

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ATTENDS HEALTHCARE PRODUCTS, INC.,
Petitioner,

v.

PAUL HARTMANN AG,
Patent Owner.

IPR2020-01480
Patent 8,708,990 B2

Before PATRICK R. SCANLON, HYUN J. JUNG, and
NEIL T. POWELL, *Administrative Patent Judges*.

POWELL, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. BACKGROUND

Attends Healthcare Products, Inc. (“Petitioner”) filed a Petition for *inter partes* review of claims 1–21 of U.S. Patent No. 8,708,990 B2 (Ex. 1001, “the ’990 patent”). Paper 12 (“Pet.”).¹ Paul Hartmann AG (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”).

An *inter partes* review may not be instituted “unless . . . the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a) (2018). Having considered the arguments and the associated evidence presented in the Petition for the reasons described below, we institute *inter partes* review of all the challenged claims on all the grounds set forth in the Petition.

B. REAL PARTIES IN INTEREST

Petitioner identifies Attends Healthcare Products, Inc. and Domtar Corporation as the real parties in interest for the Petition. Pet. 1. Patent Owner identifies Paul Hartmann AG as the real party in interest. Paper 4, 1 (Patent Owner’s Mandatory Notices).

C. RELATED PROCEEDINGS

Petitioner identifies as related matters IPR2013-00173, IPR2020-01477, IPR2020-01478, and IPR2020-01479. Pet. 1.

¹ With our authorization (Paper 8), Petitioner filed a Motion to File Corrected Petition (Paper 9), and Patent Owner filed an Opposition to Petitioner’s Motion to File Corrected Petition (Paper 10). We granted Petitioner’s Motion (Paper 11), and a Corrected Petition was filed (Paper 12). Our citations to the Petition below are to the Corrected Petition.

D. THE '990 PATENT

The '990 patent relates to incontinence diapers. Ex. 1001, 1:13.

Figure 1 of the '990 patent is reproduced below.

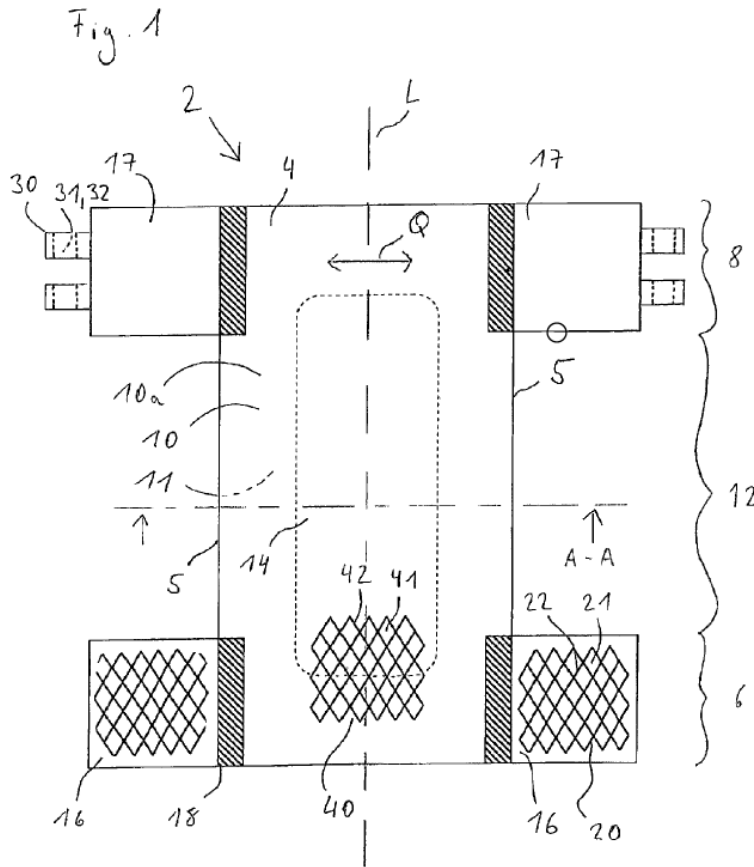


Figure 1 shows a top view of an outer face of an incontinence diaper.

Ex. 1001, 11:62–63, 12:17–18. Incontinence diaper 2 has main part 4 that consists of front area 6, crotch area 12, and rear area 8. *Id.* at 12:19–22.

Absorbent body 14 is between liquid-permeable topsheet 11 and liquid-impermeable backsheet 10. *Id.* at 12:22–26.

Incontinence diaper 2 also includes front side parts 16 and rear side parts 17 attached to main part 4. Ex. 1001, 12:31–32. Side parts 16, 17 can connect to each other by closure means 32 with mechanical closure aides 31 when incontinence diaper 2 is worn. *Id.* at 12:41–47. “The over-abdomen

retaining forces between the closure means 32 and the outer face of the side parts 16 . . . are higher than the over-abdomen retaining forces between the closure means 32 and the outer face of the backsheet nonwoven material component.” *Id.* at 13:43–46.

E. ILLUSTRATIVE CLAIM

Of the challenged claims, claims 1 and 21 are independent. Claims 2–20 depend directly or indirectly from claim 1.

Claim 1 is illustrative and is reproduced below with certain reformatting:²

1. [1[p]] An absorbent incontinence diaper for use on an adult user, comprising:

[1[a][1]] a chassis comprising a liquid-permeable topsheet which, when in use on said adult user, is directed toward a user body and a liquid impermeable backsheet which, when in use on said adult user, is directed away from the user body,

[1[a][2]] the backsheet having an outer face comprising a first nonwoven material having a first mass per unit area and having a first thickness;

[1[a][3]] said chassis having:

a front area which, when in use on said adult user, is located on a front of said adult user, said front area including a first front side and a second front side,

[1[a][4]] a rear area which, when in use on said adult user, is located on a rear of said adult user, said rear area including a first rear side and a second rear side, and

[1[a][5]] a crotch area located between the front area and the rear area;

² We have added carriage returns and numbered the claim limitations with the same numbers used by the Petition to identify claim 1’s limitations.

- [1[a][6] an absorbent body disposed between said liquid-permeable topsheet and said liquid impermeable backsheet;
- [1[b][1]] a pair of rear side parts, comprising
a first discrete side part joined at said first rear side of said chassis,
and
a second discrete side part joined at said second rear side of said chassis;
- [1[b][2]] a pair of front side parts, comprising
a third discrete side part joined at said first front side of said chassis,
and having an outer face comprising a second nonwoven material, and
a fourth discrete side part joined at said second front side of said chassis, and having an outer face comprising said second nonwoven material;
- [1[b][3]] said second nonwoven material has a second mass per unit area that is greater than said first mass per unit area of said first nonwoven material and has a second thickness which is greater than said first thickness of said first nonwoven material under a pressure of 0.5 kPa;
- [1[c][1]] a first closure aid, comprising a first mechanical closure aid, connected to said first discrete side part; said first closure aid configured for selective detachable fastening to said outer face of said backsheet and to said outer face of said third discrete side part;
- [1[c][2]] a second closure aid, comprising a second mechanical closure aid, connected to said second discrete side part; said second closure aid configured for selective detachable fastening to said outer face of said backsheet and to said outer face of said fourth discrete side part;
- [1[d][1]] wherein a retaining force between said first closure aid and said outer face of said backsheet when in use permits retention of said first closure aid for securing said diaper to said adult user and is lower than a retaining force between said first closure aid and said outer face of said third discrete side part; and

[1[d][2]] wherein a retaining force between said second closure aid and said outer face of said backsheet when in use permits retention of said second closure aid for securing said diaper to said adult user and is lower than a retaining force between said second closure aid and said outer face of said fourth discrete side part.

Ex. 1001, 15:61–16:54.

F. ASSERTED GROUNDS OF UNPATENTABILITY

Petitioner challenges the patentability of claims 1–21 of the '990 patent on the following grounds (Pet. 4–5):

| Claims Challenged | 35 U.S.C. § | References |
|--------------------------|---------------------|---|
| 1–7, 9–20 | 103(a) ³ | Karami '772 ⁴ , Benning ⁵ |

³ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. § 103. Because the '249 patent has an effective filing date prior to the effective date of the applicable AIA amendments, we refer to the pre-AIA versions of § 103.

⁴ Karami, U.S. Pub. No. 2006/0058772 A1, published Mar. 16, 2006 (Ex. 1003, “Karami '772”).

⁵ Benning et al., U.S. Pub. No. 2005/0256496 A1, published Nov. 17, 2005 (Ex. 1002, “Benning”).

| Claims Challenged | 35 U.S.C. § | References |
|--------------------------|--------------------|--|
| 1–7, 9–20 | 103(a) | Benning, Karami '626 ⁶ |
| 1–7, 9–11, 15–20 | 103(a) | Benning, Karami '626, Stupperich ⁷ |
| 8, 21 | 103(a) | Karami '772, Benning, Miyamoto '499 ⁸ |
| 8, 21 | 103(a) | Benning, Karami '626, Miyamoto '499 |

Petitioner relies on the Declaration of Arrigo D. Jezzi (Ex. 1012) in support of its unpatentability contentions.

II. ANALYSIS

A. CLAIM INTERPRETATION

In an *inter partes* review proceeding, a claim of a patent is construed using the same standard used in federal district court, including construing the claim in accordance with the ordinary and customary meaning of the claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. 37 C.F.R. § 42.100(b) (2019). According to the applicable standard, claim terms “are generally given their ordinary and customary meaning” as understood by a person of ordinary skill in the art in question at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc). “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of

⁶ Karami, U.S. Pub. No. 2003/0220626 A1, published Nov. 27, 2003 (Ex. 1004, “Karami '626”).

⁷ Stupperich et al., DE 10 2004 053 469 A1, published May 04, 2006 (Ex. 1009, “Stupperich”)

⁸ Miyamoto et al., U.S. Pub. No. 2004/0016499 A1, published Jan. 29, 2004 (Ex. 1005, “Miyamoto '499”).

record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17). Extrinsic evidence is “less significant than the intrinsic record in determining ‘the legally operative meaning of claim language.’” *Phillips*, 415 F.3d at 1317. Only those terms that are in controversy need be construed, and only to the extent necessary to resolve the controversy. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (citing *Vivid Techs., Inc. v. America Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Petitioner proposes constructions for certain claim terms. Pet. 22–23. Patent Owner does not propose claim constructions. *See generally*, Prelim. Resp.

We discern no terms in need of express interpretation to determine whether to institute *inter partes* review. At this stage of the proceeding, we apply the legal standards set forth above when reading the claims.

B. LEVEL OF ORDINARY SKILL

Petitioner asserts that a person of ordinary skill in the art “would have had a bachelor’s degree in chemistry, physics, mechanical, chemical, or process engineering, or a related degree, and 2-3 years of experience designing diapers.” Pet. 17. In support of this assertion, Petitioner cites Mr. Jezzi’s testimony. Ex. 1012 ¶ 18. Additionally, Petitioner argues that “[t]he prior art and ’990 patent also evidence this level of ordinary skill.” Pet. 17. At this stage, Patent Owner neither identifies expressly a level of ordinary skill in the art, nor disputes Petitioner’s asserted level of ordinary skill in the art. *See generally*, Prelim. Resp.

For purposes of deciding whether Petitioner has demonstrated a reasonable likelihood of establishing unpatentability of at least one claim, we adopt Petitioner’s assertion regarding the level of ordinary skill in the art. Consistent with Petitioner’s assertion, we find Petitioner’s proposed level of skill consistent with the disclosures of the ’990 patent, as well as the cited prior art references.

C. GROUND 1 – ALLEGED OBVIOUSNESS OVER KARAMI ’772 AND BENNING

1. *Overview of Karami ’772*

Karami ’772 relates to “an absorbent article having a fastening system that does not require a conventional loop-type fastening element.” Ex. 1003 ¶ 1. Figure 6 of Karami ’772 is reproduced below.

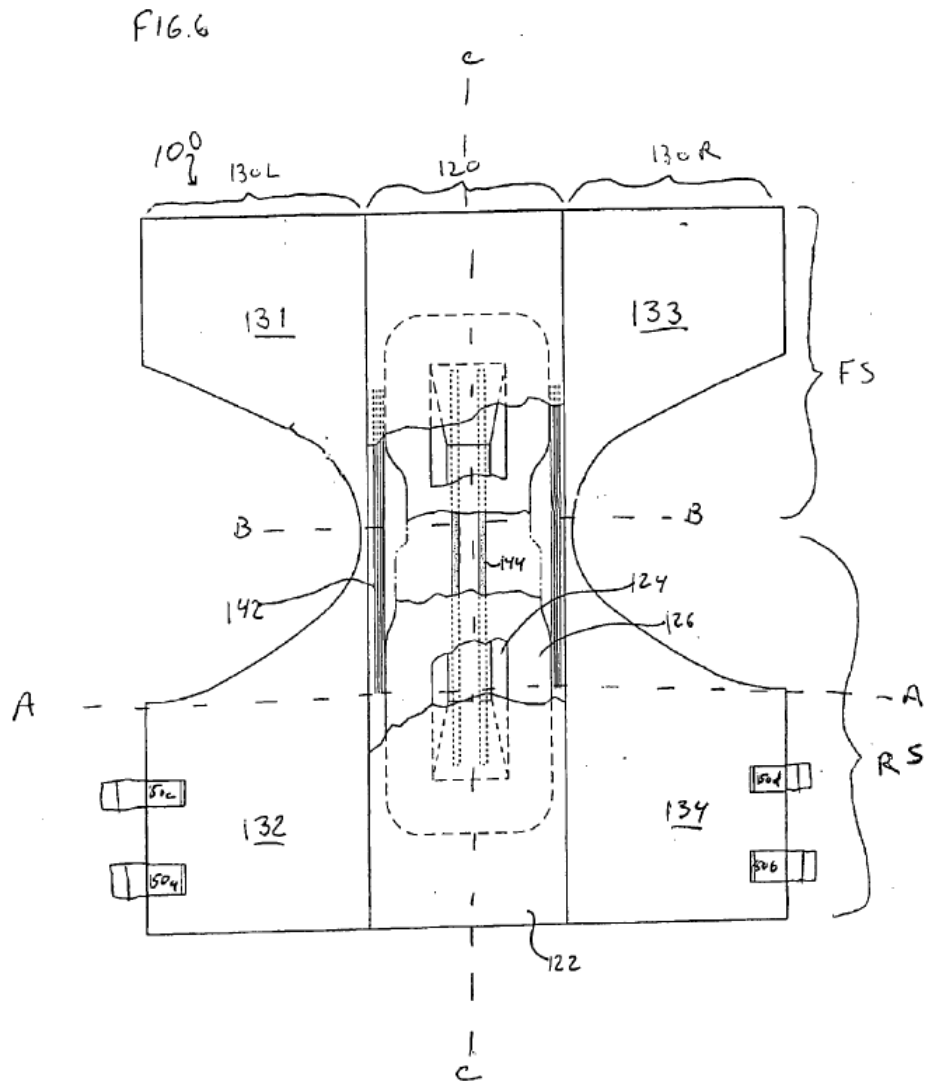


Figure 6 shows “a partially cut away plan view of the inside surface of a stretched out disposable diaper according to an exemplary embodiment.” Ex. 1003 ¶ 22. Diaper 100 includes topsheet 122, absorbent core 126, and backsheet 130 with an hourglass configuration. *Id.* ¶¶ 45–47. The hourglass shape results in front wings 131, 133 and rear wings 132, 134 that have hook-type fasteners 150a–150d. *Id.* ¶ 47. Figure 8 of Karami ’772 is reproduced below.

FIG. 8

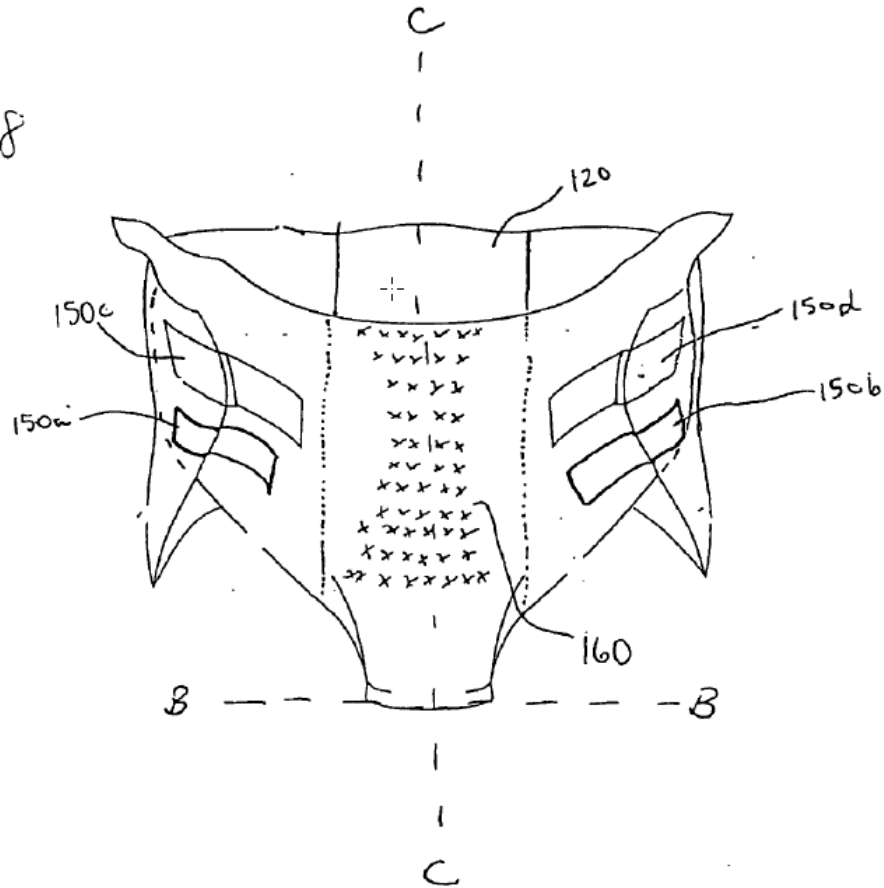


Figure 8 “shows a disposable diaper according to another exemplary embodiment.” Ex. 1003 ¶ 24. “[D]iaper 100 can be provided with at least one stay-away zone 160 at the front waist portion.” *Id.* ¶ 53. Stay-away portion 160 has “diminished affinity to hook-type fasteners.” *Id.*

2. Overview of Benning

Benning “relates to an absorbent incontinence article.” Ex. 1002 ¶ 2. Figure 4 of Benning is reproduced below.

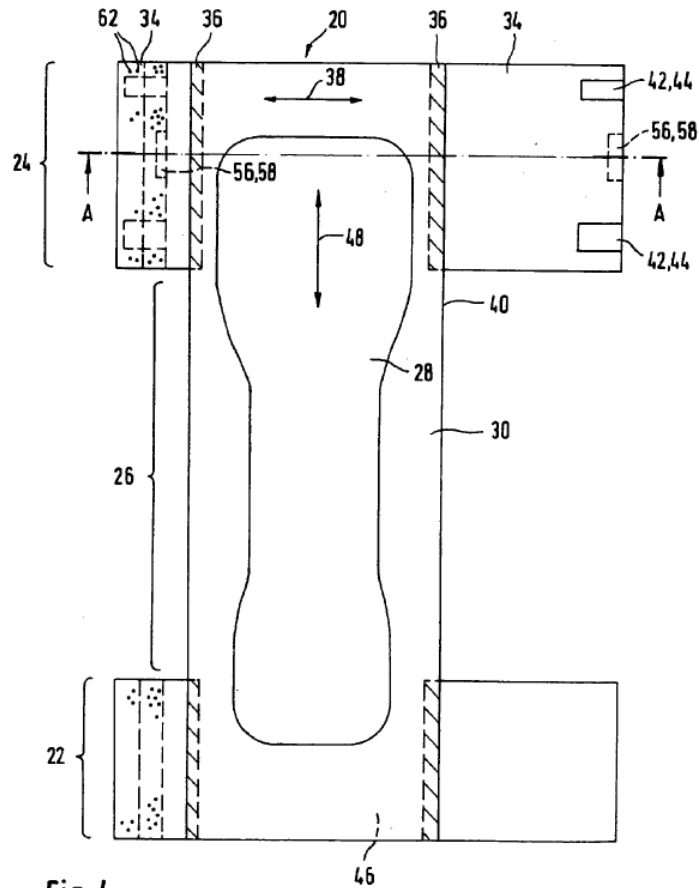


Fig. 4

Figure 4 “shows a plan view of a hygienic article . . . in a schematic representation.” Ex. 1002 ¶ 13. Main body portion 20 includes back region 24, crotch region 26, front region 22, and absorbent core 28. *Id.* ¶ 53. Around absorbent core 28 are underlayer 30 that can form an outer side of the article and topsheet 32. *Id.* Material sections 34 that form side flaps or lateral sections are attached to an edge of main body portion 20. *Id.* ¶ 54. Material sections 34 on the right of the figure are unfolded. *Id.* ¶ 55. Material section 34 can have two closures 42 in the form of closing tapes 44 that can “interact in a releasably adherent manner with an outside 46 of the front region 22.” *Id.*

3. *Discussion*

The Petition argues that claims 1–7 and 9–20 would have been obvious in view of Karami '772 and Benning. Pet. 23–50. In support of this argument, Petitioner asserts that certain modifications of Benning's diaper would have been obvious in view of Karami '626. *Id.* 23–34. The Petition then maps the references' teachings and the limitations of the challenged claims. *Id.* at 34–50.

The Petition alleges that “[i]t would have been obvious to use ‘separate wings bonded to the edges of a central chassis’ that defines containment assembly 120, rather than Karami '772’s integral-wing configuration.” *Id.* at 27. The Petition asserts that “Benning confirms this would have been an obvious construction,” explaining that Benning discloses a diaper with such a construction. *Id.* at 28–29. The Petition also notes that Karami '772 discloses using separate wings. *Id.* at 29. In particular, the Petition argues that Karami '772 “teaches that ‘[a]s in the wings of the previously-described T-shaped diaper, the wings 131 and 133 of the diaper 100 can be made of any . . . bonded nonwoven,’ which ‘would have invited [person of ordinary skill in the art] to use wings that are separate from and not necessarily the same material as the backsheet.’” *Id.* at 29.

The Petition argues that a person of ordinary skill in the art would have had multiple reasons for modifying Karami '772's diaper to use Benning's construction of separate wings attached to the diaper chassis. *Id.* at 30–32. Petitioner argues that a person of ordinary skill in the art would have done so to decrease cost and promote manufacturability. *Id.* at 30–31. Petitioner also argues that a person of ordinary skill in the art would have

done so to allow the use of different materials for the wings and chassis. *Id.* at 31–32.

Patent Owner responds that Petitioner “relies on distinct embodiments of Karami ’772 as if they were one embodiment with no rationale for the combination of the embodiments.” Prelim. Resp. 23. In particular, Patent Owner contends that the diapers of Figures 6 and 8 of Karami ’772 that Petitioner relies on are separate and distinct embodiments and not the same diaper. *Id.* at 23–24 (citing Ex. 1003 ¶¶ 22, 24, 45, 53). In Patent Owner’s view, even though some reference numbers overlap between the two figures, Figure 6 identifies many more elements that are not in Figure 8. *Id.* at 24–25 (citing Ex. 1003, Figs. 6, 8). Patent Owner also argues that Karami ’772 is unambiguous when it intends for one embodiment to be the same as another embodiment. *Id.* at 25 (citing Ex. 1003 ¶¶ 43, 53, Fig. 5). Patent Owner further argues that Petitioner’s declarant testimony does not sufficiently support Figures 6 and 8 showing the same diaper and the other grounds based on Karami ’772 do not cure the deficiency. *Id.* at 27 (citing Ex. 1003 ¶ 24; Ex. 1012 ¶ 75 n.1).

Karami ’772 starts its detailed description with diaper 10 shown in Figures 1–3. Ex. 1003 ¶¶ 17–19, 26–35, Figs. 1–3. When the same diaper is shown, such as in Figure 5, Karami ’772 does state the “diaper according to this embodiment is the same as the previous embodiment except” *Id.* ¶ 43. For Figures 6 and 8, Karami ’772 states in its description of the figures and associated description for Figures 6 and 8 that Figure 6 shows “an exemplary embodiment” and that Figure 8 shows “another exemplary embodiment.” *Id.* ¶¶ 22, 24, 45, 53. According to Karami ’772, Figure 7

shows diaper 200 that “is similar in construction to the previously described diaper of FIG. 6 except for” *Id.* ¶ 49, Fig. 7.

Both Figures 6 and 8 show diaper 100. *See id.* ¶¶ 45, 53, Figs. 6, 8. Figure 8 appears to show the same diaper of Figure 6 with the addition of stay-away zone 160. *See id.* ¶ 53, Fig. 8. There is, however, no affirmative statement that, like for Figures 6 and 7, the shown diaper is similar to a previous diaper. Karami ’772 expressly states that both diapers of Figures 6 and 8 have backsheet 130. At this stage, we are satisfied that diaper 100 of Figure 8 is the same as diaper 100 of Figure 6 except for the addition of stay-away zone 160. We, however, note that this dispute presents a factual issue regarding what one of ordinary skill in the art would have understood from Karami ’772 that would be better decided on a full record developed at trial.

Patent Owner also responds that Petitioner “relies on purported inherent disclosures of Karami ’772.” Prelim. Resp. 27. Specifically, Patent Owner argues that Petitioner’s mapping of claim 1 to Karami ’772 requires inherent disclosure to teach or suggest the recited “mechanical closure” of claims 1 and 28. *Id.* at 28–30 (citing Pet. 25–26, 28, 35–41; Ex. 1001, 16:43–54). Patent Owner also argues that Petitioner’s declarant testified earlier that he could not tell if the retaining forces were sufficient to hold the diaper on a user and he does not address this prior testimony in the declaration filed in this proceeding. *Id.* at 31–33 (citing Pet. 32–33; Ex. 1012 ¶¶ 69, 70; Ex. 2001, 157:9–158:14). Patent Owner further argues that Petitioner does not acknowledge inherency is an issue and fails to meet the standards for showing inherency for the claimed retaining forces that

must be sufficient to hold the diaper on the wearer. *Id.* at 33–35 (citing Pet. 39–40; Ex. 1001, 2:7–16, 16:43–54).

According to Patent Owner, Karami '772 suggests that hook-type fasteners cannot interact with stay-away zone 160 to retain the diaper on a user. Prelim. Resp. 34. Patent Owner also contends that Petitioner's assertion regarding what a person of ordinary skill in the art would have understood about Karami '772 does not apply the Federal Circuit's standard for inherency. *Id.* at 35 (citing Pet. 26, 40). Patent Owner further contends that Petitioner relies on additional references without proper analysis to fill in gaps regarding the assertion that one of ordinary skill in the art would have understood that hooks would still attach to a stay-away zone and the additional references do not support the assertion. *Id.* at 36–40 (citing Pet. 25, 27, 40; Ex. 1012 ¶¶ 70, 75, 77; Ex. 1028, 1, ¶ 21). Patent Owner additionally contends that Petitioner and its declarant admittedly depend on preferred or possible, not essential or unavoidable, disclosures, thus failing to show inherency. *Id.* at 39–41 (citing Pet. 33; Ex. 1001, 16:13–17; Ex. 1004 ¶ 69; Ex. 1012 ¶ 70). Patent Owner further responds that the other grounds based on Karami '772 do not cure the deficiency. *Id.* at 40–42 (citing Pet. 40; Ex. 1001, 16:33–54; Ex. 1004 ¶ 69; Ex. 1012 ¶ 70).

Petitioner argues that Karami '772 would have met limitations 1[d][1] and 1[d][2] because of water jet treatment or aperturing. Pet. vii, 39–40 (citing Ex. 1003 ¶¶ 36, 37, 53, Fig. 8; Ex. 1012 ¶¶ 67–70, 74–77). Petitioner also asserts that one of ordinary skill in the art would have known that higher-basis-weight nonwovens in the diaper's wings result in lower fastener retaining forces in the containment assembly. *Id.* at 40–41 (citing Ex. 1012 ¶¶ 45, 76, 77, 93–95, 103, 120). The preliminary record indicates that

Karami '772 expressly supports Petitioner's argument that stay-away zone 160 has diminished, not no, affinity to fasteners. Ex. 1003 ¶ 53 ("Thus, the stay away zone without water jet treatment and/or aperturing will have *diminished affinity* to hook-type fasteners in relation to the remainder of the front waist portion.") (emphasis added).

At this stage of the proceeding, Petitioner provides sufficient evidence that the proposed combinations starting with Karami '772, at least, suggest the limitation. According to Patent Owner, there is not even a suggestion, and thus, Petitioner must rely on inherent disclosures. *See* Prelim. Resp. 27–42. This dispute concerns what the asserted references would suggest to or be understood by one of ordinary skill in the art or, in Patent Owner's view, what the references do not teach or suggest at all. The dispute, thus, presents a factual issue that would be better decided on a complete record. A full record would also aid in determining how credible is Petitioner's declarant testimony regarding retaining forces. *See* Prelim. Resp. 32–33. Because Petitioner argues at least a suggestion and a reason for modifying Karami '772 to arrive at the limitation, we determine that Petitioner makes a sufficient showing for instituting review.

D. GROUND 2 – ALLEGED OBVIOUSNESS OVER BENNING AND KARAMI '626

1. *Overview of Karami '626*

Karami '626 relates to "an absorbent article having a fastener element which does not require a special loop providing landing zone." Ex. 1004 ¶ 2. Figure 1 of Karami '626 is reproduced below.

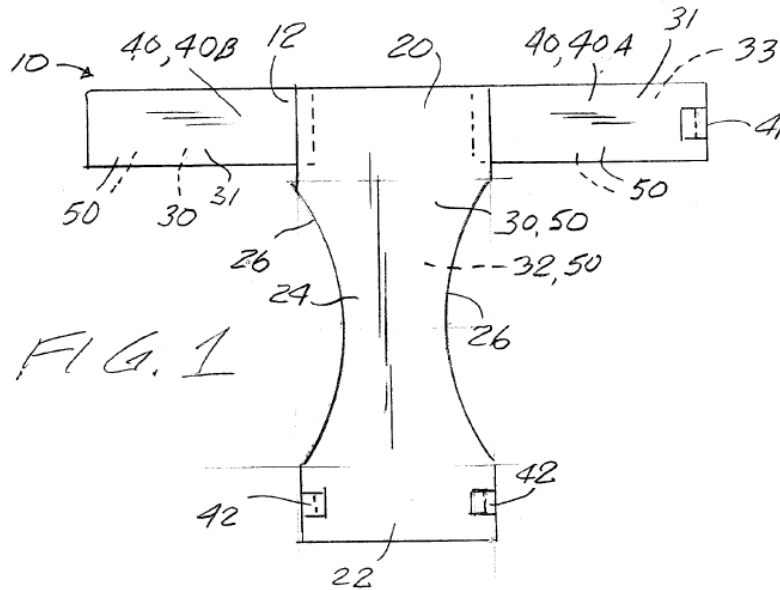


Figure 1 shows a top plan view of a disposable absorbent article. Ex. 1004 ¶ 24. Absorbent article 10 has back portion 20, crotch portion 24, front portion 22, frontsheet 30, backsheet 32, and an absorbent core between frontsheet 30 and backsheet 32. *Id.* ¶¶ 35, 36. Wings 40 extend laterally from back portion 20, and one wing 40 has at least one hook-type fastener element 41. *Id.* ¶ 37. Frontsheet 30 has fastener elements 42. *Id.*

“[F]astener elements 41, 42 do not require landing zones and may engage directly with any portion of the nonwoven surface constituting the frontsheet 30, backsheet 32 or wings 40.” *Id.* ¶ 40. One wing 40 can contact both fasteners 42 on frontsheet 30; both wings 40 can be secured to each other to form a belt; or each wing 40 can be secured to a respective fastener element 42. *Id.* ¶¶ 39, 40.

2. Discussion

The Petition argues that claims 1–7 and 9–20 would have been obvious in view of Benning and Karami '626. Pet. 50–71. In support of this argument, Petitioner asserts that certain modifications of Benning's diaper would have been obvious in view of Karami '626. *Id.* 50–58. The Petition

then maps the references' teachings and the limitations of the challenged claims. *Id.* at 58–71.

The Petition alleges that it would have been obvious in view of Karami '626 to modify Benning's diaper to have a film-nonwoven backsheet. *Id.* at 53–54. The Petition asserts that film-nonwoven backsheets had certain known advantages. *Id.* According to the Petition, it was known that the film layer prevented leakage, while the nonwoven layer “promote[s] wearer comfort and visual appeal with a cloth-like outer surface.” *Id.* at 53. The Petition contends that a person of ordinary skill in the art would have found Karami '626's film-nonwoven backsheet especially desirable because “its nonwoven's lower (e.g., ‘optimally 20 gsm’) basis weight . . . was known to promote ‘a generally cloth-like texture.’” *Id.* In view of this, the Petition asserts that a desire to provide a comfortable, visually pleasing cloth-like outer surface would have motivated a person of ordinary skill in the art to modify Benning's diaper with Karami '626's film-nonwoven backsheet. *Id.* at 54. Additionally, Petitioner asserts that a person of ordinary skill in the art would have been motivated to use Karami '626's film-nonwoven backsheet to promote adjustability by allowing “fasteners like Karami '626's to ‘[e]ngage directly with any portion of [a diaper's] nonwoven surface[s]’ to secure the diaper on a wearer.” *Id.* at 54 (quoting Ex. 1004 ¶ 40).

The Petition also argues that it would have been obvious to replace Benning's closures 42 with Karami '626's hook-type fasteners. *Id.* at 54–57. The Petition explains that such a construction would have provided one way to allow widely adjustable sizing with a film-nonwoven backsheet and a nonwoven wing. *Id.*

The Petition also alleges that the obvious combination of Benning and Karami '626 would have been a construction with higher basis weight nonwoven in wings 34 than in the film-nonwoven backsheet. *Id.* at 57–58. The Petition notes that Karami '626 teaches “its nonwoven basis weight being ‘optimally 20 gsm.’” *Id.* at 57. The Petition also notes that Benning teaches wings 34 with “higher basis weights of ‘specifically [] 25-50 [gsm].’” *Id.* (quoting Ex. 1002 ¶ 32). The Petition also notes that Karami '626 teaches a preference for “slightly higher basis weights . . . on the wings . . . , while relatively lower basis weights of 15-30 gsm (optimally 20 gsm) are preferred for the backsheet.” *Id.* (quoting Ex. 1004 ¶ 65). Additionally, noting that both Karami '626's T-shaped diaper and the modified Benning diaper would have had separate wings that would engage fasteners and surround the user's waist, Petitioner argues that it would have been understood that “higher-basis-weight wings would have been preferred for the modified Benning diaper.” *Id.* at 57–58. Petitioner also argues that “[i]ndependently, [a person of ordinary skill in the art would have] recognized that higher-basis-weight (e.g., 18-60 gsm, such as 30 gsm) wings would have desirably promoted diaper-strength while lower-basis-weight nonwovens (e.g., 10-30 gsm, such as 20 gsm) for backsheets would have desirably promoted wearer comfort.” *Id.* at 58.

Patent Owner argues that there are two reasons Ground 2 fails. We turn now to detailed discussions of the disputes raised by the two deficiencies alleged by Patent Owner.

a) *Patent Owner's Argument that Petitioner's Alleged Reasons for Modifying Benning Are Conclusory and Nonsensical*

Patent Owner argues that Petitioner alleges two conclusory, nonsensical reasons that a person of ordinary skill in the art would have modified Benning's diaper to have a film-nonwoven backsheet, as taught by Karami '626. Prelim. Resp. 43–48. Given the conclusory, nonsensical nature of the alleged reasons for the modification, Patent Owner argues Petitioner's obviousness conclusion rests on hindsight. *Id.*

Patent Owner argues that the Petition does not support sufficiently its assertion that a person of ordinary skill in the art would have given Benning's diaper a film-nonwoven backsheet to “provide a more comfortable and visually appealing cloth-like outer surface for Benning's diaper.” *Id.* at 44. Patent Owner argues that Petitioner has not demonstrated that Benning's underlayer 30 is uncomfortable or unappealing. *Id.* at 45. Given this, Patent Owner dismisses Petitioner's allegation that providing a comfortable, visually appealing diaper would have motivated the modification. *Id.* In particular, Patent Owner likens Petitioner's alleged motivation to the “generic desire for improvement” rejected as insufficient in *ActiveVideo Networks, Inc. v. Verizon Commc'ns, Inc.*, 694 F.3d 1312 (Fed. Cir. 2012). *Id.*

Patent Owner also characterizes Petitioner's assertion of motivation based on beneficial adjustability with hook-type fasteners as conclusory and nonsensical. *Id.* at 45–48. As discussed in greater detail below, Patent Owner argues that “there would have been no reason to make the alleged modification because Benning already achieves what Petitioner alleges would have been sought by the change.” *Id.* at 47.

At this stage, we do not agree with Patent Owner that Petitioner’s contentions regarding beneficial comfort and visual appeal amount to an assertion of a conclusory, generic desire for improvement. Rather, Petitioner relies on Mr. Jezzi’s testimony explaining in detail why he believes a person of ordinary skill in the art would have combined the specific prior art elements of Benning’s diaper and Karami ’626’s film-nonwoven backsheet. Pet. 53 (citing Ex. 1012 ¶¶ 30–31, 108, 112–113). In support of this opinion, Mr. Jezzi cites documentary evidence that it was known in the art that film-nonwovens provided the specific benefits that allegedly would have motivated the combination—comfort and visual appeal. *See* Ex. 1012 ¶¶ 30–31, 112–113 (citing Ex. 1004 ¶¶ 62–64; Ex. 1008, 1:51–67; Ex. 1019, 1:38–41, 1:65–2:2, 2:25–32, 3:66–24, 5:12–16; Ex. 1023, 8:3–28; Ex. 1037 ¶ 60). Thus, the circumstances here differ from *ActiveVideo*, where the expert provided “conclusory and factually unsupported” testimony that was “generic and [bore] no relation to any specific combination of prior art elements.” 694 F.3d at 1328.

Additionally, at this stage, contrary to Patent Owner’s arguments, we do not find conclusory or nonsensical Petitioner’s assertion of motivation based on adjustability with a film-nonwoven backsheet and hook-type fasteners. Patent Owner argues that Benning’s tapes 44 already allow retention to main body portion 20. Prelim. Resp. 45–46. And Patent Owner argues that Petitioner indicates Benning already teaches the option to use hook-type fasteners. *Id.* at 47. These arguments do not appear to support Patent Owner’s conclusion that Benning already provides the same functionality that the proposed modification would. Rather, it appears that the proposed modification would allow hook-type fasteners to engage

Benning's main body portion 20. This differs from using tapes 44 to engage main body portion 20, and it also differs from the alternative of using hook-type fasteners to engage parts of the diaper other than main body portion 20.

On the whole, Petitioner has provided sufficient evidence for purposes of institution that a person of ordinary skill in the art would have been motivated to modify Benning's diaper to use Karami '626's film-nonwoven backsheet.

b) The Dispute Regarding Limitations 1[d][1] and 1[d][2]

At this stage, there is a dispute regarding whether Petitioner has addressed sufficiently Limitations 1[d][1] and 1[d][2]. Addressing these limitations, Petitioner asserts that “[a]s explained in Section VIII.B.1(c), the modified Benning diaper had or it would have been obvious to use a higher-basis-weight nonwoven for wings 34 than for the modified underlayer.” Pet. 62. Petitioner argues that “[f]or higher-basis-weight wings 34, ‘more loops [would have been] available for engagement by the hook portion of the fastener’ (EX1040, 2:35-39), resulting in higher fastener retaining forces (EX1044, 5:3-7 (‘more hooks and loops [] engaged’ provides ‘high[er] peel and shear strength[s]’)) than in the lower-basis-weight nonwoven of underlayer 30.” *Id.*

Patent Owner counters that

[n]either Benning nor Karami '626 discloses the claimed chassis backsheet and side parts with closure aids where “a retaining force between said first closure aid and said outer face of said backsheet . . . is lower than a retaining force between said first closure aid and said outer face of said third discrete side part” and “a retaining force between said second closure aid and said outer face of said backsheet . . . is lower than a retaining force

between said second closure aid and said outer face of said fourth discrete side part.”

Prelim. Resp. 48–49. Given this, Patent Owner argues that Petitioner’s challenge relies on inherency. *Id.*

In concert with this, Patent Owner argues that “Petitioner has not met the high standard for inherency.” *Id.* at 49. Patent Owner elaborates that Petitioner needs to show that Limitations 1[d][1] and 1[d][2] “would have been the natural result,” not just a possibility. *Id.*

Patent Owner argues that Petitioner has not shown that higher-basis-weight wings would have been the natural result of combining Benning and Karami ’626. *Id.* at 49–51. Instead, Patent Owner argues that the various ranges of basis weights disclosed by the references and those cited by Petitioner demonstrate only a possibility of a diaper with higher-basis-weight in the wings than the backsheet. *Id.* Patent Owner dismisses Petitioner’s citation of Karami ’626’s disclosed preference for higher-basis-weight wings by noting that it “only states that ‘*slightly* higher basis weights’ are preferred for wings and does not say *why*.” *Id.* at 51 (emphases in Prelim. Resp.).

Patent Owner also suggests that higher-basis-weight wings may not provide higher retention forces than a lower-basis-weight nonwoven. *Id.* at 51–52. Patent Owner cites Karami ’626’s disclosure that “pore size in the nonwoven (that is, the size of the interstices formed by the fibers) typically affects the peel strength, a higher pore size providing greater peel strength for the fastener elements according to the present invention.” *Id.*

At this stage, we find that Petitioner’s arguments and evidence regarding Limitations 1[d][1] and 1[d][2] are sufficient to support a demonstration of a reasonable likelihood of prevailing on its challenge of

independent claim 1 as allegedly obvious over Benning and Karami '626. The lack of any single prior art reference teaching a particular claim limitation does not compel reliance on inherency to address the limitation. Instead, we must consider what the references, in combination, would have taught or suggested to a person of ordinary skill in the art. *See, e.g., In re Keller* 642, F.2d 413, 425 (CCPA 1981). Here again, “[i]n considering the disclosure of a reference, it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom.” *Preda*, 401 F.2d at 826.

Contrary to Patent Owner’s suggestion, Petitioner’s treatment of Limitations 1[d][1] and 1[d][2] rely at least partially on assertions unrelated to inherency. For example, Petitioner expressly asserts that it would have been obvious to a person of ordinary skill in the art to use higher-basis-weight for the wings than for the backsheet. Pet. 57. Mr. Jezzi supports this with reasoned testimony citing documentary evidence of reasons for such a configuration. Ex. 1012 ¶¶ 117–118. The documentary evidence includes Karami '626’s expressly stated preference for higher-basis-weight in the wings. Ex. 1004 ¶ 65; Pet. 57; Prelim. Resp. 50. For purposes of institution, we find Petitioner has provided sufficiently persuasive evidence of known reasons to provide higher-basis-weight wings, even if Karami '626 suggests only “slightly” higher basis weights without expressly teaching why.

Additionally, for purposes of institution, we find Petitioner has presented sufficient evidence tending to show higher retention forces result from higher-basis-weights, thereby addressing the disputed claim limitations’ recitation of different retention forces. To the extent Patent Owner’s arguments about Limitations 1[d][1] and 1[d][2] demonstrate

Petitioner has not yet conclusively demonstrated unpatentability of the challenged claims, this does not negate Petitioner's showing of a reasonable likelihood of prevailing. Instead, Patent Owner's arguments raise highly factual issues best resolved on a fuller record developed during trial.

c) Conclusion—Ground 2

Having reviewed the parties' arguments and evidence, we determine Petitioner has demonstrated a reasonable likelihood of prevailing at least with respect to its assertion that claim 1 would have been obvious over Benning and Karami '626.

E. GROUND 3 – ALLEGED OBVIOUSNESS OVER BENNING, KARAMI '626, AND STUPPERICH

1. *Overview of Stupperich*

Stupperich "relates to a loop-forming nonwoven material for a mechanical closure element, in particular for disposable hygiene articles, such as diapers, belt diapers, incontinence articles and pads." Ex. 1009 ¶ 1. Figure 1 of Stupperich is reproduced below.

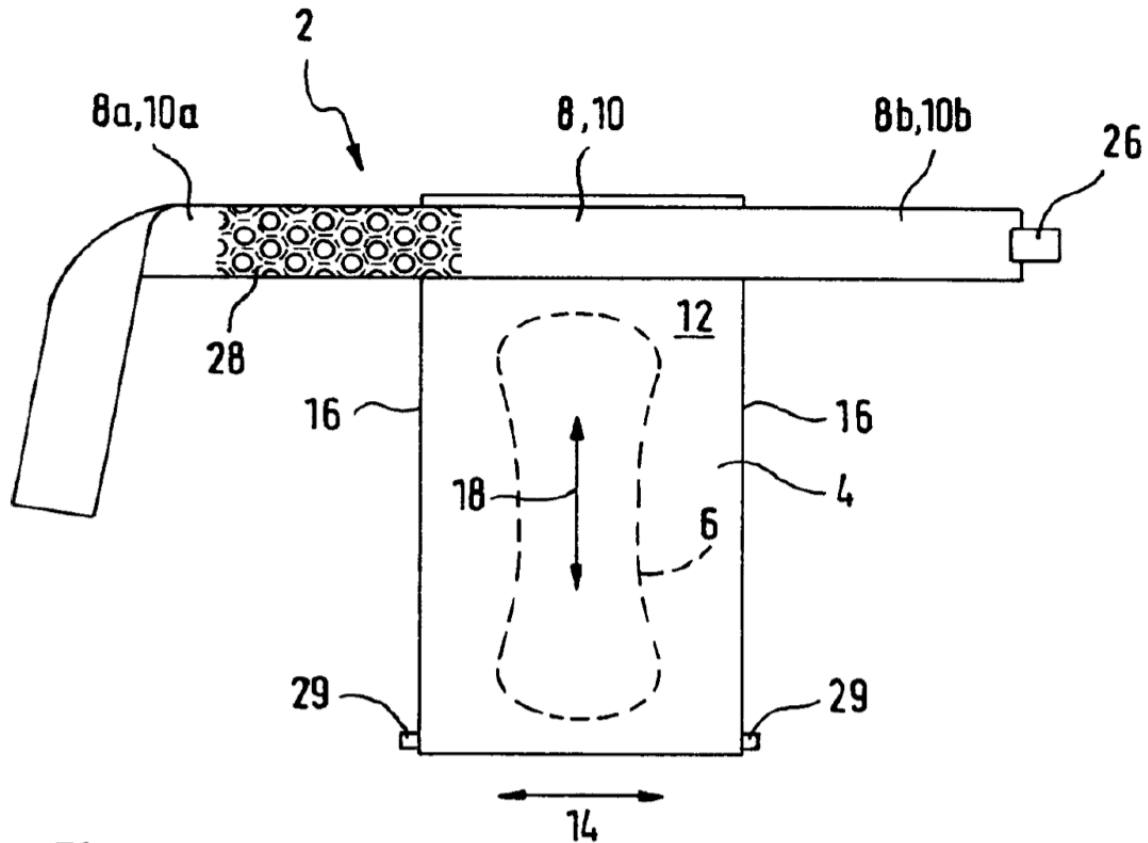


Fig. 1

Figure 1 shows belt diaper 2, which includes main part 4, absorption body 6, and hip belt 10. *Id.* ¶ 56.

Hip belt 10 includes closure element 26 and nonwoven fabric material 28. *Id.* ¶ 58. Closure element 26 takes the form of a flap with mechanical closure elements. *Id.* Preferably “the hip belt consists of this nonwoven fabric material 28, so that the loop-forming component of the nonwoven fabric material forms the entire outer surface of the hip belt.” *Id.* Nonwoven fabric material forms counter closure elements with which the mechanical closure elements of closure element 26 can detachably engage. *Id.*

Stupperich teaches certain objectives for “mechanically acting closure elements, often referred to as hook-and-loop or touch closure elements.” *Id.*

¶ 2. Stupperich explains that

[i]n the manufacture of mechanically acting closure elements, often referred to as hook-and-loop or touch closure elements, the aim is, on the one hand, to achieve a good closure effect of the interacting closure elements based on back gripping or hooking, which do not unintentionally loosen. On the other hand, it should also be possible to loosen these closure elements in an intentional way, without materials of the closure elements being detached or torn out. In order to avoid the latter, the loop-forming component of the mechanical closure element is either provided with textile bindings or – if nonwovens are used – sufficient solidification or bonding of the fibers of the nonwoven is ensured. However, increasing solidification of the nonwoven is accompanied by a decrease in the adhesive force of the mechanical closure system achieved by this.

Id.

Stupperich discusses one embodiment of nonwoven fabric material in connection with Figure 2, which is reproduced below.

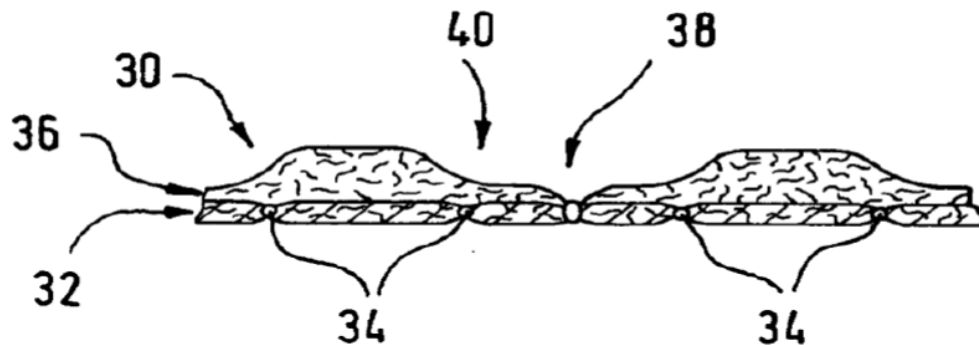


Fig. 2

Figure 2 provides a sectional view of nonwoven fabric material. *Id.* ¶¶ 49, 60.

The nonwoven fabric material of Figure 2 “consists of nonwoven laminate 30,” which includes card web layer 36 and polypropylene spunbonded material layer 32. *Id.* ¶ 60. Card web layer 36 “is added to this spunbonded material layer 32 by hot calendar embossing.” *Id.* Figure 3a of Stupperich is reproduced below.

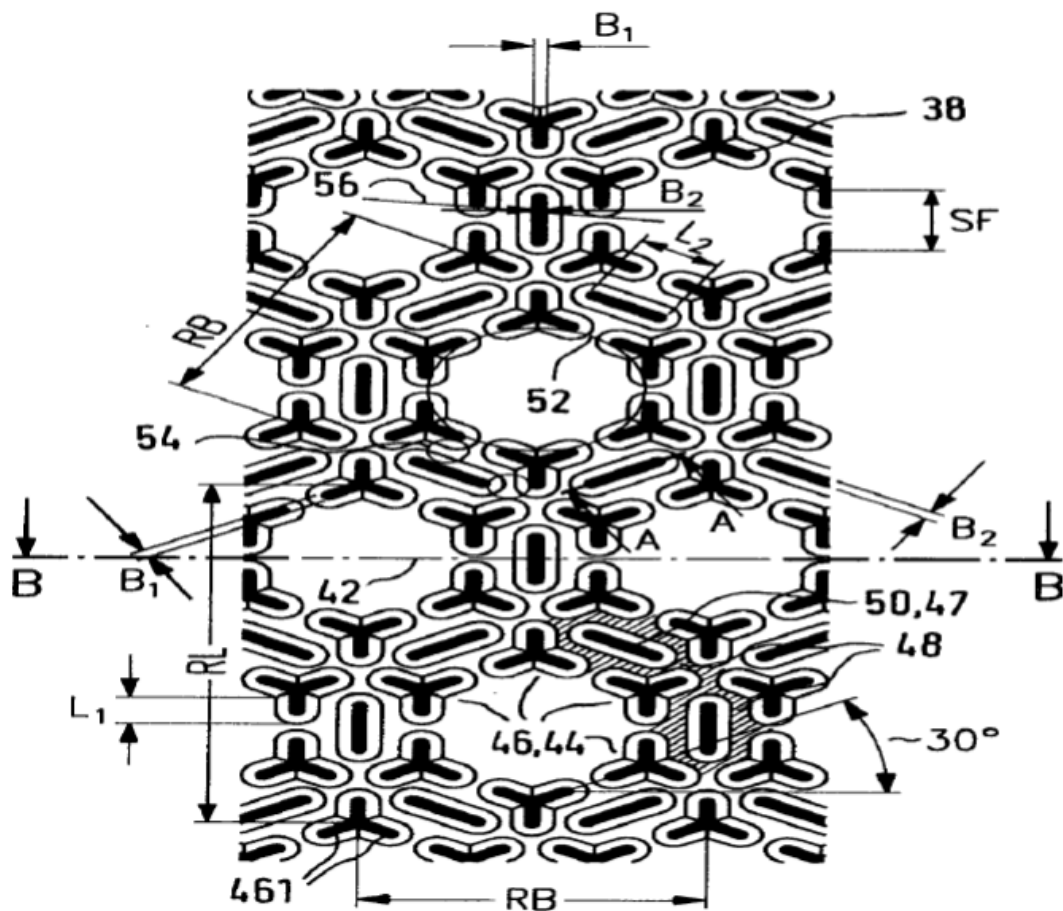


Fig. 3a

Figure 3a “shows a top view of the unwinding of an engraved roller for embossing the nonwoven material according to the invention; also

simultaneously a schematic view of the first upper side of the nonwoven material.” *Id.* ¶ 50.

Figure 3a also shows “embossing pattern 38 applied to the first upper side 40 of the card web layer 36 by hot calendaring.” *Id.* ¶ 60. Application of embossed pattern 38 forms first larger nonbonded areas 42 on nonwoven laminate 30. *Id.* ¶ 61. First larger nonbonded areas 42 “are delimited by a thermally bonded contour 44 of interrupted first segments 46.” *Id.* Second nonbonded areas 48 are between nonbonded areas 42. *Id.* Second nonbonded areas are smaller than nonbonded areas 42. *Id.* Because “the first larger nonbonded areas are delimited by bonded contours and are surrounded outside of the limitation by second smaller nonbonded areas and are spaced from one another by the second smaller nonbonded areas,” Stupperich states it “solved” the “task of creating an nonwoven material improved with regard to a safe closing function and low susceptibility to destruction.” *Id.* ¶¶ 7–8.

Stupperich discloses different weights of nonwoven material. One embodiment “has a polypropylene spunbonded material layer 32 consisting of fibers of a fiber thickness of 2.2 dtex with a surface weight of 30 g/m² as carrier.” *Id.* ¶ 60. “In a further exemplary embodiment . . . the surface weight of the spunbonded fabric was increased to 45 g/m².” *Id.* ¶ 67.

2. Discussion

Petitioner argues that claims 1–7, 9–11, and 15–20 would have been obvious over Benning, Karami ’626, and Stupperich. Pet. 71–78. Building from the assertions in Ground 2, Petitioner argues that “[i]t would have been obvious to use Stupperich’s nonwovens in the modified Benning diaper (§§VIII.B.1(a)-(c)) for wings 34 and as the nonwoven of underlayer 30.” *Id.*

at 71. Petitioner explains that “Stupperich’s nonwovens are what Karami ’626 calls for: nonwovens that are engagable with hook-type fasteners to secure a diaper on a wearer.” *Id.* at 73. Additionally, Petitioner asserts that “a [person of ordinary skill in the art] would have sought the advantageous balance between closing reliability and durability that Stupperich’s nonwovens provide.” *Id.*

Petitioner elaborates that “Stupperich details two such nonwovens, each having ‘[an outer] card web layer 36 [] added to [an inner] spunbonded material layer 32’ using respective variations of his FIG. 3 bonding pattern and respective spunbonded layer basis weights: 30 gsm (**‘Lower-Basis-Weight Nonwoven’**) and 45 gsm (**‘Higher-Basis-Weight Nonwoven’**).” *Id.* Petitioner argues that it would have been obvious to use the lower weight nonwoven for Benning’s underlayer 30 and the higher weight nonwoven in Benning’s wings 34. *Id.*

As noted above, Patent Owner argues that Ground 2, from which Ground 3 builds, suffers from certain substantive flaws. At this stage, Patent Owner does not otherwise substantively dispute Ground 3.

For the reasons explained above in Section II.D.2, we determine Petitioner has demonstrated a reasonable likelihood of prevailing on its Ground 2 assertion, at least with respect to independent claim 1. Having reviewed Petitioner’s arguments and evidence for Ground 3, we also determine that Petitioner has demonstrated a reasonable likelihood of prevailing on its Ground 3 assertion, at least with respect to independent claim 1.

F. GROUND 4 – ALLEGED OBVIOUSNESS OVER KARAMI '772,
BENNING, AND MIYAMOTO '499

1. *Overview of Miyamoto '499*

Miyamoto '499 relates to fastening members, such as for disposable absorbent articles. Ex. 1005 ¶¶ 2–3. Figure 3 of Miyamoto '499 is reproduced below.

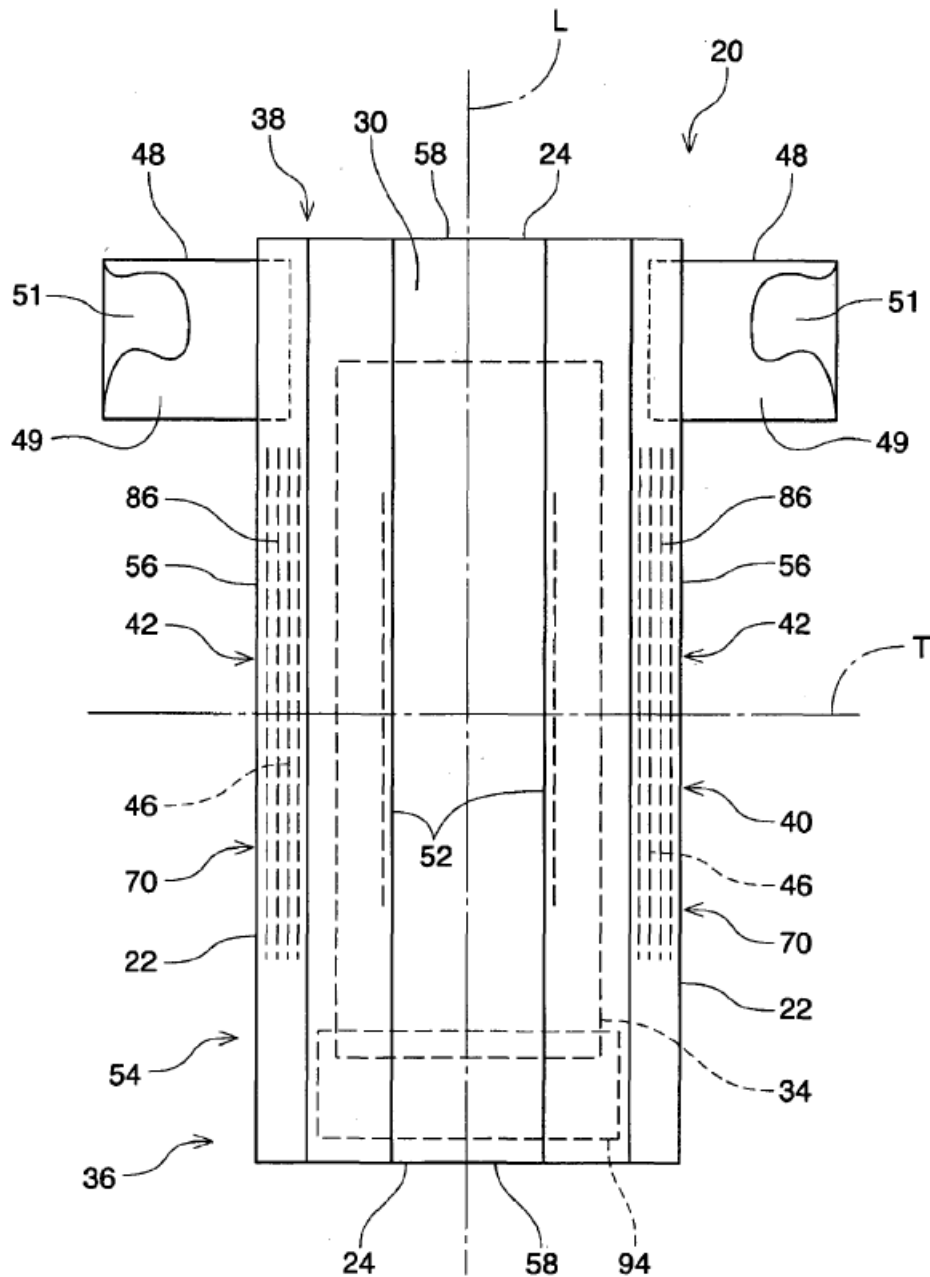


Fig. 3

Figure 3 shows a top plan view of diaper 20. *Id.* ¶ 22.

Diaper 20 includes chassis 54 and fastening members 48. *Id.* ¶ 23. Chassis 54 has liquid pervious topsheet 30, liquid impervious backsheet 32 (not shown in Figure 3), and absorbent core 34. *Id.* Fastening member 48 attaches to chassis 53. *Id.* Fastening member 48 includes fastening materials 100. *Id.* “A landing zone member 94 is provided in the front waist region 36 to form a closure of the diaper 20 together with the fastening materials 100 of the fastening member 48.” *Id.*

Miyamoto '499 discusses fastening member 48 in greater detail in connection with Figure 4, which is reproduced below.

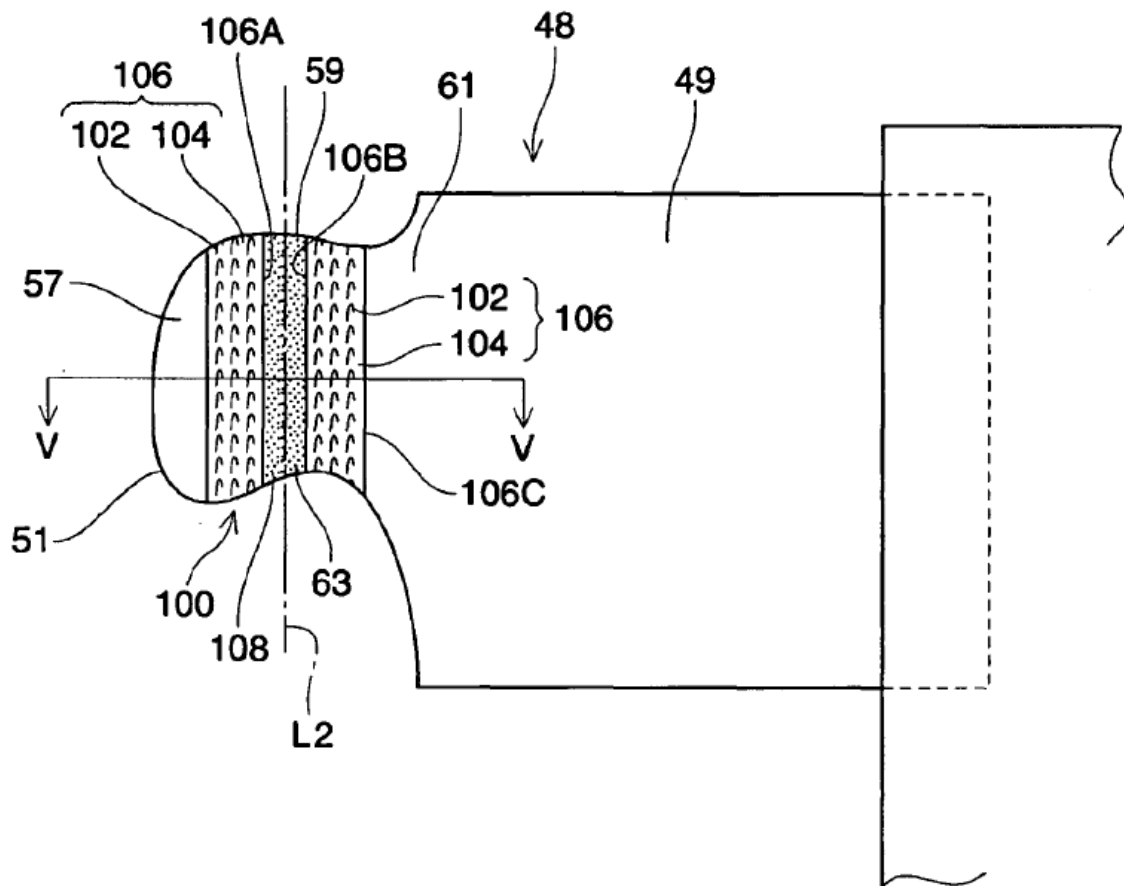


Fig. 4

Figure 4 “is an enlarged top plan view of the fastening member.” *Id.* ¶ 13.

Fastening member 48 includes base panel 49 and tab 51. *Id.* ¶ 30.
Tab 51 has fastening materials 100. *Id.* ¶ 33. Fastening material 100 includes first fastening material 106 and second fastening material 108. *Id.* ¶¶ 33–34. First fastening material 106 includes plurality of hooks 102 and base substrate 104, which is joined to shaped tab 51 via adhesive means 63. *Id.* ¶ 33. “[S]econd fastening material 108 comprises a second adhesive material provided at the gap between the first hook fastening material 106.” *Id.* ¶ 34. Miyamoto ’499 teaches that

The second adhesive material 108 provides a supplemental fastening means. The Second adhesive material 108 may also serve as a means to temporarily attach the shaped tab 51 to the ear panel 49 as shown in **FIG. 1** before use of the diaper 20. Alternatively, the second adhesive material 108 may serve as a means to roll up and secure the soiled diaper to dispose it by being joined to the backsheet 32.

Id.

2. Discussion

Petitioner argues that claims 8 and 21 would have been obvious over Karami ’772, Benning, and Miyamoto ’499. Pet. 79–82. Building from Ground 1, Petitioner asserts that “[i]t would have been obvious to include an adhesive material on fasteners 150a-150d of Karami ’772’s modified diaper . . . in addition to the hooks as in Miyamoto ’499.” *Id.* at 80. Petitioner reasons that “[a person of ordinary skill in the art] would have been motivated to do so to maintain the fasteners folded onto the wings before use as Miyamoto ’499 teaches.” *Id.*

As noted above, Patent Owner argues that Ground 1, from which Ground 4 builds, suffers from certain substantive flaws. At this stage, Patent Owner does not otherwise substantively dispute Ground 4.

For the reasons explained above in Section II.C.3, we determine Petitioner has demonstrated a reasonable likelihood of prevailing on its Ground 1 assertion, at least with respect to independent claim 1. Having reviewed Petitioner's arguments and evidence for Ground 4, we also determine that Petitioner has demonstrated a reasonable likelihood of prevailing on its Ground 4 assertion, at least with respect to independent claim 1.

G. GROUND 5 – ALLEGED OBVIOUSNESS OVER BENNING, KARAMI '626, AND MIYAMOTO '499

Petitioner argues that claims 8 and 21 would have been obvious over Benning, Karami '626, and Miyamoto '499. Pet. 79–82. Building from Ground 2, Petitioner asserts that “[i]t would have been obvious to include an adhesive material on . . . closures 42 of Benning's modified diaper . . . in addition to the hooks as in Miyamoto '499.” *Id.* at 80. Petitioner reasons that “[a person of ordinary skill in the art] would have been motivated to do so to maintain the fasteners folded onto the wings before use as Miyamoto '499 teaches.” *Id.*

As noted above, Patent Owner argues that Ground 2, from which Ground 5 builds, suffers from certain substantive flaws. At this stage, Patent Owner does not otherwise substantively dispute Ground 5.

For the reasons explained above in Section II.D.2, we determine Petitioner has demonstrated a reasonable likelihood of prevailing on its Ground 2 assertion, at least with respect to independent claim 1. Having reviewed Petitioner's arguments and evidence for Ground 5, we also

determine that Petitioner has demonstrated a reasonable likelihood of prevailing on its Ground 5 assertion, at least with respect to independent claim 1.

H. PATENT OWNER'S PROCEDURAL ARGUMENTS

Patent Owner argues that Petitioner structured the Petition in a procedurally deficient manner. Patent Owner argues that the Petition lacks sufficient particularity and circumvents our word limit. Prelim. Resp. 5–22. Patent Owner argues that, due to excessive shorthand, cross-references, incorporation, and redundancy, the Petition fails to explain clearly the bases of Petitioner's unpatentability contentions. *Id.* at 8–16. Similarly, Patent Owner argues that the Petition uses generic labels, shorthand references, and omission of natural spaces to effectively circumvent our word count. *Id.* at 16–22. At this stage, having considered the Petition and Patent Owner's procedural arguments carefully, we find that none of the issues identified by Patent Owner rises to a level that renders the Petition as a whole deficient, or otherwise warrants denying institution.

III. CONCLUSION

After considering the evidence and arguments presented in the Petition and the Preliminary Response, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing in proving that at least one of claims 1–21 of the '990 patent is unpatentable, and thus, we institute an *inter partes* review of all challenged claims on all presented challenges. *SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60.

At this stage of the proceeding, the Board has not made a final determination as to the patentability of any challenged claim or any underlying factual and legal issues.

IV. ORDER

For the reasons given, it is:

ORDERED that an *inter partes* review is instituted on all challenged claims under all challenged grounds; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(a), *inter partes* review of the '990 patent is hereby instituted commencing on the entry date of this Decision, and pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial.

IPR2020-01480
Patent 8,708,990 B2

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