioner’s position in the litigation, however, is that the recitations “first damping ratio” and “second damping ratio” are indefinite. *Id.* at 7, n.4. According to Petitioner, “damping ratio” is a system-wide parameter that is used “imprecisely” in the challenged claims to “signify the damping force provided by the damper to the system” and this “imprecision” contributes to the indefiniteness. *Id.* (emphasis omitted).

Petitioner does not propose a separate construction for the phrase, “damper having a [first/second] damping ratio.” Patent Owner, however, asserts that this phrase “refer[s] to the damper providing the photovoltaic system with two different damping ratios depending on the conditions.” Prelim. Resp. 16. Patent Owner argues that this construction is consistent with the specification. *Id.* (citing Ex. 1001, 2:56–58, 3:1–5).

In the litigation, the District Court determined that a person having ordinary skill in the art would understand “damping ratio” to refer to “the damper providing the photovoltaic system with different damping ratios depending on the conditions.” Ex. 2005, 6:15–20. The District Court noted that intrinsic evidence supports “references to a damper having a [damping] ratio are made in the context of a damper installed in a system and are not about a damper in isolation.” *Id.* at 6:21–25. The District Court also noted

that FTC's⁷ expert, Dr. Codd, recognized that "pluck testing is the primary tool for determining a damping ratio, and that a person of ordinary skill in the art would be familiar with how to perform pluck testing." *Id.* at 8:4–7. In view of the parties' agreed-upon definition of the term "damping ratio" and the District Court's claim construction analysis, we construe "damping ratio" to mean "a ratio determined by dividing the actual damping coefficient of a system by the critical damping coefficient of the system."

2. *"Valve, Configured to Passively Open or Close the Second Port"*

Petitioner argues that this term should be construed to mean "a valve that selectively closes the second port due to the piston moving at a higher speed, without instructions from a controller," which is the second of two alternative constructions Petitioner proposed in District Court. Pet. 7–8.⁸ Petitioner states that it applies this construction in its first two challenges. *Id.*

Patent Owner proposes the same construction here as it proposed in District Court, namely "a valve that opens or closes the second port in response to a change in pressure of flow of fluid." Prelim. Resp. 17–18. Petitioner states that it applies this construction in its third challenge. Pet. 8.

⁷ FTC is the defendant in the District Court and the petitioner here.

⁸ In the District Court, Petitioner's first alternative construction is that the recitation should be construed as a means-plus-function claim term having structure corresponding to valve 220 in Figures 2B and 2C that perform the function of selectively closing the second port due to the piston moving at a higher speed, without instructions from a controller. Pet. 8 n.5. Petitioner does not propose this construction for this proceeding.

Patent Owner directs us to the District Court’s rationale for choosing Patent Owner’s proposed claim construction for this term. Prelim. Resp. 18. The District Court noted that Petitioner’s proposed construction “omits the valve’s ability to open the second port and explicitly ties the valve’s function to the damper piston’s movement” effectively narrowing the plain and ordinary meaning of the claim term. *Id.* (quoting Ex. 2005, 10:2–10). We agree. The ’782 patent states that multiple configurations are possible to passively regulate fluid flow through a valve. Ex. 1001, 4:20–22 (“The damper 140 may have configurations other than that shown in FIGS. 2A–2C and may passively regulate the damping ratio in other manners” including “through multiple equally or differently sized ports”). Thus, the intrinsic evidence supports Patent Owner’s proposed claim construction that was adopted by the District Court. Accordingly, we also adopt Patent Owner’s claim construction for purposes of this Decision.

C. Asserted Obviousness Over Kull and Schmidt

Petitioner argues that claims 1–7, 9–14, and 16–19 of the ’782 patent would have been unpatentable as obvious over the combination of Kull with Schmidt. Pet. 32–56. Patent Owner disagrees. Prelim. Resp. 19–32.

Petitioner contends that Kull discloses a first damping ratio and a second damping ratio, with a passive transition between the two damping ratios, and with the second damping ratio being greater than the first damping ratio, as recited in the claims. Pet. 34–36 (addressing claim 1). For each of these claim recitations, Petitioner asserts that “when installed on Kull’s solar tracker, Schmidt’s progressive damper would also achieve this functionality.” *Id.*

Patent Owner argues that even though Petitioner purports to apply the agreed-upon definition for “damping ratio,” Petitioner equates “damping ratio” with “damping force” without any showing of whether or how the two parameters are related and without any support or showing as to how the recited “first damping ratio” and “second damping ratio” limitations are met by Kull’s first and second “damping forces.” Prelim. Resp. 19–22. Patent Owner argues, *inter alia*, that because each of claims 1–19 requires “the damper having a first damping ratio” and “the damper having . . . a second damping ratio,” we should deny institution for Petitioner’s failure to make the requisite showing based on the correct claim construction. *Id.* at 19.

As Patent Owner points out, because independent claims 1, 11, and 19 of the ’782 patent each recite “the damper having a first damping ratio” and “the damper . . . having a second damping ratio,” each of the dependent claims likewise incorporate these limitations. Ex. 1001, 6:8–11, 7:5–7, 8:7–10. 37 C.F.R. § 1.75(c). Therefore, to show the obviousness of any challenged claim, Petitioner must show that the asserted prior art teaches or suggests “the damper having a first damping ratio” and “the damper . . . having a second damping ratio.”

The Petition relies on Kull for this teaching. Pet. 34. Following the recitation of the claim language, the Petition quotes from this sentence in Kull’s disclosure:

The damper is configured to provide a first damping force during slow movement of the photovoltaic array and a second damping force during fast movement of the array, the second damping force being greater than the first damping force.

Ex. 1007, 2:8–12; Ex. 1008, 2 ¶ 4; Pet. 34 (citing Ex. 1007, 3:3–9, 6:39–48; Ex. 1008, 4 ¶ 3, 11 ¶ 1; Ex. 1003 ¶ 69). The next sentence in the Petition

turns to Schmidt's damper with "variable throttling site" stating that a POSITA "would understand the same predictable result [inferring Kull's first and second damping forces] when applying Schmidt's damper . . . on Kull's solar tracking system." Pet. 34 (citing Ex. 1010 Abstract, 1:55–88). The Petition concludes the discussion of this claim element with "[t]herefore, when installed on Kull's solar tracker, Schmidt's progressive damper would also achieve this functionality." *Id.* (citing Ex. 1003 ¶ 69).

As discussed above, Petitioner asserts that the term "damping ratio" has the agreed upon meaning "a ratio determined by dividing the actual damping coefficient of a system by the critical damping coefficient of the system." Pet. 6. Thus, the meaning of "damping ratio" has not been established on this record to be interchangeable with "damping force." Throughout the Petition, however, the claimed "damping ratio" is asserted to be disclosed by a "damping force." *See, e.g.*, Pet. 36 (quoting Ex. 1007, 2:8–12); Ex. 1008, 2 ¶ 4 ("Kull's damper provides a first and second damping ratio depending on the movement of the photovoltaic array, 'the second damping force being greater than the first damping force.'"). After quoting Kull's disclosure of a first and second "damping force" as support for a "damping ratio" on page 36, the Petition immediately moves on to discuss Schmidt's damper: that it is able to "achieve this functionality," that "Schmidt describes the mechanism by which the change in damping force is generated," and that a POSITA "would understand that Schmidt's damper achieves a first, and second increased damping force." *Id.* at 36. Neither the Petition nor the Codd Declaration provide any explanation how "damping force" relates to the recited "damping ratio" as that term has been defined.

In a footnote, the Petition states “‘damping ratio’ is a *system-wide* parameter that is used imprecisely in the claims of the ’782 Patent to signify the damping *force* provided by the damper to the system.” Pet. 7 n.4 (citing Ex. 1003 ¶ 40 n.7). Thus, the Petition acknowledges a difference between the terms “damping ratio” and “damping force.” The footnote concludes “[h]ere, Petitioner has adopted Patent Owner’s interpretation of ‘damping ratio’ to signify the damping force provided by the damper to the invariant system.” *Id.* Petitioner cites to paragraph 40 n.7 of the Codd Declaration to support its assertion, but that paragraph parrots the language in the Petition, and Dr. Codd does not provide the underlying facts supporting his testimony.⁹ *See* 37 C.F.R. § 42.65(a) (“Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.”).

While Petitioner would like us to infer that Kull’s “damping force” relates to the recited “damping ratio,” the record before us simply does not support the interchangeable use of “damping ratio” and “damping force” nor does Petitioner explain the relationship between the two. It may be that “damping force” relates to the actual damping coefficient of a system and the critical damping coefficient of a system, which values constitute the numerator and the denominator in the agreed upon definition of “damping ratio.” Pet. 6; Prelim. Resp. 15. Both the Petition and the Codd Declaration, however, presume rather than establish through calculations or other

⁹ Dr. Codd adds that a declaration was submitted in the district court litigation with regard to “first damping ratio” and “second damping ratio” being indefinite. Ex. 1003 ¶ 40 n.7. The Codd Declaration provides no citations to or further information from the referenced declaration submitted in the litigation.

explanation that Kull's disclosure of a damping force teaches or suggests the recited "damping ratio" required by each of the challenged claims.

According to the District Court's oral decision, Dr. Codd acknowledged that "pluck testing is the primary tool for determining a damping ratio."

Ex. 2005, 8:4–6. In this proceeding, the Petition and the Codd Declaration are silent about testing for a damping ratio and how such testing might correlate to or be influenced by the "damping force" that Kull discloses. Thus, the Petition is deficient in explaining why we should accept Kull's disclosure of "damping force" as the "damping ratio" required by the challenged claims.

It is also not clear to us on this record how modification of Kull's system with Schmidt's damper would have achieved the required "damper having a [first/second] damping ratio." Petitioner asserts that "damping ratio" is a system-wide parameter rather than a characteristic of a damper alone. Pet. 7 n.4; Ex. 1003 ¶ 40 n.7. Nevertheless, Petitioner modifies Kull's system, which is asserted to have the required "damping ratio" system parameter, by substituting Kull's damper with Schmidt's damper. Pet. 32 ("Substituting a damper having Schmidt's design for the existing dampers in Kull or Childress would have been simple and yielded predictable results."); Pet. 33 ("Schmidt's progressive damper, if installed on Kull's solar tracker, would also achieve [Kull's] functionality because it is a hydraulic vibration damper that provides a damping force."). After equating Kull's first damping force and second damping force to the recited "damper having a first damping ratio" and "damper having . . . a second damping ratio," respectively, Petitioner concludes a POSITA "would understand the same predictable result when applying Schmidt's damper with 'variable throttling

side’ on Kull’s solar tracking system.” Pet. 34. Petitioner’s substitution of Schmidt’s damper in Kull’s system thus also presumes “damping force” equates with “damping ratio” without adequately explaining why such a modification would have been expected to retain the system parameter “damping ratio” required by the challenged claims as defined in this proceeding.

Thus, Petitioner has not shown sufficiently that the combination of Kull and Schmidt teaches or suggests the recited “damping ratio” and “damper having a [first/second] damping ratio” in the challenged claims. Accordingly, Petitioner has not demonstrated a reasonable likelihood of prevailing on the obviousness of the challenged claims over the combination of Kull and Schmidt.

D. Asserted Obviousness Over Childress and Schmidt

Petitioner argues that claims 1–19 of the ’782 patent would have been unpatentable as obvious over the combination of Childress with Schmidt. Pet. 56–72. Patent Owner disagrees. Prelim. Resp. 19–26, 32–40.

As discussed above, because independent claims 1, 11, and 19 of the ’782 patent each recite “the damper having a first damping ratio” and “the damper . . . having a second damping ratio,” each of the dependent claims likewise incorporate these limitations. Ex. 1001, 6:8–11, 7:5–7, 8:7–10. 37 C.F.R. § 1.75(c). Therefore, to show the obviousness of any challenged claim, Petitioner must show that the asserted prior art teaches or suggests “the damper having a first damping ratio” and “the damper . . . having a second damping ratio.” The term “damping ratio” has the agreed upon

meaning “a ratio determined by dividing the actual damping coefficient of a system by the critical damping coefficient of the system.” Pet. 6.

The Petition’s combination of Childress and Schmidt appears to be a substitution of Schmidt’s damper in Childress’s solar tracker system. Pet. 32 (quoted above). The Petition asserts a POSITA “would have been motivated to use the progressive damper design in Schmidt to stabilize the solar tracker described in Childress.” *Id.* at 56 (stating this is a “simple substitution” and citing the Codd Declaration Ex. 1003 ¶ 133, which parrots the Petition). According to the Petition, Childress’s system includes “a damper capable of ‘flexible movement and/or fixed or *variable damping* during normal operation (i.e. tracking).” *Id.* at 60 (quoting Ex. 1009 ¶ 7). The Petition explains how Childress’s “variable damping” discloses the recited “damper having a first damping ratio . . . and a second damping ratio” with the following sentence:

A damper capable of “variable damping” will have a first damping ratio when the collection of photovoltaic modules moves at a first rate relative to the base and a second damping ratio when the collection of photovoltaic modules moves at a second rate relative to the base.

Pet. 60 (citing Codd Declaration Ex. 1003 ¶ 138). The Codd Declaration parrots the statement in the Petition and, like the Petition, in the next sentence asserts that Schmidt’s damper would achieve the same functionality when installed on Childress’s solar tracker. Ex. 1003 ¶ 138; Pet. 60.

Petitioner’s assertion that a damper capable of “variable damping” will have a first damping ratio and a second damping ratio as required by the claims is conclusory. The only support for Petitioner’s position that Childress’s “variable damping” disclosure teaches or suggests the required damper having a first and second “damping ratio” in the claimed system is

the identical conclusory statement by Dr. Codd. Pet. 60 (citing Codd Decl. Ex. 1003 ¶ 138). These statements do not provide any information why a POSITA would understand Childress's system having a damper capable of "variable damping" to have the requisite damping ratios as the term "damping ratio" has been defined in this proceeding. *See* 37 C.F.R. § 42.65(a) ("Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight."). Thus, we find Petitioner does not provide adequate support for its assertions regarding Childress's solar tracker system comprising a "damper having a first damping ratio . . . and a second damping ratio" as required by the challenged claims.

Regarding the substitution of Schmidt's damper in Childress's solar tracker in order to meet the claim requirements regarding the limitation of a "damper having a first damping ratio . . . and a second damping ratio," the Petition refers us back to the first challenge over the combination of Kull and Schmidt. Pet. 60–63. However, as discussed above, the first challenge equates "damping ratio" with "damping force" without adequately explaining or supporting the interchangeability of the term. *See, e.g.*, Pet. 36 ("Again, Schmidt describes the mechanism by which the change in damping force is generated.").

In view of Petitioner's assertion that "damping ratio" is a system-wide parameter rather than a characteristic of a damper alone, it is also unclear to us how substitution of the component asserted to provide the required system parameter would reasonably be expected to be successful in achieving the claimed invention. Pet. 7 n.4 ("'damping ratio' is a *system-wide* parameter"); Ex. 1003 ¶ 40 n.7 ("'damping ratio' is a *system-wide*

parameter”). Petitioner’s second challenge also proposes to modify a system asserted to have the required “damping ratio” system parameter by substituting in Schmidt’s damper. Pet. 60 (“When installed on Childress’s solar tracker, Schmidt’s progressive damper would also achieve [Childress’s] functionality for the reasons discussed . . . in Ground 1.”). The Petition is conclusory with respect to the substitution and lacks any explanation why a POSITA would reasonably expect the substitution to achieve the asserted system parameter required by the claims.

Here, the challenged claims require a “damper having a first damping ratio . . . and a second damping ratio.” Ex. 1001, 6:8–11, 7:5–7, 8:7–10. The cited prior art discloses a tracker system comprising a damper capable of “variable damping” (Childress), but the Petition does not relate “variable damping” in Childress’s system to “damping ratios” as claimed. Under these facts, in the absence of some explanation from Petitioner as to why the conclusion that a damper capable of variable damping provides the requisite damping ratios would be warranted, we cannot conclude that the disclosure in Childress supports the obviousness of the challenged claims. The present record provides no such explanation. Nor does the present record provide an explanation why substitution of Childress’s damper with Schmidt’s damper would have reasonably been expected to provide the requisite damping ratios in Childress’s system. Accordingly, we are not persuaded that Petitioner has shown sufficiently that the prior art teaches or suggests the “damping ratio” limitations present in all the challenged claims.

Thus, Petitioner has not shown sufficiently that the combination of Childress and Schmidt teaches or suggests the recited “damping ratio” and “damper having a [first/second] damping ratio” in the challenged claims.

Accordingly, Petitioner has not demonstrated a reasonable likelihood of prevailing on the obviousness of the challenged claims over the combination of Childress and Schmidt.

E. Asserted Anticipation By Kull

Petitioner argues that Kull anticipates claims 1–4, 6, 9–11, 13, and 16–19 of the '782 patent. Pet. 72–80. Patent Owner disagrees. Prelim. Resp. 19–26, 40–45.

Among other limitations, independent claims 1, 11, and 19 of the '782 patent recite “damper having a first damping ratio . . . and a second damping ratio.” Ex. 1001, 6:8–11, 7:5–7, 8:7–10. The remaining challenged claims all depend from claim 1 or claim 11. *Id.* at 6:26–36, 6:43–45, 6:53–7:16, 7:23–25, 7:33–8:25. Accordingly, all of the challenged claims incorporate the limitations of claims 1 or 11. 37 C.F.R. § 1.75(c). Therefore, to show the anticipation of any challenged claim, Petitioner must show that the asserted prior art teaches or suggests a “damper having a first damping ratio . . . and a second damping ratio.”

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros., Inc. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987). “Inherency, however, 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.” *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999) (citations and internal quotation marks omitted); *see PAR Pharm., Inc. v. TWI Pharms., Inc.*, 773 F.3d 1186, 1195–96 (Fed. Cir. 2014) (inherency “may not be established by probabilities or

possibilities.”). The proper inquiry for inherent anticipation is whether the claimed limitations “necessarily result” from practicing Kull. *See, e.g., Allergan, Inc. v. Apotex Inc.*, 754 F.3d 952, 960–61 (Fed. Cir. 2014) (affirming judgment that claims were not inherently anticipated where the prior art only showed that the limitation might occur, not that it inevitably occurred).

Petitioner’s contention is based on “Ground 1’s discussion of how Kull’s solar-tracker system discloses most of the [claimed elements] and Ground 3 further shows that Kull also meets the specific damper-related elements of those claims under Patent Owner’s proposed construction of the ‘valve’ term.” Pet. 73. Petitioner additionally asserts that Kull discloses a damper having first and second ports as well as “a valve, configured to passively open or close the second port” under Patent Owner’s construction of this recited claim element, which we adopt. *Id.* at 73, 75–77.

As discussed above, Petitioner does not adequately explain how Kull discloses the “damping ratio” and “damper having a first damping ratio . . . and a second damping ratio” as required by each of the challenged claims. On the present record, “damping ratio” means “a ratio determined by dividing the actual damping coefficient of a system by the critical damping coefficient of the system.” Pet. 7. Consequently, this interpretation applies to the phrase “damper having a first damping ratio . . . and a second damping ratio” with the understanding that the damper is installed in a system and is not a damper in isolation. Ex. 2005, 6:21–25. Petitioner does not explain why the anticipation of a claim requiring a “damping ratio” having an explicit definition is supported by Kull, which teaches “damping force.” Pet. 34. In the absence of some explanation from Petitioner as to why the

conclusion a “damping force” equates to a “damping ratio” would be warranted, we cannot conclude that Kull’s disclosure supports the asserted anticipation of the challenged claims. The present record provides no such explanation.

Accordingly, we are not persuaded that Petitioner has shown sufficiently that Kull discloses the “damping ratio” limitations present in all the challenged claims, either expressly or inherently.

In addition, independent claims 1, 11, and 19 of the ’782 patent require the damper to have “a first port; a second port; and a valve, configured to passively open or close the second port.” Ex. 1001, 6:22–25, 7:13–16, 8:20–23. The remaining challenged claims all depend from claim 1 or claim 11. *Id.* at 6:26–36, 6:43–45, 6:53–7:16, 7:23–25, 7:33–8:25. Accordingly, all of the challenged claims incorporate the limitations of claims 1 or 11. 37 C.F.R. § 1.75(c). Therefore, to show the anticipation of any challenged claim, Petitioner also must show that Kull teaches or suggests “a first port; a second port; and a valve, configured to passively open or close the second port.”

The record in this proceeding does not support Petitioner’s assertion that Kull’s Figure 3B discloses multiple ports. Pet. 76. As Patent Owner points out, Kull’s Figure 3B indicates fluid flow with directional arrows (410) through only one of the circles in the figure without any identification or discussion of the other circles in the corresponding description suggesting more than one port is shown. Prelim. Resp. 41–42; Ex. 1007, Fig. 3, 6:30–48. The corresponding text refers to a singular port, bypass groove 340. Ex. 1007, 6:30–48 (“FIG. 3B illustrates . . . the washer 320 removed to show the flow of fluid 410 through the bypass groove 340.”). Petitioner identifies

Kull's bypass groove 340 as both the "first port" and the "second port" required by claim 1. Pet. 75 ("Kull discloses a damper having a first port: 'bypass groove 340'"), 77 ("Kull discloses a valve (washer 320) that opens the second port (bypass groove 340)"). Because the Petition identifies only a single port, the Petition's assertion that Kull's valve opens this one port in response to a change in pressure of flow of fluid does not adequately explain how Kull discloses the required "valve, configured to passively open or close the second port" as required by claim 1 and each of the challenged claims.

Accordingly, we are not persuaded that Petitioner has shown sufficiently that Kull discloses, either expressly or inherently, the recited "second port" and "valve, configured to passively open or close the second port" limitations present in all the challenged claims.

F. Summary

Petitioner does not demonstrate a reasonable likelihood of prevailing in showing that any challenged claim is unpatentable on any of the grounds asserted in its Petition.

CONCLUSION

Upon consideration of the Petition, the Preliminary Response, and the evidence presented, we determine that Petitioner has not shown a reasonable likelihood that it will prevail in showing that at least one of the challenged claims is unpatentable. Accordingly, we do not institute an *inter partes* review of any challenged claim based on any ground asserted in the Petition.

Because we deny institution based on the Petition's insufficiencies enumerated above, we need not address the balance of the parties' arguments.

ORDER

It is hereby

ORDERED that, pursuant to 35 U.S.C. § 314, the Petition is denied, and no *inter partes* review is instituted.

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For PETITIONER:

Marc Vander Tuig
Joseph J. Gribbin
ARMSTRONG TEASDALE LLP
mvandertuig@atllp.com
jgribbin@atllp.com

For PATENT OWNER:

Gene W. Lee
Matthew J. Moffa
PERKINS COIE LLP
lee-ptab@perkinscoie.com
moffa-ptab@perkinscoie.com