

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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YKK CORPORATION  
Petitioner,

v.

3M INNOVATIVE PROPERTIES CO.,  
Patent Owner.

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IPR2020-00699  
Patent 10,165,833 B2

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Before BARRY L. GROSSMAN, KEVIN W. CHERRY, and  
MATTHEW S. MEYERS, *Administrative Patent Judges*.

MEYERS, *Administrative Patent Judge*.

PRELIMINARY GUIDANCE  
PATENT OWNER'S MOTION TO AMEND

## I. INTRODUCTION

On September 14, 2020, we instituted trial as to claims 1–20 of U.S. Patent No. 10,165,833 B2 (Ex. 1001, “the ’833 patent”). Paper 8. After institution, Patent Owner filed a Contingent Motion to Amend. Paper 16 (“Motion” or “MTA”). In the Motion, Patent Owner requests that, should we determine in a final written decision that original claims 1–9 of the ’833 patent are unpatentable, we grant its motion to amend the ’833 patent to substitute proposed claims 21–27 for original claims 1–9. MTA 1. Petitioner filed an Opposition to the Motion. Paper 20 (“Opposition” or “Opp.”).

In the Motion, Patent Owner requested that we provide preliminary guidance concerning the Motion in accordance with the Board’s pilot program concerning motion to amend practice and procedures. Mot. 2; *see also* Notice Regarding a New Pilot Program Concerning Motion to Amend Practice and Procedures in Trial Proceedings under the America Invents Act before the Patent Trial and Appeal Board, 84 Fed. Reg. 9,497 (Mar. 15, 2019) (providing a patent owner with the option to receive preliminary guidance from the Board on its motion to amend) (“Notice”). We have considered Patent Owner’s Motion and Petitioner’s Opposition.

In this Preliminary Guidance, we provide information indicating our initial, preliminary, non-binding views on whether Patent Owner has shown a reasonable likelihood that it has satisfied the statutory and regulatory requirements associated with filing a motion to amend in an *inter partes* review and whether Petitioner (or the record) establishes a reasonable likelihood that the substitute claims are unpatentable. *See* 35 U.S.C. § 316(d); 37 C.F.R. § 42.121; *Lectrosonics, Inc. v Zaxcom, Inc.*, IPR2018-01129, 01130, Paper 15 (PTAB February 25, 2019) (precedential); *see also* Notice, 84 Fed. Reg. at 9,497 (“The preliminary

guidance . . . provides preliminary, non-binding guidance from the Board to the parties about the [motion to amend].”).

For purposes of this Preliminary Guidance, we focus on the proposed substitute claims, and specifically on the amendments proposed in the Motion. *See* Notice, 84 Fed. Reg. at 9,497. We do not address the patentability of the originally challenged claims. *Id.* Moreover, in formulating our preliminary views on the Motion and Opposition, we have not considered the parties’ other substantive papers on the underlying merits of Petitioner’s challenges. We have considered, however, our Institution Decision (Paper 8, “Dec.”) in determining whether the amendments “respond to a ground of unpatentability involved in the trial.” *Lectrosomics*, Paper 15 at 5. We emphasize that the views expressed in this Preliminary Guidance are subject to change upon consideration of the complete record, including any revision to the Motion filed by Patent Owner. Thus, this Preliminary Guidance is not binding on the Board when rendering a final written decision. *See* Notice, 84 Fed. Reg. at 9,500.

## II. PRELIMINARY GUIDANCE

### A. Statutory and Regulatory Requirements

For the reasons discussed below, at this stage of the proceeding, and based on the current record, it appears that Patent Owner has not shown a reasonable likelihood that it has satisfied the statutory and regulatory requirements associated with filing a motion to amend.

#### 1. *Reasonable Number of Substitute Claims*

Does Patent Owner propose a reasonable number of substitute claims? (35 U.S.C. § 316(d)(1)(B))
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Yes. Patent Owner proposes no more than one substitute claim for each challenged claim. MTA 3–4. Petitioner does not argue otherwise. <i>See</i>
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*generally* Opp. Thus, Patent Owner proposes a reasonable number of substitute claims.

## 2. Respond to Ground of Unpatentability

Does the Motion respond to a ground of unpatentability involved in the trial? (37 C.F.R. § 42.121(a)(2)(i))

Yes. Patent Owner presents the claim amendment in an attempt to add features to distinguish proposed substitute claims 21–27 as patentable over the references asserted in the instituted grounds for original claims 1–20. MTA 23–25.

Petitioner contends that “[t]he proposed amended claims . . . do not address Petitioner’s grounds of unpatentability raised in the Petition.” Opp. 13.

Petitioner’s argument is not persuasive. Patent Owner’s amendment responds to Petitioner’s ground of unpatentability for at least independent claim 1, which previously did not require the combination of limitations presented by proposed substitute claim 21. Thus, Patent Owner’s Motion responds to at least one ground of unpatentability.

## 3. Scope of Amended Claims

Does the amendment seek to enlarge the scope of the claims? (35 U.S.C. § 316(d)(3); 37 C.F.R. § 42.121(a)(2)(ii))

No. Each of the proposed substitute claims 21–27 includes narrowing limitations. Petitioner does not argue otherwise. *See generally* Opp. Although proposed claim 26 deletes the “overhang distance” limitation of original dependent claim 6, it appears that the deleted language (regarding cap overhang distance beyond the post) is added to proposed claim 27 which depends on proposed claim 26. MTA 30–31.

## 4. New Matter

Does the amendment seek to add new subject matter? (35 U.S.C. § 316(d)(3); 37 C.F.R. § 42.121(a)(2)(ii))

Yes. On this record, Patent Owner does not appear to set forth adequate written description support in the application as filed (“the ’648

application”) for the amendments in proposed substitute independent claims 21, 24, and 26.

In two tables on pages 5 through 23 of the Motion, Patent Owner identifies support for each limitation of the proposed substitute claims in provisional application 61/535,639 (’639 provisional) and PCT application US2012/055072 (’072 PCT), which are incorporated by reference in the ’648 application, and to which the ’833 patent claims priority. Ex. 1001, 1:8–13.

Each of proposed substitute independent claims 21, 24, and 26 recites fastening elements capable of loop-engaging with a minimum shear strength when engaged with a specified sample material. Specifically, proposed substitute claim 21 recites “a shear strength of at least 2000 gram-force when engaged with low-loft nonwoven loop material Sample 1” (MTA 27), proposed substitute claim 24 recites “a shear strength of at least 1100 gram-force when engaged with low-loft nonwoven loop material Sample 2” (*id.* at 29), and proposed substitute claim 26 recites “a shear strength of at least 850 gram-force when engaged with low-loft nonwoven loop material Sample 3” (*id.* at 31).

As support for these limitations, Patent Owner points to various disclosures in the ’639 provisional. *See* MTA 7–10, 15, 18–19. For example, Patent Owner points to the ’639 provisional’s disclosure that “the mechanical fastener engages with the loop material with a shear strength of at least 2000 gram-force.” *Id.* at 8 (citing Ex. 2011, 17:28–31, 22:4–8; 34:15–18 (claim 12)). Patent Owner also relies on Table 6 of the ’639 provisional as providing, for example, “[e]xperimental results showing loop-engaging shear performance of at least 2000 gram-force against Sample 1 for Examples 3, 5–8, 10–11, 13–15.” *See id.* at 9 (discussing proposed substitute claim 21), 15 (discussing claim 24), 18 (discussing claim 26).

Petitioner argues that the proposed substitute claims lack written description support for the quantified shear strength limitations at least because the disclosure relied upon by Patent Owner does not support an unbounded shear strength. *Id.* at 7–8. We agree.

Although Patent Owner has shown that the ’639 provisional provides literal support for each of the limitations at issue (e.g., “a shear strength of at least 2000 gram-force”), that alone is not sufficient.

The test for determining compliance with the written description requirement is not simply the presence or absence of literal support in the specification for the claim language, but rather, whether the disclosure of the application as originally filed reasonably conveys to a person of ordinary skill in the art that the inventor had possession of the claimed subject matter at the time of filing. *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc); *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563 (Fed. Cir. 1991); *In re Kaslow*, 707 F.2d 1366, 1375 (Fed. Cir. 1983). It is well settled that the written description requirement of § 112 requires the disclosure to convey that Patent Owner had possession of the entire range. *In re Lukach*, 442 F.2d 967, 969 (CCPA 1971) (a single value within a range does not provide support for the entire range).

Each of proposed substitute independent claims 21, 24, and 26 recites fastening elements capable of loop-engaging with a minimum shear strength and no maximum. In fact, none of the proposed substitute claims places any upper boundary on the claimed range of shear strength. Thus, proposed substitute claim 21 encompasses a shear strength range between 2000 and infinity gram-force, claim 24 encompasses a shear strength range between 1100 and infinity, and claim 26 encompasses a shear strength range between 850 and infinity.

On this record, we do not see how the disclosure in the '639 disclosure and '072 PCT of a fastener that engages “with a shear strength of at least 2000 gram-force” reasonably conveys to a person of ordinary skill in the art that the inventors had possession of the entire range encompassed by the proposed substitute claims, from the respective minimum gram-force to an unbounded upper limit.

Patent Owner relies on Table 6 as providing support for the claimed shear strength range, specifically Examples 3, 5–8, 10, 11, and 13–15 of Table 6. MTA 9; *see also* Ex. 1001, 23:16–46. Yet, Table 6 identifies a *maximum* load achieved by the experimental results. The highest maximum load achieved for Sample 1 disclosed in Table 6 is 3242 gram-force (gf) for Example 13. Ex. 1001, 23:34. The cited disclosure does not provide any examples having a shear strength above 3242, i.e., between 3242 gram-force and infinity as encompassed by each of claims 21, 24, and 26. Without further explanation and evidence from Patent Owner, it appears that Patent Owner has not sufficiently shown that the cited examples reasonably convey to a person of ordinary skill in the art that the inventors

had possession of the entire range encompassed by the proposed substitute claims.

For purposes of this Preliminary Guidance, and based on the current record, we find that Patent Owner does not appear to demonstrate sufficient written description support for proposed substitute claims 21–27.

### B. Patentability

For the reasons discussed below, at this stage of the proceeding, and based on the current record,<sup>1</sup> it appears that Petitioner (or the record) has shown a reasonable likelihood that proposed substitute claims 21–27 are unpatentable.

Does the record establish a reasonable likelihood that the proposed substitute claims are unpatentable?

#### *a. Written Description*

Yes. For the purposes of this Preliminary Guidance and based on the current record, Petitioner appears to have shown that there is a reasonable likelihood that proposed substitute claims 21–27 lack written description support.

Petitioner argues that proposed substitute claims 21–27 are not supported by adequate written description in the '833 patent's disclosure. Opp. 1–8. As discussed above under section II.A.4 “New Matter,” the disclosure relied upon by Patent Owner does not appear to reasonably convey to a person of ordinary skill in the art that the inventors had possession of the claimed subject matter at the time of filing.

Thus, for the reasons discussed above, and for the limited purposes of this Preliminary Guidance, it appears that Patent Owner has not set forth adequate written description support for proposed substitute independent claims 21, 24, and 26, and proposed substitute claims 22, 23, 25, and 27 depending therefrom.

#### *b. Indefiniteness*

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<sup>1</sup> We express no view on the patentability of original claims 1–20 in this Preliminary Guidance. Instead, we focus on limitations added to those claims in the Patent Owner's Motion to Amend.

Yes. For the purposes of this Preliminary Guidance and based on the current record, Petitioner appears to have shown a reasonable likelihood that proposed substitute claims 21–27 are indefinite.

We evaluate indefiniteness in AIA proceedings, including when evaluating the indefiniteness of proposed substitute claims in an MTA, using the same indefiniteness standard as used in federal courts under *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898 (2014) and its progeny. See USPTO Memorandum, Approach to Indefiniteness under 35 U.S.C. § 112 in AIA Post-Grant Proceedings (Jan. 6, 2021) (explaining that “the Board shall . . . use the approach set forth by the Supreme Court in *Nautilus* and used by the district courts for assessing questions of indefiniteness in AIA post-grant proceedings”).<sup>2</sup> Under *Nautilus*, “[a] patent is invalid for indefiniteness if its claims, read in light of the patent’s specification and prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus*, 572 U.S. at 898–99.

Petitioner makes several arguments asserting that the proposed substitute claims are indefinite. We address each of these arguments in turn.

*1. “About” Does Not Render the Claims Indefinite*

Petitioner argues that the term “about” as recited in proposed substitute claims 21, 24, and 26 renders these claims indefinite. Opp. 9–12. On this record, Petitioner’s argument does not appear to be persuasive.

Although the term “about” is a relative term, the use of relative terms does not automatically render a claim indefinite. See *Seattle Box Co., Inc. v. Industrial Crating & Packing, Inc.*, 731 F.2d 818, 826 (Fed. Cir. 1984). A finding of indefiniteness depends on whether one of ordinary skill in the art, after reading the claims and the disclosures of the Specification as a whole, would understand what is claimed. See *Nautilus*, 134 S. Ct. 2120, 2124. In this context, the term “about” in the proposed substitute claims (e.g., “a fiber diameter of about 19 micrometers” in claim 21) appears to satisfy the requirement that the claims “particularly point out and distinctly claim” the invention. Cf. *Ecolab Inc. v. Envirochem, Inc.*, 264 F.3d 1358, 1367 (Fed. Cir. 2001) (“like the term ‘about,’ the term ‘substantially’ is a descriptive term commonly used in patent claims to ‘avoid a strict numerical boundary to the specified parameter’”) (quoting *Pall Corp. v.*

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<sup>2</sup> Available at

<https://www.uspto.gov/sites/default/files/documents/IndefinitenessMemo.pdf>.

*Micron Separations, Inc.*, 66 F.3d 1211, 1217 (Fed. Cir. 1995)); *Verve, LLC v. Crane Cams, Inc.*, 311 F.3d 1116, 1120 (Fed. Cir. 2002) (“It is well established that when the term ‘substantially’ serves reasonably to describe the subject matter so that its scope would be understood by persons in the field of the invention, and to distinguish the claimed subject matter from the prior art, it is not indefinite.”).

## 2. “Sample” Renders the Claims Indefinite

Proposed substitute claims 21, 24, and 26 define the shear strength of their respective mechanical fasteners with reference to Samples 1, 2, and 3, respectively. More particularly, proposed substitute claim 21 recites “a shear strength of at least 2000 gram-force when engaged with low-loft nonwoven loop material Sample 1” (MTA, 27), claim 24 makes a similar recitation to “Sample 2” (*id.* at 29), and claim 26 makes a similar recitation to “Sample 3” (*id.* at 31). The ’833 patent describes Sample 1 as “PREVAIL BREEZERS” commercially available from First Quality Corporation, Sample 2 as “TENA ULTRA” from the SCA Corporation, and Sample 3 as “RESTORE” from Medline Industries. Ex. 1001, 22:19–31.

Petitioner argues that “although the proposed claims do not refer to the commercially available and loop material by trademark or trade name, since the respective Samples 1–3 are described in the specification as being portions of trademarked products, the claims’ recitation of Samples 1–3 is equivalent to reciting a trademark/trade name.” Opp. 12.

On this record, Petitioner’s argument appears to be persuasive. That is, Patent Owner’s use of the terms “Sample 1,” “Sample 2,” and “Sample 3” appears to reference commercially available products by their trademarked name, and as such, renders proposed substitute claims 21, 24, and 26 indefinite. For example, in order to determine whether a given mechanical fastener infringes proposed claim 21, a manufacturer would need to acquire “an adult diaper commercially available from First Quality Corporation, Great Neck, N.Y., under the trade designation ‘PREVAIL BREEZERS’” (Ex. 1001, 22:21–24) in order to measure the shear strength “according to ASTM D5169-98” as recited in claim 21.

As noted in the Manual of Patent Examining Procedure (MPEP):

The presence of a trademark or trade name in a claim is not, per se, improper under 35 U.S.C. 112, second paragraph, but the claim should be carefully analyzed to determine how the

mark or name is used in the claim. . . . If the trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of the 35 U.S.C. 112, second paragraph.

MPEP § 2173.05(u). Here, by reciting measurements performed using Sample 1, Sample 2, and Sample 3, which correspond to the trade names described in the '833 patent ("PREVAIL BREEZERS," "TENA ULTRA," and "RESTORE"), it appears that each of the proposed substitute claims intends to refer to a particular product, to which the claimed mechanical fastener is engaged, when measuring the shear strength of the claimed fastener. Consequently, because products change, it is unclear whether a particular sample of a given product that was commercially available in September of 2011 (when the '639 provisional was filed) would have the same measurements at a later date.

*c. Enablement*

Yes. For the purposes of this Preliminary Guidance and based on the current record, it appears that there is a reasonable likelihood that proposed substitute claims 21–27 are not enabled. Petitioner asserts that proposed substitute claims 21–27 are not enabled. Opp. 1–8. Petitioner argues first that claims 21, 24, and 26 are not enabled because Patent Owner's "selected examples cannot support the features in the proposed claims with respect to shear strength." *Id.* at 7. Petitioner also argues that claims 21, 24, and 26 are not enabled because "[e]ach of proposed independent claims 21, 24 and 26 recite[s] a respective shear strength range having a lower limit and an unbounded upper limit." *Id.* at 1. According to Petitioner, "Patentee has not cited to and, in fact, there is no support whatsoever in the '833 patent for an unbounded upper limit." *Id.* at 8.

At this stage of the proceeding, we are persuaded by Petitioner's argument that the written description of the '833 patent does not appear to enable a person of ordinary skill in the art to make and use the invention without experimentation, specifically the claimed shear strength improvement recited in proposed substitute claims 21, 24, and 26. Patent Owner does not adequately explain why Examples 3, 5–8, 10, 11, and 13–15, on which Patent Owner relies, meet the recited sheer strength requirement while other structurally similar Examples, such as Example 9, do not.

*d. Obviousness*

Yes. On this record, it appears that Petitioner has shown a reasonable likelihood that proposed substitute claims 21–27 would have been obvious over the references cited in the Opposition, as described below.

We note that Patent Owner’s proposed amendments simply add limitations from the originally challenged claims (with a few minor variations). For example, proposed substitute independent claim 21 incorporates limitations substantially similar to those present in original dependent claims 2 and 12. Proposed substitute claim 22 incorporates limitations substantially similar to those present in original claims 6 and 7, and proposed substitute claim 23 incorporates limitations present in original claims 3, 5, and 8. *See* MTA 27–28; *cf.* Ex. 1001, 26:11–27:12. We also note that on the current record, we tend to agree with Petitioner that proposed substitute claims 21, 24, and 26 do not require the presence of the “low-loft nonwoven loop material,” i.e., Samples 1–3. Claims 21, 24, and 26 appear to require only that the upstanding fastening elements of the mechanical fastener “are *capable of* loop-engaging” with a low-loft nonwoven loop material. We also tend to agree with Petitioner that the claimed Sample 1, Sample 2, and Sample 3 recited in substitute claims 21, 24, and 26, respectively, amount to Applicant Admitted Prior Art (AAPA). *See also* Dec. 45 (identifying AAPA). The ’833 patent describes Sample 1 as “PREVAIL BREEZERS” commercially available from First Quality Corporation, Sample 2 as “TENA ULTRA” from the SCA Corporation, and Sample 3 as “RESTORE” from Medline Industries. Ex. 1001, 22:19–31.

*a. Claims 21, 24, and 26 Over Petersen-1 and Applicant Admitted Prior Art (AAPA), as Evidenced by Manabe and Busam*

On this record, it appears Petitioner has established, by a reasonable likelihood, that at least Petersen-1 and AAPA renders substitute claims 21, 24, and 26 unpatentable. Opp. 13–22. Petitioner contends that Patent Owner “has not and cannot show any criticality regarding the height of the samples in the ’833 patent, generally, including Example 1.” *Id.* at 15. Petitioner also contends that “proposed claim 21 does not require a loop material having the characteristics of Sample 1 to be present.” *Id.* Petitioner, thus, contends that “Petersen-1 discloses all of the positively recited structural features of proposed claim 21.” *Id.* at 16 (citing Ex. 1003). Petitioner further contends that Samples 1, 2, and 3 recited in claims 21, 24, and 26, respectively, are admitted prior art. *Id.* at 16–19.

Manabe is a newly cited reference directed to a disposable diaper having a mechanical engagement type fastening tape 10. Ex. 1029, Abstract. Manabe discloses “the shear force with the fastening tape will be 1 kg to 10 kg, preferably 3 to 8 kg.” *Id.* ¶ 78. Manabe also discloses “a fastening base material having mushroom-shaped engagement tabs with a height of 285  $\mu\text{m}$ .” *Id.* ¶ 91. Petitioner relies on Manabe to show that Petersen-1’s fastener would have been capable of the claimed shear strength when engaged with a loop material as claimed. Opp. 19–20.

Thus, it appears that Petitioner has shown a reasonable likelihood that at least the combination of Petersen-1 and AAPA teaches or suggests the added limitations of proposed substitute claims 21, 24, and 26. It also appears, on this record, that Petitioner has shown a reasonable likelihood that a person of ordinary skill in the art would have had an apparent reason to combine the features of the Petersen-1 and AAPA. Opp. 18; *see also* Pet. 72 (citing Ex. 1002 ¶¶ 130–132); Dec. 45–46 (discussing Petersen-1 and AAPA), 57–58 (discussing Petersen-1 and Busam).

*b. Claims 21, 24, and 26 Over Petersen-1, AAPA, Miller and/or Daio-Seishi.*

On this record, Petitioner has shown a reasonable likelihood that proposed substitute claims 21, 24, and 26 would have been obvious over Petersen-1, AAPA, Miller, and Daio-Seishi. Opp. 22–23. Petitioner asserts that “Miller and/or Daio-Seishi also disclose the height range in proposed claim[s] 21, 24, and 26, and it would have been obvious to modify Petersen-1 in view of Miller and/or Daio-Seishi.” *Id.* at 22. According to Petitioner, “[t]he Petition and Reply discuss various rationales for combining these relevant disclosures.” *Id.* at 23; *see also id.* at 22–23 (citing Pet. 58–60, 73).

Thus, it appears that Petitioner has shown a reasonable likelihood that the combination of Petersen-1, AAPA, Miller, and/or Daio-Seishi teaches or suggests the added limitations of proposed substitute claims 21, 24, and 26. It also appears, on this record, that Petitioner has shown a reasonable likelihood that a person of ordinary skill in the art would have had an apparent reason to combine the features of the Petersen-1, AAPA, Miller, and/or Daio-Seishi for the reasons set forth in the Petition. *See* Pet. 58–67.

*c. Claims 22, 23, 25, and 27 Over Petersen-1, AAPA, and Miller as evidenced by Manabe and Busam*

On this record, Petitioner has shown a reasonable likelihood that proposed substitute claims 22, 23, 25, and 27 would have been obvious over Petersen-1, AAPA, and Miller as evidenced by Manabe and Busam. Opp. 23–24. Petitioner contends that “[a]ll of the additional features of claims 22, 23, 25, and 27 are disclosed by existing art of record.” *Id.* at 23 (citing Pet. 37–47, 50, 55, 69).

Thus, it appears that Petitioner has shown a reasonable likelihood that at least the combination of Petersen-1, AAPA, and Miller teaches or suggests the added limitations of proposed substitute claims 22, 23, 25, and 27. It also appears, on this record, that Petitioner has shown a reasonable likelihood that a person of ordinary skill in the art would have had an apparent reason to combine the features of the Petersen-1, AAPA, and Miller for the reasons set forth in the Petition. *See* Pet. 37–47, 50, 55, 69, 70.

*d. Claims 22, 23, 25, and 27 Over Petersen-1, AAPA, Miller, and Daio-Seishi as evidenced by Manabe and Busam*

On this record, Petitioner has shown a reasonable likelihood that proposed substitute claims 22, 23, 25, and 27 would have been obvious over Petersen-1, AAPA, Miller, and Daio-Seishi as evidenced by Manabe and Busam. Opp. 24–25. Petitioner contends that “Daio-Seishi provides further evidence that the resulting combination would necessarily meet the shear force requirements.” *Id.* at 25.

Thus, it appears that Petitioner has shown a reasonable likelihood that at least Petersen-1, AAPA, Miller, and Daio-Seishi teach or suggest the added limitations of proposed substitute claims 22, 23, 25, and 27. It also appears, on this record, that Petitioner has shown a reasonable likelihood that a person of ordinary skill in the art would have had an apparent reason to combine the features of the Petersen-1, AAPA, and Miller for the reasons set forth in the Petition. *See* Pet. 37–47, 50, 55, 59, 69, 70.

*e. Conclusion*

Based on the current record and assumptions described above, at this preliminary stage of the proceeding, it appears that Petitioner has shown a reasonable likelihood that proposed substitute claims 21–27 are unpatentable.

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