

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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ALBANY INTERNATIONAL CORP.,

Petitioner

v.

VOITH PATENT GMBH,

Patent Owner.

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PETITION FOR *INTER PARTES* REVIEW  
OF U.S. PATENT NO. 11,261,566

Case No. IPR2025-01116

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**PATENT OWNER'S PRELIMINARY RESPONSE**

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**EXHIBIT LIST**

| <b>Exhibit No.</b> | <b>Description</b>                  |
|--------------------|-------------------------------------|
| 2001               | Declaration of Dr. David Brookstein |
| 2002               | CV of Dr. David Brookstein          |

## I. Introduction

Pursuant to 35 U.S.C. § 313 and 37 C.F.R. § 42.107, Voith Patent GmbH. (“Voith” or “Patent Owner”) hereby submits this Preliminary Response to the Petition for *inter partes* review (“Petition”), filed by Albany International Corp., (“Petitioner”), challenging claims 1-15 (“Challenged Claims”) of U.S. Patent No. 11,261,566 (the “’566 Patent”) (EX1001).

Petitioner alleges that claims 1-15 are invalid under 35 USC §103 based on three main grounds and fifteen sub-grounds. In each ground, Petitioner applies PCT Publication No. WO 89/12717 (“*Sudre*”) (EX1004) as the primary reference and points to a half-sentence in this reference that indicates PMC “meeting the particular requirements of its intended end use” can be produced to effectively argue that this statement was sufficient to inspire a person of ordinary skill in the art (a “POSITA”) to look into any random piece of prior art (and in some cases, a future publication) in the fabric-making realm to modify *Sudre*. Interestingly, a corresponding EP publication of *Sudre* is cited on the coversheet of the ’566 Patent, but Petitioner fails to provide any discussion of why the examiner was not inspired to combine *Sudre* with a secondary reference to form an obviousness-type rejection.

Petitioner’s first set of grounds are based on the combination of *Sudre* and a book by Sabit Adanur (*Paper Machine Clothing*, EX1021, “*Adanur*”). As an initial

matter, the Petitioner fails to provide any evidence or arguments as to why *Adanur* was published and publicly available to qualify it as a printed publication.

Furthermore, to form their case for obviousness, Petitioner refers to an article that Dr. Adanur wrote in some obscure Auburn University publication over two months *after* the earliest filing date of the '566 Patent and points out that Dr. Adanur referred to his own book (the *Adanur* reference) as an “industry standard for papermaking.” From there, Petitioner argues that given that *Adanur* was an industry standard and based on that half-sentence in *Sudre*, a POSITA would have been motivated to take unrelated pictures from the book and scan and measure the number of pixels in each picture to decipher fabric making metrics such those recited in claim 1. However, Ground 1 fails because Petitioner's entire arguments are based on 1) incorrect measurements of pictures and photographs that do not define precise proportions and have been found by longstanding Federal Circuit precedent to be of little value, 2) incorrect assumptions and calculations, and 3) limitations that are pulled from unrelated pictures and cobbled together through impermissible hindsight.

In the second set of grounds, Petitioner combines *Sudre* with PCT Publication No. WO 2014/172594 (“*Lee*”) (EX1005) and U.S. Patent No. 4,806,208 (“*Penven*”) (EX1006). Similar to the first ground, Petitioner argues that starting with that half-sentence in *Sudre* and inspired by *Adanur*'s future article,

the skilled person would have been motivated to look into *Lee* and *Penven* to form “industry standard” and “typical” fabrics. However, *Lee* teaches a multi-layered structure that is significantly distinct and more complex than the structures disclosed in *Sudre* and *Penven*. Further, although *Lee* explicitly discloses that the various structures of its multi-layer structure have different diameters, Petitioner relies on a yarn diameter that is contrary to the teachings of *Lee* to form its obviousness arguments. Furthermore, Petitioner fails to provide any coherent and cognizable reason for why a skilled person would look into *Lee* when starting from *Sudre* and/or look into *Penven* when after combining *Sudre* and *Lee*.

In the third set of grounds, Petitioner combines *Sudre* with another obscure alleged publication: a Swedish language paper magazine entitled “*A new generation of seamed felt*” (“*Rydin*”) (EX1028). Similar to the first ground, Petitioner fails to provide any evidence or arguments as to why *Rydin* was published and publicly available to qualify it as a printed publication, and once again relies on its expert to take measurements of pictures that do not define precise proportions and are understood by Federal Circuit precedent to have little value. Petitioner also does not articulate how or why a POSITA starting from that half-sentence in *Sudre* would be motivated to look into at an article directed to “*A new generation of seamed felt*” that makes no mention of the parameters recited in the claims.

In all three grounds, Petitioner has failed to demonstrate that any of its cited references even remotely suggests the optimal range for loop density, the optimal range for the  $\frac{LD}{MDYD}$  Ratio, and/or the technical relationship between these optimal ranges, as recited in the claims of the '566 Patent. Petitioner has further failed to establish a coherent motivation to combine or a reasonable expectation of success for any of its proposed combinations. These failures merit denial, and the Board should deny institution of an *inter partes* review.

## **II. Background**

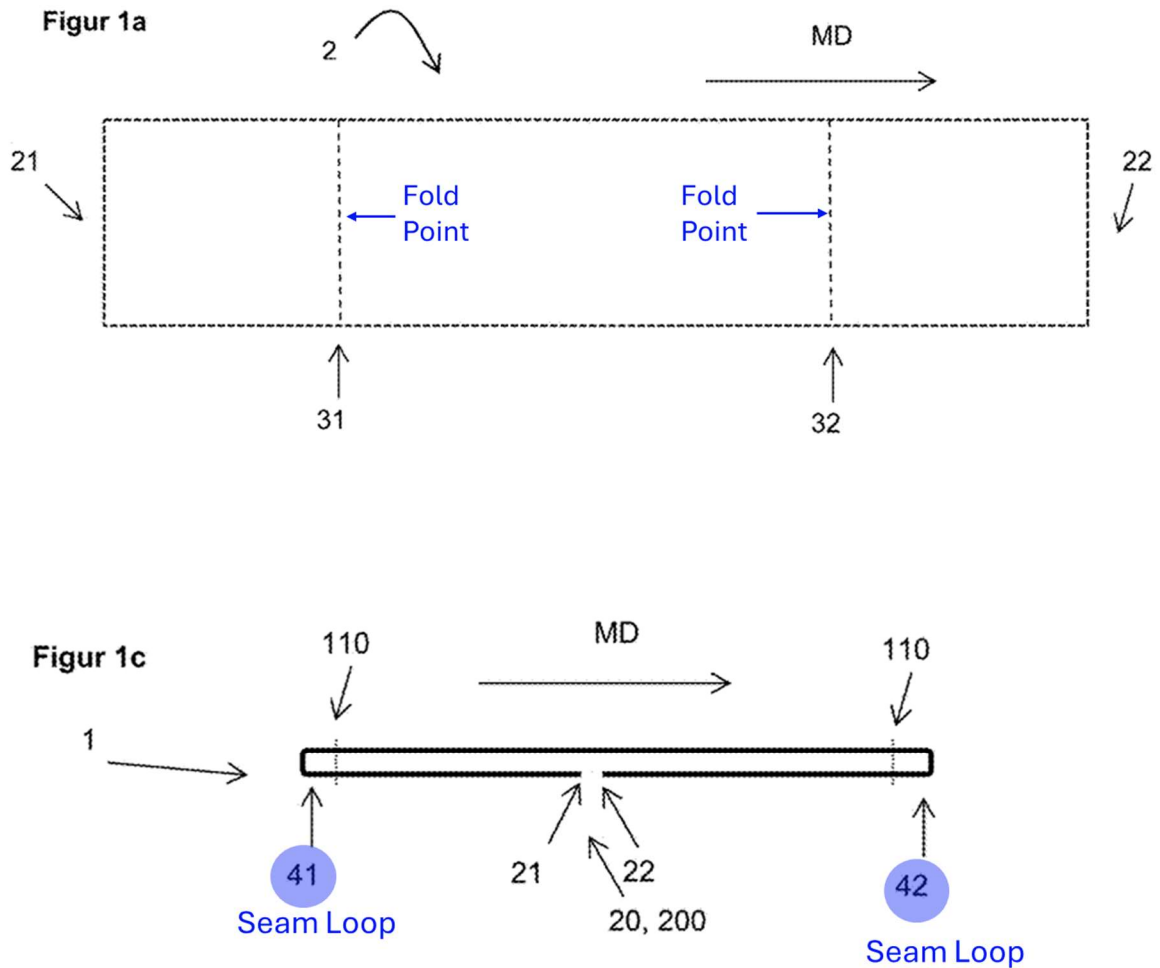
### **A. Overview of the '566 Patent**

The '566 Patent generally relates to a clothing for a machine, such as a Paper Machine Clothing ("PMC"). *See*, EX 2001 ¶ 29. The PMC is a highly specialized fabric that lines a papermaking machine and works as the underlying support structure for the papermaking machine as it transforms wet pulps of fiber into sheets of paper. The PMC is not just any ordinary fabric - it is a carefully engineered textile designed to endure stress, extreme heat, and moisture such that it can support wet pulps of fiber as they go through sheet formation, pressing, and drying. Therefore, a carefully designed PMC is crucial for maintaining an accurate and efficient papermaking operation. *Id.*

Given their highly specialized nature, different types of PMC are required in different parts of a papermaking machine to perform the specific tasks required for papermaking. *Id.* ¶ 30. For example, forming fabric PMCs are designed to function as the initial interface for wet pulp to allow fluid to drain from fiber pulps while retaining fibers to form a paper web. Meanwhile, press felt PMCs are industrial-grade fabrics that are designed to absorb water under the pressure of heavy rollers while consolidating fibers to enhance sheet strength. Given the nature of their function in the papermaking process, press felts must be designed to meet high durability standards. Press felt PMCs can be made to be seamless or seamed. Seamless press felts are woven as a continuous loop and designed to provide uniform pressing without leaving marks on the paper. Seamed press felts, on the other hand, are fabricated by joining two felt ends to form a loop and are often favored because they are easy to maintain and replace. *Id.*

The '566 Patent explains that the clothing generally comprises a base structure that includes a two-layer laminate structure. '566 Patent 1:8-19, EX 2001 ¶ 31. The two-layer laminate structure includes or is formed using one or more flat-woven fabrics. *See*, '566 Patent 1:8-19, 8:66-9:1, Figs. 1a, 1c (reproduced below in annotated form), EX 2001 ¶ 31. For example, as shown in Figs. 1a and 1c, the two-layer laminate structure 2 can be formed from a single flat-woven element by folding and laying the two ends 21, 22 of the flat fabric on the central part of the

flat cloth, thereby forming a double-layer structure with seam loops 41, 42 formed at the fold points 31, 32. '566 Patent 8:31-35, EX 2001 ¶ 31.



The flat-woven fabric structure is formed of machine-direction (“MD”) threads that are oriented in the longitudinal direction of the base direction and cross-direction (“CD”) threads that are oriented in the traverse direction of the base structure. '566 Patent 2:11-26, EX 2001 ¶ 32. At the location of seam loops 41, 42, one or more CD threads are removed from the woven structure, leaving the MD threads. '566 Patent 8:53-55, 1:45-46, FIG. 2a., EX 2001 ¶ 32. The clothing is

made endless by connecting the ends of the base fabric structures by means of a seam, which is formed by interengaging the seam loops 41, 42 After interengaging the seam loops, an insertion element or pintle is inserted in the loop opening “so that the two loop ends can no longer disengage.” ’566 Patent 2:59-62; 9:30-33, EX 2001 ¶ 32. Generally, any insertion element can be used. For example, pintles made from one or filaments can be used. ’566 Patent 4:25-27, EX 2001 ¶ 32.

According to the disclosure of the ’566 Patent, provision is made for the diameter of the seam loops (“LD-loop diameter”) and the diameter of the associated MD threads (MDYD) to have a ratio ( $\frac{LD}{MDYD}$ ) of between 2.5 and 4, and in particular between 2.7 and 3.6. ’566 Patent 2:63-67, EX 2001 ¶¶ 33-34. This specific range of “between 2.7 and 3.6” is recited in claim 1 of the ’566 Patent. ’566 Patent 10:13. The disclosure of the ’566 Patent explains why this particular range (*i.e.*, “between 2.7 and 3.6”) is “optimal.” ’566 Patent 3:3. Specifically, the ’566 Patent explains that having the  $\frac{LD}{MDYD}$  ratio in the recited range provides a seam with “very high strength, without which satisfactory use, for example as a seam felt, is not possible.” ’566 Patent 3:4-5, EX 2001 ¶ 34. The ’566 Patent further indicates that the recited ratio facilitates closure of the seam, facilitates inserting the pintle (*i.e.*, passing the pintle through the loops), shortens the time to draw in new clothing, and offers ergonomic advantages for the operator of the installation. ’566 Patent 3:4-16, EX 2001 ¶ 34. The ’566 Patent furthermore

describes the downsides of having  $\frac{LD}{MDYD}$  ratios that are too small or too large and explains that in the “[t]rials by applicant” the recited “between 2.7 and 3.6” range “has proven to be the optimum comprise.” ’566 Patent 3:1-3, 3:29-31, EX 2001 ¶¶ 35-37.

The ’566 Patent further indicates that in addition to the  $\frac{LD}{MDYD}$  ratio, “it may also be advantageous for the properties of the seam area to match the “loop density” of the seam.” ’566 Patent 6:8-10. The ’566 Patent elaborates that seam loop density is “a measure of the coverage of the seam area by MD threads.” ’566 Patent 6:8-20, EX 2001 ¶¶ 35-37. For example, in a fabric having an MD thread density of 64 yarns/100 mm, the seam area has 128 yarns/100 mm (due to the MD threads of the two ends interengaging). In this example, if the monofilaments having a diameter of 0.5 mm are used, the seam loop density would be 64%. ’566 Patent 6:20-25, EX 2001 ¶¶ 35-37.

The ’566 Patent indicates that in a preferred embodiment, provision is made for the loop density of the seam to be between 64% and 90% and elaborates that this particular range is an optimal range because it provides a seam with reduced permeability. ’566 Patent 6:36-40, EX 2001 ¶¶ 35-37. In contrast, having a loop density above 90% can result in losing the ability to seam the clothing, making it more difficult to arrange the seam loops to interengage. *Id.* 16:36-47, EX 2001 ¶¶

33-34. This specific “loop density of between 64% and 90%” is also recited in claim 1. '566 Patent 10:9-10, EX 2001 ¶¶ 33-34.

In addition to explaining the individual advantages of having the specific  $\frac{LD}{MDYD}$  ratio and loop density ranges, the '566 Patent also explains that the combination of these features makes it “possible to implement a clothing with a seam which – as a result of the high loop density – has a low permeability and nevertheless – as a result of the optimal  $\frac{LD}{MDYD}$  ratio, can be closed easily.” '566 Patent 7:15-19, EX 2001 ¶¶ 33-34.

The claims of the '566 Patent recite a clothing or a seam felt comprising the combination of these features. For example, claim 1 recites (*inter alia*):

- “a base structure including a two-layer laminate structure formed of one or a plurality of flat-woven fabrics,”
- “said base structure having two end sides,”
- “said laminate structure having MD threads being monofilaments with a round cross section forming seam loops,”
- “said seam loops having a diameter LD and said associated MD threads having a diameter MDYD,”
- “a seam interconnecting said end sides to make the clothing endless,”

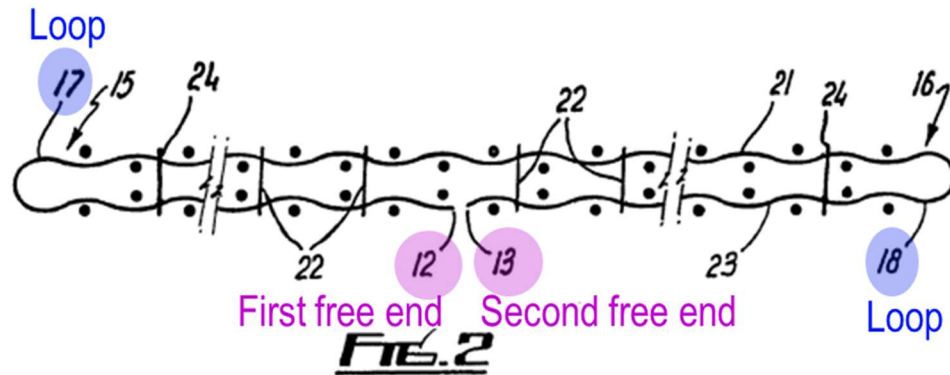
- “said seam being formed by interengaging said seam loops of said two end sides and an insertion of an insertion element,”
- “said seam having a loop density of between 64% and 90%,” and
- “said diameter LD of said seam loops and said diameter MDYD of said associated MD threads having a ratio LD/MDYD of between 2.7 and 3.6.”

As explained below, the asserted grounds fail to teach or suggest the elements of claim 1. Because claims 2-15 depend from claim 1, the asserted grounds also fail to teach or suggest the elements of dependent claims 2-15 for at least the same reasons.

## **B. Overview of the Cited Art**

### **1. Sudre (EX 1004)**

*Sudre* refers to a seamed endless structure for use as paper-machine clothing or a base material. *Sudre* 1:2-5. Specifically, *Sudre* explains that the base material for producing a papermaker's wet felt can comprise a flat woven fabric 11 with two free ends 12, 13. *Id.* 3:12-21 and FIGs. 1-2 (reproduced below in annotated form).



The fabric 11 is folded over and the two ends 12, 13 are brought to define a two-ply structure having fold regions 15, 16. *Id.* Weft yarns (*i.e.*, CD yarns) are removed from the fold regions 15, 16, thereby forming loops 17, 18. *Id.* 3:22-23. The two-ply structure is then made endless by interdigitation of the loops 17, 18 and introduction of a pintle wire 19. *Id.* 3:24-4:1.

*Sudre* states that “requisite lengths of base fabric woven in any desired weave pattern (*sic*) may be cut from a stock supply thereof, and a papermaker's fabric meeting the particular requirements of its intended end use as regards performance characteristics can be produced from that base fabric in a simple and ready manner.” *Id.* 6:11-17. However, other than this general statement regarding cutting requisite lengths of fabric from a stock supply and disclosing the basic design of a PMC, *Sudre* does not disclose any innovative parameters of such clothing, as recited in the claims of the '566 Patent.

## 2. Adanur (EX 1021)

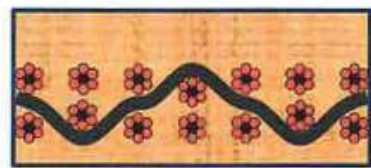
EX 1021 (“*Adanur*”) is an excerpt of the second edition of a book entitled “Paper Machine Clothing” that names Dr. Adanur, a professor in the department of Mechanical Engineering of Auburn University as an author. EX 1021 at 2. *Adanur* was published in December 2017, shortly before the March 15, 2018, earliest priority date of the ’566 Patent.

*Adanur* briefly refers to construction of press fabrics. *Adanur*, p.107 § 3.2.2 (EX1021, p.10). *Adanur* explains that a base fabric can have “a single-layer construction (one layer of MD yarns and one layer of CD yarns . . . or a laminated, multiple base construction with multiple layers of [single layer construction]. *Id.* p. 108, ¶ 1 (EX1021, p.11). *Adanur* further explains that “fabrics can be endless or joined with a seam,” and that seam “loops are formed by removal of CD yarns on two opposite ends (180 ° apart) of the base. This leaves an opening in the weave pattern where the MD yarns can mesh together to form the loop.” *Id.* p. 109, ¶ 4 (EX1021, p.12). *Adanur* also notes that there are many factors that influence the selection process of the fiber diameter and these factors include: 1) pressure uniformity requirements, 2) water handling requirements, 3) break-in time (or the time required for the paper machine to return to normal operating conditions, 4) available Uhle box vacuum, 5) sheet control issues such as drop-offs and blowing,

6) fiber shedding propensity, 7) filling propensity, and 8) bleed-through propensity.

*Id.* p. 111, ¶ 1 (EX1021, p.12).

*Adanur* further explains that fibers with different diameters can be blended in stratified layers for desired performance attributes and provides two images, namely FIG. 3.14 and FIG. 3.15, to show the “most common means of batt application” and “cross-sections of actual finished press fabrics.” *Id.* p. 111, ¶ 2, FIGURE 3.14, FIGURE 3.15 (reproduced below) (EX1021, p.13). However, other than providing some broad and general information, *Adanur* provides no reference to and/or discussion of loop density, loop diameter, diameter of MD threads, the  $\frac{LD}{MDYD}$  ratio, and/or the technical relationship between these parameters and fails to provide any quantitative data for these parameters.



Same denier batt throughout fabric



Fine denier cap over coarse fibers

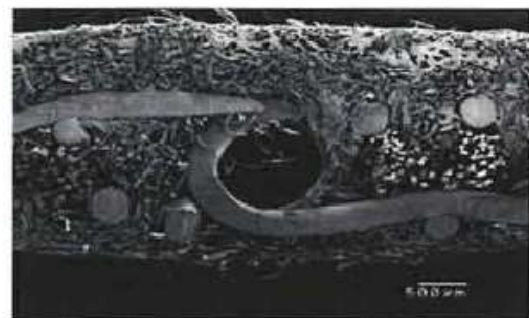


Extra fine cap over medium denier intermediate layer with coarse fibers surrounding base fabric

FIGURE 3.14. Various batt applications.



← CD →



← MD →  
Seamed felt with MD yarns forming the loops

FIGURE 3.15. Cross-sections of finished press fabrics.

### 3. Auburn Engineer (EX 1022)

*Auburn Engineer* is an Auburn University newsletter article entitled “From the Faculty: Formed, pressed & dried” written by Dr. Adanur. *Auburn Engineer* was published on May 18, 2018, over two months *after* the March 15, 2018, earliest priority date of the '566 Patent.

*Auburn Engineer* is a self-promotional article in which Dr. Adanur discusses the publication of the second edition of his book (*i.e.*, the *Adanur* reference) and

asserts that his book “[s]ince its first edition in 1997 has become the industry standard for papermaking, as well as for manufacturing of forming, pressing, and drying fabrics.” Auburn Engineer at p. 1, ¶ 2.

#### 4. Lee (EX 1005)

*Lee* refers to a seamed press felt formed from a base fabric material including MD yarns arranged in two superimposed layers that are joined by the MD yarns at CD folds at opposing ends to form a continuous structure. *Lee* at Abstract. Specifically, *Lee* indicates that its press felt is a three-layer construction 400, consisting of two layers of continuous tube 300 consisting of a first fabric structure 100 that sandwiches a second fabric structure 200 layer. *Lee* at 32, ¶2, FIG. 16-17, *See also* Petition at 73-75.

The fabric structure 100 is formed by yarns 110 that are canted at a small angle to the intended MD of the finished fabric. *Lee* at 30, ¶2, Yarn loops 340a, 340b are formed in the first structure by the yarns 110 at the opposing first and second fold regions 320a, 320b, where fibrous scrim materials are freed to create an open area 330 at the fold regions 320a, 320b. *Id.* The freed yarns 110 in the open area 330 form loops 340a, 340b at the opposing fold regions 320a, 320b, which are then used to form a seam in the assembled press felt. *Id.* Specifically, yarn loops 340a, 340b are brought together and intermeshed to provide an open

channel 419 through which a pintle 418 may be inserted to close the opposing ends. *Id.* The second structure is then inserted between the first structure. *Id.* 14 ¶2.

## 5. Penven (EX 1006)

*Penven* refers to forming a seamless fabric by inserting a pintle into a substantially tubular passageway 20 formed by intermeshing spaced apart loops 13 of a base fabric 11. *Penven* 3:6-19. The pintle is made of two independent and complimentary pintle elements 31, 32 that are shaped to interfit along their respective longitudinal axes. *Id.* 3:26-31. *Penven* explains that the pintle elements 31, 32 are tapered with a taper that is longer than the width of the seam to be closed in order to provide a tight closure. *Id.* 3:56-58. For a typical seam in a papermaker's fabric having an internal void diameter of about 50 mils, a pintle unit having a taper of about 0.075 mil/inch is effective for felts up to about 300 inches in width. *Id.* 3:64-68.

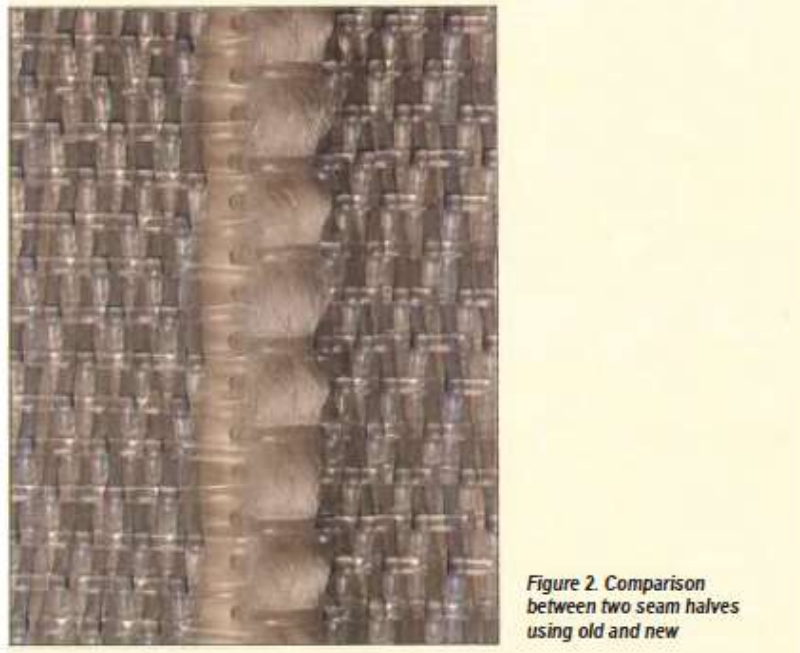
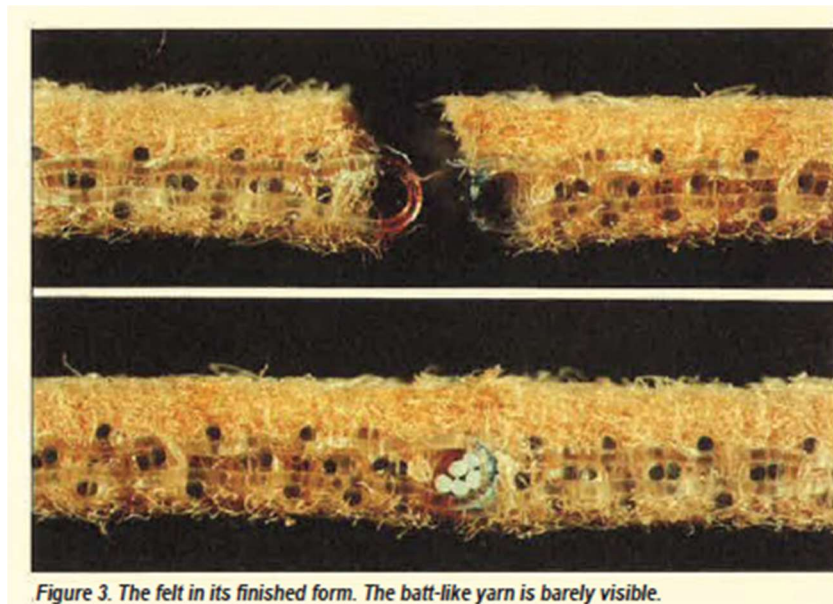
## 6. Rydin (EX 1027 – EX 1028)

*Rydin* is a Swedish magazine article that appears to discuss Petitioner's efforts in forming seamed felts and mark-free papers in the winter of 1990. *Rydin* notes that earliest seams had long loops such that cross-threads were missing on both sides of the centerline of the seam and this structure in some cases lead to marking in the zones where cross-threads were missing. *Rydin* then explains that “the most common causes of marking can be attributed to an overly open seam,

long loops, and a long flap, which quickly cause wear in the seam area.” Rydin at

1. Relying on this analysis, *Rydin* indicates that “significant improvement in the seam is based on achieving greater homogeneity in the seam zone combined with improved batt anchoring. The solution to these problems came during the winter of 1990 and has resulted to a patented process.” Rydin at 2.

*Rydin* further indicates that “[t]hrough the use of a special weaving technique, we have managed to bridge the top of the loops with an interwoven batt-like yarn that acts as a flap covering the loops. In *Figure 2* [reproduced below], two seam halves using old and new technology can be directly compared. The diameter of the batt-like yarn on top of the loops is in the same size range as the batt-fiber diameter. During the subsequent needling process, this yarn is largely integrated into the batt structure. In *Figure 3*, which shows the finished felt, this yarn is barely visible.” *Id.*



### III. Level of Ordinary Skill

For the purposes of this Preliminary Response, Patent Owner does not contest Petitioner's description of a POSITA having a bachelor's degree in Material Science, Materials Engineering, Mechanical Engineering, Textile

Engineering, or a comparable field and at least two years of working in textile engineering, fibers and textile manufacturing, or a related field.

As explained below, the Petition has failed to show that the claims of the '566 Patent are unpatentable irrespective of the level of skill of a skilled artisan.

#### **IV. Claim Construction**

For the purposes of this Preliminary Response, Patent Owner submits that the Board does not need to construe any claim terms in any particular way to conclude that the Petition is deficient and thus institution of review is not warranted. *See Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011) (“need only be construed ‘to the extent necessary to resolve the controversy’”).

#### **V. Applicable Legal Standards**

As explained above, institution of *inter partes* review is discretionary under 35 U.S.C. § 314. At a minimum, Petitioner must show there is a reasonable likelihood of prevailing with respect to at least 1 challenged claim. *See* 35 U.S.C. § 314(a); 37 C.F.R. § 42.108(c); Practice Guide at 3 (“The Board, acting on behalf of the Director, may institute a trial where the petitioner establishes that the standards for instituting the requested trial are met . . .”).

Each of Petitioner's grounds relies on obviousness under 35 U.S.C. § 103. A claim cannot be considered obvious if even one element of the claim is absent from

the prior art. *See CFMT, Inc. v. YieldUp Int'l Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003) (“Obviousness requires a suggestion of all limitations in a claim.”) (citing *In re Royka*, 490 F.2d 981, 985 (C.C.P.A. 1974)); *In re Rijckaert*, 9 F.3d 1531, 1534 (Fed. Cir. 1993) (reversing obviousness rejection as not all claim elements were taught or suggested); *Garmin Int'l, Inc. v. Patent of Cuozzo Speed Techs. LLC*, IPR2012-00001, Paper 15 at 15 (PTAB Jan. 9, 2013) (denying institution of IPR in part as prior art did not disclose all claim limitations in obviousness challenge).

Obviousness is resolved based on several factual determinations including the scope and content of the prior art, any differences between the claimed subject matter and the prior art, and the level of ordinary skill in the art. *See Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). IPR petitions “must address the *Graham* factors.” *Eizo Corp. v. Barco N.V.*, IPR2014-00358, Paper 11 at 29-30 (PTAB July 23, 2014) (citing *Graham*, 383 U.S. at 17-18) (faulting Petitioner for its failure to identify differences between the claimed subject matter and the prior art and its conclusory assertions about the teachings of the prior art); *see also Moses Lake Indus., Inc. v. Enthone, Inc.*, IPR2014-00243, Paper 6 at 18 (PTAB June 18, 2014); *Moses Lake Indus., Inc. v. Enthone, Inc.*, IPR2014-00246, Paper 6 at 17 (PTAB June 18, 2014); *eBay, Inc. v. Paid, Inc.*, No. CBM2014-00125, Paper 15 at 21 (PTAB Sept. 30, 2014).

The conclusion of obviousness based on the combination of references must be supported by an explicit analysis of a reason to combine such references. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). Mere conclusory statements are insufficient. Instead, “there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006); *see also LG Elecs., Inc. v. Cellular Commc'ns Equip. LLC*, IPR2016-00197, Paper 7 at 7-11 (PTAB Apr. 29, 2016) (petition's conclusion of obviousness lacked sufficient articulated reasons with rational underpinnings for modifying references to achieve specific elements of the claims).

## **VI. Adanur and Rydin Are Not Printed Publications**

### **A. The Petition Has Failed to Present Any Arguments that Adanur and Rydin Purported Printed Publications**

As a threshold matter, the Petition fails to present any arguments explaining why *Adanur* and *Rydin* were published and publicly accessible so as to qualify as a printed publication. The Petition does not provide the relevant legal standards, nor does it make any argument why each reference is a printed publication. Instead, Petitioner only provides conclusory statements and a bare assertion that *Adanur* and *Rydin* were “publicly available” as of 2017 and 1992, followed by a wholesale citation to several paragraphs of two different declarations (the “**Munford Declarations**”). *See* Petition at 3 (citing Exhibits 1030-1031).

However, Petitioner's attempt to incorporate arguments by reference expressly violates the PTAB's rules. *See* Decision Denying Petitioner's Request on Rehearing of Final Written Decision, *Medivis, Inc. v. Novarad Corp.*, IPR2023-00042, Paper 37 at 10 (PTAB Apr. 23, 2024) (PTAB "rules prohibit parties' incorporation of arguments by reference"); *see also* 37 C.F.R. § 42.6(a)(3) ("Arguments must not be incorporated by reference from one document into another document."). *In Medivis*, the Board found petitioner's arguments to constitute "improper incorporations by reference because it included wholesale citations to two declarations without any discussion." *See* IPR2023-00042, Paper 37 at 10. The Board in *Medivis* recognized that "incorporation 'by reference amounts to a self-help increase in the [brief's] length.'" *Id.* (quoting *DeSilva v. DiLeonardi*, 181 F.3d 865, 866–67 (7th Cir. 1999)). As the Federal Circuit has repeatedly recognized, "incorporating argument by reference 'cannot be used to exceed word count'" because "[i]t is 'fundamentally unfair to allow a party to use incorporation to exceed word count.'" *Medivis*, IPR2023-00042, Paper 37 at 11 (quoting *Promptu Sys. Corp. v. Comcast Cable Comm's, LLC*, 92 F.4th 1384, 1385 (Fed. Cir. 2024) (quoting *Microsoft Corp. v. DataTern, Inc.*, 755 F.3d 899, 910 (Fed. Cir. 2014))). On this basis, the Board in *Medivis* concluded that the petitioner improperly attempted to incorporate by reference testimonial evidence from a declaration. *See id.*

Similar to the petitioner in *Medivis*, Petitioner has improperly attempted to incorporate by reference the Munford Declarations, without providing any substantive arguments. Such wholesale incorporation by reference violates the PTAB's rules and amounts to an improper increase in the length of the Petition, which is just **56 words** under the word-count limit under 37 C.F.R. § 42.24. *See* Certification page of Petition. Petitioner should not be permitted to effectively exceed its word count limit by incorporating its arguments regarding publication and public accessibility by reference to the Munford Declarations. Absent such incorporation, the Petition has failed to show a reasonable likelihood that *Adanur* and *Rydin* are printed publications. Thus, Grounds 1 and 3 fail to show that the challenged claims of the '566 Patent are unpatentable.

**B. Petitioner Cannot Require the Board to Piece Together its Potential Arguments on Whether the References are Printed Publications**

Even if the Board were to consider Petitioner's tacit request to incorporate the two declarations by reference and exceed its word count limit, Petitioner's wholesale citations to the declarations fail to support its conclusory arguments regarding public availability of *Adanur* and *Rydin*. Much like the Petition, the Munford Declarations do not set forth the legal standard for printed publications or public accessibility, much less present any legal theories, such as whether *Adanur* and *Rydin* were actually disseminated or otherwise made available to a POSITA

exercising reasonable diligence in order to qualify as “publicly available.” By failing to present these legal arguments, the Petitioner is implicitly asking the Board to “piece together” potential arguments that may be made based on the facts alleged in the Munford Declarations.

However, it is not the Board's responsibility to piece together evidence or speculate as to Petitioner's position beyond the bare conclusions presented in the Petition. *See TCL Communication Technology Holdings Ltd. v. DataQuill Ltd.*, IPR2020-00746, Paper 21 at 22 (Sept. 18, 2020) (denying institution and explaining that it is “Petitioner's responsibility to cite specific evidence to support its arguments, not the Board's responsibility to piece together evidence or speculate as to Petitioner's position”). Thus, the Petition has failed to show a reasonable likelihood that the *Adanur* and *Rydin* are printed publications. For this additional reason, Grounds 1 and 3 fail to show that the challenged claims of the '566 Patent are unpatentable.

**C. Petitioner Has Failed to Show that Adanur and Rydin Were Publicly Accessible**

Even if the Board were to consider Petitioner's tacit requests to incorporate the two declarations by reference and piece together evidence and speculate as to Petitioner's position, Petitioner has failed to show, at a minimum, that *Adanur* and *Rydin* were publicly accessible to constitute printed publications. To satisfy the

requirement of public accessibility, Petitioner must show that a “document has been disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art[,] exercising reasonable diligence, can locate it.” *SRI Int’l, Inc. v. Internet Sec. Sys., Inc.*, 511 F.3d 1186, 1194 (Fed. Cir. 2008). Petitioner has not provided any evidence of actual dissemination and failed to show that a POSITA could locate the references when exercising reasonable diligence while searching for specific clothing design parameters.

For both *Adanur* and *Rydin*, the Petition provides a wholesale reference to the Munford Declarations (EX1030-1031). *See* Pet. at 3. Regarding *Adanur*, the Munford Declarations merely broadly discuss catalog record creation process and indicate that the declarant is of the opinion that “the University of California Irvine Library first acquired Paper Machine Clothing (2017 Printing) [of *Adanur*] as of June 8, 2017.” EX1030 at ¶ 11. Similarly, regarding *Rydin*, the declarant asserts that she is of the opinion that “Western Michigan University Library first acquired Svensk Papperstidning/Nordisk Cellulosa [“Svensk”] as of April 15, 1992.” EX1030 at ¶ 9. From there, without providing any evidence or justification, the declarant assumes that the Western Michigan University Library continued to receive the Svensk “in perpetuity” and ultimately made *Rydin* publicly available “shortly after its initial publication in September 1992.” EX1030 at ¶ 9.

However, other than merely asserting that *Adanur* and *Rydin* must have been available at certain libraries, Petitioner and the Munford Declarations provide no evidence or argument that interested members of the public would have actually been able to locate these references with reasonable diligence, especially since *Adanur* was published shortly before the earliest priority date of the '566 Patent. *See Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1350–51 (Fed. Cir. 2016) (agreeing with Board that petitioner “failed to carry its burden of proving public accessibility” of an asserted reference as it must provide “a sufficiently definite roadmap” leading to the reference); *see also MHL Custom, Inc. v. Waydoo USA, Inc.*, No. CV 21-0091-RGA, 2023 WL 5748755, at \*4 (D. Del. Sept. 6, 2023) (explaining that indexing / technical accessibility, by itself, is “not sufficient to prove public accessibility”) (citing *Acceleration Bay, LLC v. Activision Blizzard Inc.*, 908 F.3d 765, 774 (Fed. Cir. 2018)). In both *Blue Calypso* and *MHL Custom*, the testimony only confirmed technical accessibility and failed to show that any actual search was performed or what a sufficient search would require to locate the reference. *See Blue Calypso*, 815 F.3d at 1350 (rejecting argument that “an internet search engine would have been able to locate” the reference in part because there was no “evidence that a query of a search engine before the critical date, using any combination of search words, would have led to [the reference] appearing in the search results”); *see also MHL Custom*, 2023 WL 5748755, at \*4.

Here, the Munford Declarations fail to show that any actual search was performed or what type of search would have been sufficient and/or required to locate *Adanur* and *Rydin*. As the Federal Circuit has cautioned, technical accessibility does not show that an interested person would have located the reference with reasonable diligence. *Decision Denying Institution of Inter Partes Review, Guardian Alliance Technologies, Inc. v. Tyler Miller*, IPR2020-00031, Paper 23 at \*8 (PTAB Mar. 26, 2020) (“Public accessibility requires more than technical accessibility.”) (citing *Samsung Elecs. Co. v. Infobridge Pte. Ltd.*, 929 F.3d 1363, 1369 (Fed. Cir. 2019) and *Acceleration Bay*, 908 F.3d at 773). Here, other than showing technical accessibility, the Munford Declarations fail to show that any actual search was performed or what a sufficient search would have been able to locate *Adanur* or *Rydin*. See *Blue Calypso*, 815 F.3d at 1350; MHL Custom, 2023 WL 5748755 at \*4.

Accordingly, even if Petitioner were allowed to improperly incorporate the Munford Declarations by reference and the Board were to piece together what Petitioner's argument could be, the alleged facts fail to show, at a minimum, that *Adanur* and *Rydin* were publicly accessible. Thus, these references are not printed publications for this additional reason

**VII. Sudre, Adanur, the Secondary References, and/or Knowledge of a Person of Ordinary Skill in the Art Do Not Render Claims 1-15 Obvious**

Petitioner's first set of grounds are based on the combination of *Sudre* and *Adanur*. As detailed below, Grounds 1A-1E fail because they are premised on impermissible hindsight, unsupported speculation and assumptions, and imprecise and incorrect data analysis, and because Petitioner has not shown that a POSITA would have reasonable expectation of success in modifying *Sudre* using *Adanur*.

**A. Ground 1A: Sudre and Adanur Fail to Teach or Suggest a Loop Density of Between 64% and 90% and an LD/MDYD Ratio of Between 2.7 and 3.6****1. Petitioner's Arguments Are Solely Premised on Conjecture And Impermissible Hindsight**

Ground 1A involves the combination of *Sudre* and *Adanur*. Petition at 2. Petitioner begins its arguments by acknowledging that *Sudre* "describes the well-known method for making flat-woven PMC endless," including a base material composed of MD threads interwoven with CD threads. *Id.* 11. Petitioner then briefly discusses *Adanur* and explains that *Adanur* discloses cross-sections of "actual finished press fabrics" in MD and CD perspectives. Next, Petitioner refers to *Auburn Engineer* (EX 1022) and asserts that because *Adanur* was an "industry standard" textbook in 2017, a POSITA would have been motivated to measure the "distances and lengths [of the pictures in *Adanur*] in pixels and convert the [measurements of the] pixels to actual lengths" and determine MD threads

diameter and loop densities for a base structure based on those measurements. *Id.* 15, EX 1003 ¶ 67. Relying on this reasoning, Petitioner proceeds to use measurements obtained by its expert from pictures of *two different press fabrics* in *Adanur* to allege that the combination of *Sudre* and *Adanur* renders claim 1 of the '566 Patent obvious.

In other words, Petitioner asserts that because *Sudre* suggests cutting base fabric from a stock supply and because Dr. Adanur said that the first edition of his book has become an industry standard in the field, a POSITA would have been motivated to 1) scan the grainy, unexplained, black and white pictures, 2) measure and/or count the pixels in the scanned image, 3) obtain averages and standard deviations of those measurements, 4) convert those measurements to actual dimensions, 5) calculate the average MD thread diameters and densities, and 6) design a base structure based on those calculations, *all the while maintaining an expectation of success*.

In making this assertion, Petitioner offers no support other a copy of Dr. Adanur's self-promotional article in the Auburn Engineer, which was published over two months after the earliest filing date of the '566 Patent. There is no evidence to demonstrate that *Adanur* was in fact "an industry standard" and Petitioner does not explain why this so-called "industry standard" does not teach measuring the MD diameter and/or even hint at determining the  $\frac{LD}{MDYD}$  ratio or

considering the loop density percentages in making base structures. If these values and ranges were, as the Petitioner alleges, in fact so well-known and well-understood, should not have this “industry standard” book at least suggested determining these values or explained the advantages provided by maintaining the combination of these features within the ranges recited in claim 1 of the '566 Patent?

In reality, Petitioner's reliance on measurements of the pictures of *Adanur* are purely premised on conjecture and impermissible hindsight. As the Federal Circuit has explained, it is hindsight to use “the invention to define the problem the invention solves [because] when someone is presented with the identical problem and told to make the patented invention, it often becomes virtually certain that the artisan will succeed in making the invention.” *Mintz v. Dietz & Watson, Inc.*, 679 F.3d 1372, 1377 (Fed. Cir. 2012); *see also AT&T Services Inc. et. Al. v. Innovative Sonic Ltd.*, IPR2024-001143 (PTAB Feb. 11, 2025) (denying institution after finding no motivation to combine because of an overly broad conclusion that “suffers from hindsight bias”).

Here, “us[ing] the invention to define the problem the invention solves” is precisely what the Petitioner has done. *Id.* Petitioner's measurements of the pixels in *Adanur*'s pictures, and their subsequent analysis of those measurements to arrive at the  $\frac{LD}{MDYD}$  ratio and the loop density percentages, are solely motivated by

hindsight based on the limitations of the claims of the '566 Patent. Although Petitioner also relies on its expert, the expert also fails to provide any corroborating evidence to support Petitioner's statements on motivation and expectation of success. *See* Petition 14 (citing EX1003, ¶¶ 63-65 but failing to provide any corroborating evidence). Petitioner's expert also offers no explanation of why a POSITA looking to "identify particular requirements of the fabric" would want to specifically look into the combination of the LD/MDYD ratio and the loop density percentages other than the '566 Patent's explanation of why those particular ratios and percentages are important. EX1003, ¶¶ 75-76. Accordingly, Petitioner's argument with respect to its motivation to combine *Adanur* with *Sudre* is based on impermissible hindsight and should be dismissed. *See Mintz*, 679 F.3d at 1377.

Further, Petitioner's articulated motivations to combine and expectation of success arguments fail to pass muster. "An obviousness determination requires finding that a person of ordinary skill in the art would have been motivated to combine or modify the teachings in the prior art and would have had a reasonable expectation of success in doing so." *Regents of Univ. of Cal. v. Broad Inst., Inc.*, 903 F.3d 1286, 1291 (Fed. Cir. 2018) (citing *In re Stepan Co.*, 868 F.3d 1342, 1345–46 (Fed. Cir.2017)). "[T]o have a reasonable expectation of success, one must be motivated to do more than merely to vary all parameters or try each of numerous possible choices until one possibly arrived at a successful result." *Pfizer*,

*Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1365 (Fed. Cir. 2007) (quoting *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1165 (Fed. Cir. 2006)). The fact that *Sudre* merely discloses that “PMC meeting requirements of its intended end use **can be** produced” is not sufficient to show that a POSITA **would have been** motivated to look into *Adanur* to find parameters and values that *Sudre* does not even teach (*i.e.*, loop density percentage and  $\frac{LD}{MDYD}$  ratio) and try all such parameters “until one possibly arrived at a successful result.” See EX 2001 ¶ 39; see also *Pfizer, Inc.* 480 F.3d at 1365. “[O]bviousness concerns whether a skilled artisan **not only could have made but would have been motivated** to make the combinations or modifications of prior art to arrive at the claimed invention.” *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) (citing *InTouch Technologies, Inc. v. VGO Communications, Inc.*, 751 F.3d 1327, 1352 (Fed.Cir.2014)); see also *PersonalWeb Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 994 (Fed. Cir. 2017) (“[R]easoning . . . that a skilled artisan, once presented with the two references, would have understood that they could be combined [] is not enough: it does not imply a motivation to pick out those two references and combine them to arrive at the claimed invention”).

This is especially true given that *Adanur* provides no indication that the MD threads in the CD Picture form seam loops and is completely silent on loop density, loop diameter, and MD thread diameter dimensions, much less the specific

relationship and combination of these dimensions. Further, there is no evidence that the illustrated fabric in the CD Picture is part of a seamed press felt. In fact, the section of *Adanur* that contains these photographs is titled “The Batt” and focuses on the batt material that is stitched into the woven threads, so there is no reason why a POSITA would have looked at these photographs to determine thread and loop dimensions of the woven portion of the fabric. EX 2001 ¶¶ 39-42. Furthermore, Petitioner has failed to explain why there would have been a reasonable expectation of success in doing so. A POSITA could not logically expect that they could just take the dimensions from some random photos in *Adanur* and apply those dimensions to *Sudre* and be successful in achieving their “end results.” EX 2001 ¶¶ 39-42.

Federal Circuit precedent requires the “party seeking to invalidate a patent as obvious must demonstrate ‘by clear and convincing evidence that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success from doing so.’” *Bristol-Myers Squibb Co. v. Teva Pharms. USA, Inc.*, 752 F.3d 967, 973 (Fed. Cir. 2014) (quoting *Procter & Gamble Co. v. Teva Pharms. USA, Inc.*, 566 F.3d 989, 994 (Fed. Cir. 2009)). Here, the burden was on Petitioner, at the petition stage, to explain why POSITA **would have** been motivated to combine and modify *Sudre* based on measurements

obtained from the pictures of *Adanur* and what would have provided reasonable expectation of success. *KSR Int'l Co*, 550 US. at 418 (there must be “a reason” for POSITA “to combine the elements in the way the claimed new invention does”). Petitioner has not met its burden because it has provided no tangible evidence and has merely based its entire arguments on a single sentence in *Sudre* that states “a papermaker's fabric meeting the particular requirements of its intended end use as regards performance characteristics can be produced from that base fabric in a simple and ready manner.” Petition at 18-19, *Sudre* 6:11-17. Ground 1A fails for this reason alone.

**2. Petitioner Incorrectly Assumes that the MD and CD Picture are from the Same Fabric**

Petitioner's measurements of and resulting conclusions from the MD Picture and the CD Picture of *Adanur* assume that 1) the CD Picture and the MD Picture are obtained from the same fabric, and 2) the CD Picture and the MD Picture are presented in the same magnification and resolution scales. However, not only are these assumptions merely conjectures that have no basis in *Adanur*, but they are demonstrably false. *See*, EX 2001 ¶ 47. *Adanur* and Dr. Pastore both indicate that these pictures illustrate two *different* fabrics and not the same fabric:

67. As further illustrated below, I have taken measurements of the “actual finished press fabrics” shown in Adanur. EX1021, 111. My measurements can be readily taken to show that in 2017, before the '566 Patent's Critical Date, these exemplary base fabrics had a seam made of MD threads with a diameter of about 0.32 mm present at an MD thread density of about 13.3 threads/cm, and with a loop diameter of about 0.96 mm. EX1021, 111. As discussed further *infra*, these parameters correspond to a loop density of

### Excerpt from EX 1003, ¶13 (annotated)

Many factors influence the selection process of the fiber denier (diameter). These include:

1. Pressure uniformity requirements
2. Water handling requirements
3. Break-in time (the time necessary for the paper machine to return to normal operating conditions)
4. Available Uhle box vacuum
5. Sheet control issues such as drop-offs, blowing, and sheet stealing
6. Fiber shedding propensity
7. Filling propensity
8. Bleed-through propensity

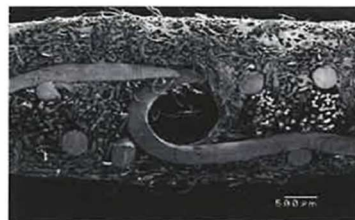
Fibers with different deniers can be blended or applied in stratified layers for desired performance attributes. Figure 3.14 shows the most common means of batt application. Figure 3.15 shows cross-sections of actual finished press fabrics.



Same denier batt throughout fabric



← CD →



← MD →  
Seamed felt with  
MD yarns forming the loops

FIGURE 3.15. Cross-sections of finished press fabrics.

### Excerpt from Adanur (EX 1021, page 13, annotated)

*See also* EX 2001 ¶ 50.

In addition to referring to two different fabrics, *Adanur* also provides no indication that the fabrics shown in the CD and MD Pictures are structurally linked and/or derived from the same sample. In fact, a POSITA can visually see the differences in the CD and MD threads and recognize that these pictures are from two different fabrics because no MD threads are visible at the bottom of the structure shown in the CD Picture. EX 2001 ¶¶ 47-48. If the CD and MD Pictures were from the same fabric structure, MD threads would necessarily be visible, especially if the structure were a two-layer laminate with continuous MD threads, as the Petition asserts. *Id.* ¶¶ 48-49. Moreover, if the CD and MD Pictures were from the same two-layer structure, the two layers would have been visible in the CD Picture or at the very least, the top and bottom parts of the fabric in the CD Picture would have been similar. *Id.*

Further, a POSITA can readily see that the scale and magnification of the CD and MD Pictures are different because the height of the fabric in the CD Picture is more than the height of the fabric in the MD Picture. If the CD and MD Pictures were from the same fabric and had the same magnification, the height of the fabric in the two pictures would have been the same. *Id.* ¶¶ 51-52.

Further, there is no evidence that the CD Picture illustrates a seamed structure and *Adanur* provides no indication that the MD threads in the CD Picture

form seam loops or that the CD Picture is part of a seamed press felt. *Id.* ¶ 53. To the contrary, the fact that the MD and CD Pictures appear in a section of *Adanur* titled “The Batt,” it would be reasonable for a POSITA to assume that the pictures are provided to depict the batt fiber structure and not a seam region. *Id.*

Accordingly, there is absolutely no indication that the MD Picture and the CD Picture are from the same fabric. Because all of Dr. Pastore's calculations are based on this incorrect assumption, the rest of his analysis Petitioner's arguments with respect to *Adanur* fail.

### **3. Petitioner's Measurements and Analysis are Premised on Drawings Not Prepared to Scale and are Statistically Unsound**

As discussed above, Petitioner has provided no explanation why a POSITA would have combined measurements from pictures of two different press felts. However, even ignoring all the faults discussed above and assuming, *arguendo*, it was proper to take and combine measurements from these two photographs, Petitioner's process for doing so is erroneous and imprecise. Specifically, Petitioner's arguments in Ground 1A are premised based on the assertion that *Adanur*'s FIG. 3.15 illustrates a monofilament diameter of approximately 0.32 mm and a seam loop diameter of approximately 0.96 mm. *See* Petition 14 (citing EX1003, ¶¶ 67-75). According to the Petitioner's expert, he took measurements of the images in *Adanur* “using conventional approaches, measuring distances and

length in pixels and converting pixels to actual lengths (e.g., mm) based on the scale bar that is shown in the image.” EX1003, ¶ 66.

Dr. Pastore explains that he first determined the MD thread diameter and MD thread density of the fabric shown on the picture labeled “CD” (“CD Picture”) by directly measuring that picture. Dr. Pastore then measured the loop diameter of the seam loop in the picture labeled “MD” (“MD Picture”) and converted his measurement from pixels to millimeters by relying on the scalebar of the MD picture. EX1003, ¶¶ 66-68. Based on these measurements, Dr. Pastore concluded that *Adanur*'s “exemplary base fabrics had a seam made of MD threads with a diameter of about 0.32 mm present at an MD thread density of about 13.3 threads/cm, and with a loop diameter of about 0.96 mm.” EX1003, ¶ 68.

As an initial matter, Patent Owner notes that the measurements of Dr. Pastore are premised on the assumption that the MD and CD Pictures are included in *Adanur* for dimensional analysis. This assumption is incorrect because nowhere in *Adanur* is there any suggestion that its pictures or drawings are made to scale and/or provided for dimensional analysis. EX 2001 ¶ 58. There is also no indication that *Adanur* intended for a POSITA to measure the MD and CD Pictures. *Id.* To the contrary, the only reference made by *Adanur* to the CD and MD Pictures is a single sentence that indicates “Figure 3.15 shows cross-sections of actual finished press fabrics.” EX. 1021 (emphasis added).

It is well-understood that photographs are inherently imprecise and subject to distortion, scale ambiguity, and perspective limitations. Therefore, measurement taken from photographs are unreliable without a validated scale. In fact, the Federal Circuit has explained that for a picture to anticipate a claim, the picture should include “sufficient disclosure” and the description of the article accompanying the picture or drawing should provide sufficient disclosure for what it would reasonably teach a POSITA. *Jockmus v. Leviton*, 28 F.2d 812 (2d Cir. 1928); *see also, In re Wright*, 569 F.2d 1124, 1127-28, 193 USPQ 332, 335-36 (CCPA 1977). When a reference “does not disclose that his drawings are to scale [a]bsent any written description in the specification of quantitative values, arguments based on measurement of a drawing are of little value.” *In re Wright*, at 1127; *see also Hockerson-Halberstadt*, 222 F.3d 951, 956 (Fed. Cir. 2000) (“Under our precedent, however, it is well established that patent drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on the issue”); *In re Wilson et al.*, 312 F.2d 449, 454 (CCPA 1963) (“Patent drawings are not working drawings and this argument is predicated, moreover, on a greatly enlarged section of a small drawing obviously never intended to show the dimensions of anything.”).

In addition to lack of scale and quantitative values, measurements obtained from photographs and pictures have been consistently viewed by courts not to be sufficiently reliable as clear and convincing evidence of invalidity. *See, e.g., Eastman Kodak Company v. Agfa-Gevaert N.V.*, 560 F. Supp. 2d 227 (W.D.N.Y. 2008). In *Eastman Kodak Company*, the Court emphasized that the party asserting invalidity has the burden of providing clear and convincing evidence and found expert's measurement protocol and analysis of photographs to be "not sufficiently reliable as to constitute clear and convincing evidence of invalidity." *Eastman Kodak Company*, 560 F. Supp at 249-250. In reaching its decision, the Court also considered the quality of the photographs and "how [the photograph] had been changed from the original as a result of its being reproduced for bookmaking purposes." *Id.* at 251. The Court further considered the admissibility and probative value of an expert's that was based on measurements of granular structures visible in a single photograph and explicitly rejected expert's analysis in part due to the insufficient sample size. *Id.* at 275.

Here, similar to *Eastman Kodak Company*, Petitioner's Ground 1 is entirely based on limited sample points (*i.e.*, measurements of 7 threads) obtained from grainy photographs in *Adanur* that lacks scale validation, uniformity, or any statistical basis that could possibly allow a POSITA to infer with confidence the actual dimensions or proportions of the underlying structure. Therefore,

Petitioner's arguments with respect to *Adanur* are unavailing and should be dismissed.

In addition, as discussed above, a POSITA can readily see that the scale and magnification of the CD and MD Pictures are different because the height of the fabric in the CD Picture is more than the height of the fabric in the MD Picture. *See* EX 2001 ¶ 51. Even assuming (incorrectly) that these two photographs were from the same fabric, the scale of the photographs would need to be adjusted to be the same before taking measurements of the photographs. Petitioner did not do so, and thus its analysis is fatally flawed. *See* EX 2001 ¶ 56.

Furthermore, in addition to being purely based on conjecture and incorrect assumptions, Dr. Pastore's measurements are not mathematically and/or statistically sound. Specifically, Dr. Pastore states that he "measured two diameters (in pixels): one in the horizontal direction and another in the vertical direction [and] averaged these measurements and obtained an average MD thread diameter of 69 pixels with a standard deviation of 9.6 pixels." EX 1003, ¶¶ 69-70, EX 2001 ¶ 56. For example, Dr. Pastore notes that he identified seven (7) MD threads in the CD Picture and measured two diameters for each thread: a vertical diameter and a horizontal diameter:

| Horizontal diameter (pixels) | Vertical Diameter (pixels) |
|------------------------------|----------------------------|
| 80                           | 59                         |
| 76                           | 60                         |
| 75                           | 61                         |
| 79                           | 65                         |
| 75                           | 63                         |
| 77                           | 58                         |
| 79                           | 65                         |

Dr. Pastore indicates that he subsequently “averaged these measurements to obtain an average MD thread diameter of 69 pixels with a standard deviation of 9.6 pixels.” *Id.* ¶ 70. However, as detailed below, Dr. Pastore’s measurements and results are based on unsupported assumptions and statistically unsound calculations. EX 2001 ¶¶ 56-57.

Understanding the unreliability of his measurements evidenced through the large variation in measured diameters, Dr. Pastore relied on averaging and additional conjectures to arrive at final measurements. EX1003, ¶ 69. However, by simply averaging the vertical and horizontal diameters, Dr. Pastore overlooks fundamental and well-known principles of statistics and incorrectly assumes that the vertical and horizontal diameter samples have the same distribution. EX 2001 ¶ 59. The T-Distribution (or Student’s T-Distribution) Confidence Interval is a well-known data analysis scheme used for analyzing distribution of data obtained from smaller sample sizes, where population variance is unknown. *Id.* In order to

construct a confidence interval, a sample mean is first constructed. *Id.* This sample mean is the average of the sample data. *Id.* Since Dr. Pastore has two datasets (*i.e.*, horizontal diameter dataset and a vertical diameter dataset), he would need to calculate two averages (or two means): one average for the horizontal diameter data and another average for the vertical diameter data:

$$\text{Mean (horizontal diameters)} = 77.29$$

$$\text{Mean (vertical diameters)} = 61.57$$

A sample standard deviation should then be calculated for each sample and each average:

$$\text{Standard Deviation (horizontal diameters)} = \sqrt{\frac{\sum_{n=1}^7 (\text{horizontal diameter}_n)^2}{n-1}} = 2.06$$

$$\text{Standard Deviation (vertical diameters)} = \sqrt{\frac{\sum_{n=1}^7 (\text{Vertical diameter}_n)^2}{n-1}} = 2.83$$

Individual T-Distribution confidence intervals can then be calculated for each dataset. EX 2001 ¶ 59-61.

However, Dr. Pastore has done none of that. Instead, he has incorrectly averaged two different metrics to arrive at a meaningless value that fails to represent the actual aspects of the CD Picture. EX 2001 ¶ 61-63.

In fact, Dr. Pastore's individual data horizontal and vertical data points serve to support Patent Owner's arguments that *Adanur* did not intend the CD Picture to be used for dimensional analysis. As shown above, the MD threads that Dr. Pastore

exhibit an oval-shaped cross section with a horizontal diameter of  $77.29 \pm 2.06$  pixels and a vertical diameter of  $61.57 \pm 2.83$  pixels. As it is well-understood by a POSITA with experience in the paper machine clothing industry that MD threads in press felt are known to have a round cross-section, the oval presentation of the MD threads in the CD Pictures strongly suggests that the CD Picture is distorted and cannot be relied upon for dimensional analysis. EX 2001 ¶¶ 58, 61-63. Dr. Pastore's averaging of the vertical and horizontal measurements together seems to be an attempt to avoid the fact of this distortion. *Id.*

Alternatively, even assuming, *arguendo*, that the CD Picture was not distorted and was in fact provided by *Adanur* for dimensional analysis, the oval-shaped nature of the MD threads directly contradicts the language of claim 1, which explicitly requires "MD threads being monofilaments with a **round** cross section." '566 Patent, 9:64-65, EX 2001 ¶¶ 58, 61-63. In that case, this ground fails for that reason as the combination would include oval threads.

Accordingly, Petitioner's arguments with respect to *Adanur* fail because they are solely fails because the entirety of Petitioner's argument is premised on mathematically inaccurate and statistically unsound analysis of data.

**B. The Petition Does Not Show That the Challenged Claims Are Unpatentable Under Grounds 1B, 1C, 1D, and 1E**

Ground 1B involves the combination of *Sudre*, *Adanur*, and *Shipley*, Ground 1C involves the combination of *Sudre*, *Adanur*, and *Straub*, Ground 1D involves the combination of *Sudre*, *Adanur*, and *Lidar*, and Ground 1E involves the combination of *Sudre*, *Adanur*, and *Yook*. Petition at 42-72.

Petitioner only relies on *Shipley*, *Straub*, and *Lidar* for their purported teaching of the additional elements recited in claims 2-15, which are all dependent claims that depend from claim 1. Petitioner provides no additional arguments regarding claim 1 and continues to rely on the same rationales as in Ground 1A. *Id.* Accordingly, Grounds 1B-1E also fail for at least the reasons discussed above for Ground 1A.

**VIII. *Sudre*, *Lee*, *Penven*, the Secondary References, and/or Knowledge of a Person of Ordinary Skill in the Art do not Render Claims 1-15 Obvious**

Petitioner's second set of grounds rely on a combination of *Sudre*, *Lee*, and *Penven*, with the Petitioner cherry-picking unrelated features from each reference to arrive at the various elements of claim 1, without analyzing how the teachings of the individual references interoperate to provide the technical relationship between the optimal loop density and the optimal  $\frac{LD}{MDYD}$  ratio recited in claim 1. As detailed below, Grounds 2A-2E fail because they are premised on incorrect analysis of the references, impermissible hindsight, and unsupported speculation, and because

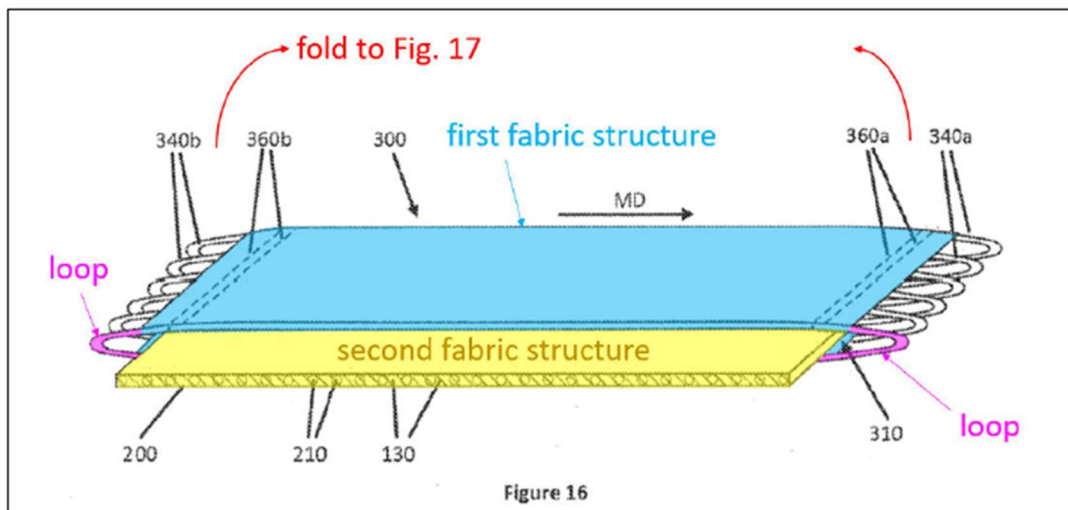
Petitioner has failed to articulate any coherent reasons as to why a POSITA would have been motivated to combine and modify the teachings of *Sudre* using *Penven* and *Lee*, while utilizing parameters that are explicitly contrary to the teachings of *Lee*.

**A. Ground 2A: *Sudre*, *Lee*, and *Penven* Fail to Teach or Suggest a Loop Density of Between 64% and 90% and an LD/MDYD Ratio of Between 2.7 and 3.6**

**1. Lee Does Not Teach or Suggest the Diameter of MD Thread and/or the Warp Thread Density Recited in Claim 1**

Petitioner's arguments in Ground 2 are premised on the assertion that *Lee* discloses MD thread yarn density of 24 yarns/in (9.45 yarns/cm) and MD thread yarn diameter of about 0.4mm, which together corresponds to a loop density of 75.6%. Petition at 83. However, as detailed below, this argument is fundamentally flawed because it is contrary to the explicit teachings of *Lee*.

*Lee* discloses a two-layer fabric structure having two distinct first and second structures arranged such that the first structure forms the seam loops and is responsible for the mechanical integrity of the seam loops. *See, e.g., Lee* paragraph bridging 29-30 ("Yarn loops 340a, 340b (see Figure 13) [are] formed by the yarns 110 of the first fabric structure 100 at the opposing first and second fold regions 320a, 320b of the continuous tube"). EX 2001 ¶ 64.



Lee, Fig. 16

The second fabric structure, on the other hand, is a different “generally planar yarn assembly” that is inserted into the tube formed by the first fabric structure. Lee, 16 ¶2, *See also* Lee, Figure 16 (reproduced above, as annotated by Petitioner, Petition at 74). EX 2001 ¶¶ 65-66.

As summarized in the table provided below, *Lee* explains that ***the diameter of the yarns of the second structure is generally less than the diameter of the yarn in the first structure*** and indicates that the yarns of the second structure preferably have a yarn diameter of about 0.4mm. Lee 11 ¶2. *Lee* also indicates that in a particularly preferred arrangement of the second fabric structure, **for use with the preferred arrangement of the first** structure, the yarn density of the second structure is 24 yarns/in or (9.45 yarns/cm). Lee, 28. *Lee* further notes that in the preferred arrangement of the first structure, the diameter of the yarns in the first

array is about 0.5mm and the yarn density of the first fabric structure is 18 yarns/in (7.1/cm) (summarized below). *Lee*, 26.

|             | Preferred Yarn Diameter | Preferred Yarn Density |
|-------------|-------------------------|------------------------|
| Structure 1 | 0.5 mm                  | 7.1 yarns/cm           |
| Structure 2 | 0.4 mm                  | 9.45 yarns/cm          |

Petitioner neither disputes that the seam loops are formed in the first structure nor disputes that the second structure is inserted into the first structure and has no seam loops. *See, e.g.*, Petition at 72-75. Petitioner also acknowledges that *Lee* specifically discloses the 0.4 mm yarn diameter and 9.45 yarns/cm density values with respect to the second structure. Petitioner's sole argument is based on a single sentence in *Lee* that states: "Also, certain applications may dictate that the yarn density and size in the second array 215 be equal to that in the first array 115." According to the Petitioner, although *Lee* provides preferred yarn density and yarn diameters for both the first and second structures, and although *Lee* specifically states that its 0.4 mm yarn diameter and 9.45 yarns/cm density is for use with its preferred first structure that has 0.5 mm yarn diameter and 7.1 yarns/cm density, and although *Lee* also explicitly indicates that the diameter of the yarns of the second structure is generally less than the diameter of the yarn in the first structure, Petitioner's POSITA would have still ignored *Lee*'s very clear and

explicit disclosure and instead latched on to that one sentence in *Lee* that indicates the first and second structures can “in certain applications” have similar diameters. Petition at 78.

This argument is obviously incorrect and contrary to the teachings of *Lee*. *Lee*, when read in context, explicitly emphasizes the importance of selecting appropriate yarn type, size, and spacing for having a “sufficiently robust” first structure and indicates that “[f]or this reason” the yarns of the first fabric structure are arranged with a larger diameter than the yarns of the second fabric structure:

*The yarns 110 of the first fabric structure 100 also provide the necessary seam tensile strength to the assembled press felt and must therefore be sufficiently robust so as to withstand the various mechanical and environmental forces to which they may be exposed during use. Thus, the yarn type, size and spacing are all important features of the first fabric structure and must be chosen with these considerations in mind.*

*For this reason, the yarns 110 of the first fabric structure 100 are arranged as a first planar yarn array, and are preferably of a different size to those in the generally planar yarn assembly that forms the second fabric structure 200 and are preferably larger;* monofilaments having a preferably circular cross-sectional shape and a diameter of from about 0.3-0.6mm are suitable; circular cross-section monofilaments having a diameter of 0.5mm are presently particularly preferred for this purpose.

*Lee*, 26-27 (emphasis added). EX 2001 ¶¶ 68-72.

The yarn diameter and spacing in this structure are therefore critical design parameters—not interchangeable details. Arbitrarily transferring values from the second structure to the first would contradict *Lee*'s explicit instruction that these parameters must be carefully selected to ensure seam strength and durability.

Accordingly, Petitioner's arguments with respect to *Lee* are contrary to the explicit teachings of *Lee* and should be dismissed. EX 2001 ¶¶ 68-72.

**2. Sudre, Lee, and Penven Offer No Suggestion of the Technical Relationship Between the Optimal Loop Density and the Optimal  $\frac{LD}{MDYD}$  Ratio Recited in Claim 1**

Petitioner has formed the combination of *Sudre*, *Lee*, and *Penven* by simply cherry-picking features from each reference to arrive at the limitations of claim 1. In doing so, Petitioner has ignored a crucial functional relationship between the use of a flat-woven base fabric and the achievable loop density and the advantages that are provided by maintaining the  $\frac{LD}{MDYD}$  ratio and the loop density in the specific ranges recited in claim 1. '566 Patent, 7:9-14. As noted above, the disclosure of the '566 Patent explains that in flat-woven structures, the MD threads of the base structure correspond to the warp threads of the loom. *Id.* 6:58-60. During weaving, adjacent weft threads cannot be located as close to one another as desired but there is no restriction on the warp threads (*i.e.*, the MD threads) and these threads can be arranged as densely as desired, thereby allowing a significantly higher MD thread density and, consequently, a higher loop density in the seam region. *Id.* 6:61-7:8. The disclosure further explicitly states that "loop densities of more than 64%, in particular more than 72% or 78%, ***as described in this application***, can either not be achieved at all in clothing (*sic*) woven in the round or can be achieved by means

of extreme weaving conditions such as a highly increased warp tension, which leads to highly accelerated wear of the loom.” *Id.* 7:9-14 (emphasis added). The disclosure further elaborates that “[b]y means of this embodiment of the invention, it is therefore possible to implement a clothing with a seam which—as a result of the high loop density—has a low permeability and nevertheless—as a result of the optimal LD/MDYD ratio, can be closed easily. On the other hand, other known methods for reducing the seam permeability, such as the insertion of a flow-impeding element (“scrim”) into the seam area, lead to more difficult closure of the seam.” *Id.* 7:15-22 (emphasis added).

Accordingly, the technical relationship between the optimal loop density and the optimal  $\frac{LD}{MDYD}$  ratio recited in claim 1 of the '566 Patent is central to assessment of the invention recited in this claim. Claim 1, as required by longstanding Federal Circuit precedent, must be analyzed “as a whole” in view of the combination and in view of the technical relationship between the recited optimal loop density and the optimal  $\frac{LD}{MDYD}$  ratio. *See, e.g., Ruiz v. A.B. Chance Co.*, 357 F.3d 1270 (Fed. Cir. 2004). “The Federal Circuit enforces § 103's direction to assess an invention “as a whole,” . . . by requiring a showing that an artisan of ordinary skill in the art at the time of invention, confronted by the same problems as the inventor and with no knowledge of the claimed invention, would select the various elements from the prior art and combine them in the claimed manner.” *Avocent Huntsville Corp. v.*

*ClearCube Technology, Inc.*, 443 F.Supp.2d 1284, 1339-1340 (2006) (citing *Ruiz* 357 F.3d at 1257).

By piecing together *Sudre*, *Lee*, and *Penven*, the Petitioner has treated the loop density and the  $\frac{LD}{MDYD}$  ratio as purely numerical figures without addressing the technical relationship and the resulting technical advantages achieved by the combination of these parameters, when optimized. In doing so, Petitioner has ignored longstanding Federal Circuit precedent that requires analysis of a claim “as a whole.” *Ruiz* 357 F.3d at 1257.

Specifically, Petitioner has selected various elements from *Sudre*, *Lee* and *Penven* and combined them in the claimed manner. However, the Petitioner has failed to show that *Sudre*, *Lee* and/or *Penven* taught, suggested, motivated, or even recognized the problem that the '566 Patent explicitly explains it solves by the combination of the recited features. See *In re Johnston*, 435 F.3d 1381, 1384–85 (Fed.Cir.2006) (“Precedent requires that to find a combination obvious there must be some teaching, suggestion, or motivation in the prior art to select the teachings of separate references and combine them to produce the claimed invention.”); *Pro-Mold and Tool Co. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1573 (Fed.Cir.1996) (“It is well-established that before a conclusion of obviousness may be made based on a combination of references, there must have been a reason, suggestion, or motivation to lead an inventor to combine those references.”).

For this reason alone, Petitioner's Ground 2 arguments should be dismissed.

### **3. Petitioner Has Not Articulated a Plausible Motivation for Combining Sudre, Lee, and Penven**

In combining Sudre, Lee, and Penven, Petitioner has relied the same conjecture and impermissible hindsight as relied upon in Ground 1. Accordingly, the same arguments as those presented above in §VII.A.1 applies.

Further, even assuming, *arguendo*, that a POSITA would have been motivated to proceed contrary to the explicit teachings of *Lee*, the POSITA would not have been motivated to look into *Penven* to modify the teachings of *Lee* because *Lee* and *Penven* disclose substantially different structures. Specifically, while *Penven*, as highlighted by the Petitioner, teaches a “*typical seam* in a papermaker's fabric [with] an internal void diameter of about 50 mils,” *Lee* discloses a complex multi-layered fabric structure that includes a second fabric structure with a “generally planar yarn assembly” that is inserted into a tube formed by the first fabric structure. *Lee*, 16 ¶2, EX 2001 ¶¶ 73-76. Further, although *Penven* refers to “an internal void diameter of about 50 mils,” *Penven* fails to connect this “50 mils” to a specific seam geometry, material, or manufacturing method. The “50 mils” value is provided as a generic approximation in a sentence that discusses “a typical seam,” and is not a measured or optimized parameter. *Penven* 3:64-68, EX 2001 ¶¶ 73-76.

Petitioner's motivation to combine arguments simply do not add up. At first, Petitioner's hindsight-based POSITA inspired by a single sentence in *Sudre* that stated "fabric meeting the particular requirements of its ***intended end use*** . . . can be produced from that base fabric" decides to look into *Lee* "to identify parameters that enable satisfaction of 'particular requirements' for the fabric." Petition at 79 (citing *Lee*, EX1003, ¶248) (emphasis added). Next, their POSITA looks into *Lee*, which explicitly indicates that its "invention generally concerns . . . ***multi-layer press felts which include a nonwoven yarn array bonded to an elastic carrier.***" *Lee*, ¶1(emphasis added). Based on the POSITA's choice to go from *Sudre* to *Lee*, one would think that the POSITA's "intended end use" (*Sudre*, 6:15) was a complex structure in which "multi-layer press felts which include a nonwoven yarn array bonded to an elastic carrier" (*Lee*, at 1). However, according to the Petitioner, *Lee*'s complex structure is **not** what their POSITA intended—their POSITA was looking to design a "typical seam," as disclosed in *Penven*, with "wrap thread diameter and wrap thread densities [] consistent with 'the industry standard fabrics described by Adanur.'" *Penven*, 3:64-68, Petition at 80 (quoting *Auburn Engineer*). This line of reasoning is inconsistent and clearly purely crafted to target the elements of claim 1. There would not be any motivation to combine measurements from *Lee*'s complex press felt structure with the more typical press felt of *Penven*. EX 2001 ¶¶ 74-76. For this reason alone, Ground 2 should be dismissed.

Petitioner's expectation of success arguments are even more far-fetched: the hindsight-based POSITA, who a) was inspired by that half-sentence in *Sudre* to look into *Lee*, and b) was so stubborn that he ignored the explicit teachings of the 57-page disclosure of *Lee* in favor of that one sentence that stated the first and second structures can have similar diameters, was apparently c) also in possession of a crystal ball because he somehow managed to look into the future and read *Adanur's* self-promotional article in the *Auburn Engineer* (which was published over two months after the earliest filing date of the '566 Patent). From his future reading of the *Auburn Engineer*, Petitioner's POSITA saw that Adanur referred to his book as an "industry standard" in papermaking and somehow came to conclusion that *Lee's* second fabric structure "warp thread diameters and densities were conventional." Petition at 80 (citing EX1022; see EX1016, 6:59-64; EX1024, 2:1-2; EX1003, ¶259). That inspiration gave Petitioner's POSITA "reasonable expectation of success" and led to the understanding that "Penven's loop size is consistent "the industry standard" fabrics described by Adanur, and indeed, Penven's loop size was conventional." *Id.*

Petitioner's motivation of success arguments in Ground 2 are effectively a series of sentences with no logical substance and foundation that are strung together to masquerade as logic. Petitioner has not articulated a single reason that explains why a POSITA would be motivated to form their proposed combination

of *Sudre, Lee, and Penven* and/or why the POSITA expects to be successful in forming this combination if he is operating *contrary* to the teachings of the references. Petitioner's combination of *Sudre, Lee, and Penven* and their attempted motivation to combine and expectation of success arguments directly contradict the Federal Circuit direction for assessment of inventions under §103 which discourages parties from picking and choosing among individual parts of references to cobble together a facsimile of the claimed invention. *Akzo N.V. v. United States International Trade Commission*, 808 F.2d 1471, 1481 (Fed.Cir.1986) (*quoting W.L. Gore & Associates, Inc. v. Garlock*, 721 F.2d 1540, 1552 (Fed.Cir.1983)). Ground 1 fails for at least this reason alone.

**B. The Petition Does Not Show That the Challenged Claims Are Unpatentable Under Grounds 2B, 2C, 2D, and 2E**

Ground 2B involves the combination of *Sudre, Lee, Penven*, and *Shipley*, Ground 2C involves the combination of *Sudre, Lee, Penven*, and *Straub*, Ground 2D involves the combination of *Sudre, Lee, Penven*, and *Lidar*, and Ground 2E involves the combination of *Sudre, Lee, Penven*, and *Yook*. Petition at 90-97.

Petitioner only relies on *Shipley, Straub*, and *Lidar* for their purported teaching of the additional elements recited in claims 2-15, which are all dependent claims that depend from claim 1. Petitioner provides no additional arguments regarding claim 1 and continues to rely on the same rationales as in Ground 2A. *Id.*

Accordingly, Grounds 2B-2E also fail for at least the reasons discussed above for Ground 2A.

**IX. Sudre, Rydin, the Secondary References, and/or Knowledge of a Person of Ordinary Skill in the Art do not Render Claims 1-15 Obvious**

Petitioner's third and final set of grounds involve the combination of *Sudre* and *Rydin*. Petitioner's Ground 3 arguments also fail because they rely on incorrect measurements of pictures that are not from the same fabric, do not define precise proportions, and are understood by Federal Circuit precedent to have little value. Petitioner also fails to articulate any reasons for why a POSITA would have been motivated to combine and modify the teachings of *Sudre* using *Rydin* to arrive at the combination of the technical features recited in claims 1-15.

**A. Ground 3A: *Sudre* and *Rydin* Fail to Teach or Suggest a Loop Density of Between 64% and 90% and an LD/MDYD Ratio of Between 2.7 and 3.6**

**1. Petitioner's Arguments Are Solely Premised on Conjecture And Impermissible Hindsight**

In combining *Sudre* and *Rydin*, Petitioner has not even attempted to form a proper argument explaining why a POSITA would have been motivated to look into *Rydin* to modify *Sudre*. Petitioner has simply stated that a POSITA would have been motivated to modify *Sudre* based on *Rydin* "[f]or many of the same reasons discussed above in Grounds 1A-1E." Petition at 100. At this point in the Petition, Petitioner's argument is effectively that a POSITA, armed with *Sudre*,

could have looked into any random reference: magazines, books, granted patents, etc., and found the elements of claim 1. Accordingly, because Petitioner has relied on the same conjecture and impermissible hindsight as those in Ground 1, the same arguments as those presented above with respect to Ground 1 apply here.

In reality, *Sudre* and *Rydin* address fundamentally different technical problems: while *Sudre* describes a method for forming a seam in a flat-woven fabric using interdigitated loops and a pintle, *Rydin* discloses a new design concept involving the integration of a specialty batt-like yarn into the base fabric to improve felt performance. *Rydin* discusses a “new generation of press felts” and focuses on material innovation—not geometric optimization.

A POSITA seeking to improve seam performance based on *Sudre* would not turn to *Rydin* for dimensional guidance. EX 2001 ¶¶ 77. Instead, the POSITA would understand that *Rydin* is directed to incorporating a specialty yarn into the felt structure. *Rydin*, 2, right column. *Rydin* neither offers any teaching or suggestion that seam loop geometry, thread diameter, or loop density are relevant to the disclosed concept, nor mentions these parameters anywhere in its article. EX 2001 ¶ 77.

Accordingly, a POSITA would have no reason or motivation to extract geometric values from *Rydin*, especially not by combining measurements from two

structurally distinct images. EX 2001 ¶¶ 83-85. Petitioner's combination of *Sudre* and Rydin is purely based on impermissible hindsight and should be dismissed.

## **2. Petitioner Makes Incorrect Assumptions about Figs. 2 and 3**

Similar to Ground 1A, Petitioner relies on measurements taken by its expert from pictures included in article from a Swedish paper journal, *Svensk papperstidning*, to allege that the combination of *Sudre* and the article paper (*Rydin*) render claim 1 obvious. In his declaration, Dr. Pastore explains that “the main difference between the Adanur-based ground and the Rydin-based ground is that Rydin's photographs are directed to a different PMC product – a PMC design that was known as early as 1992. In its Figures 2 and 3, Rydin shows a PMC that was available more than 25 years before the '566 patent was filed.” EX 1003, ¶ 366. Dr. Pastore explains once again that he measured the diameter of the MD (warp) threads, thread density, and loop size by measuring the pixels (he presumably scanned the pages of the Swedish journal, as common sense indicates that it was unlikely that the paper was published digitally in 1992). EX 1003, ¶¶ 367-369. After obtaining the MD thread diameter and the thread density in pixels, he determined a percentage loop density and proceeded to determine a seam loop diameter in pixels. EX 1003, ¶¶ 370-371. Realizing that “Rydin's photographs lack a measurement scale,” Dr. Pastore decided that measurement scales “are not

needed to determine the loop density and the LD/MDYD ratio” and proceeded to calculate these values based on his pixel-based measurements. EX 1003, ¶ 375.

As an initial matter, Petitioner's arguments fail because Petitioner incorrectly assumes that Figs. 2 and 3 of Rydin are from the same fabric. However, it is readily apparent that Figs. 2 and 3 depict different objects: Fig. 2 shows a sample of a pure woven fabric, while Figure 3 shows a finished felt with one or more batt layers needled onto it. EX 2001 ¶¶ 83-86. A POSITA would immediately recognize that these are not the same material. EX 2001 ¶¶ 83-86

Moreover, as explained in detail in §VII.A.3, for an article and accompanying photographs to anticipate a claim, they should provide sufficient disclosure and there should be “written description in the specification of quantitative values.” *In re Wright*, 569 F.2d at 1127. Here, Rydin provides no dimensional information or scale and does not indicate that its pictures are provided for dimensional purposes. Further, in evaluating *Rydin*, Petitioner has relied on limited sample points obtained from a grainy photograph in *Adanur* that lacks scale validation, uniformity, or any statistical basis. Petitioners has not considered factors such as scale, distortion, angle, lighting and has failed to show that its measurements of *Rydin* are reliable for purposes of clear and convincing evidence or even a *prima facie* case. Here, Rydin's photographs do not even provide a known dimension or scale marker and cannot reliably translate picture

measurement into real world measurements. Accordingly, Petitioner's arguments with respect to Rydin "are of little value" and should be dismissed. *In re Wright*, 569 F.2d 1124, 1127 (CCPA 1977). Ground 3A fails for this reason alone.

**B. The Petition Does Not Show That the Challenged Claims Are Unpatentable Under Grounds 3B, 3C, 3D, and 3E**

Ground 3B involves the combination of *Sudre*, *Adanur*, and *Shipley*, Ground 3C involves the combination of *Sudre*, *Adanur*, and *Straub*, Ground 3D involves the combination of *Sudre*, *Adanur*, and *Lidar*, and Ground 3E involves the combination of *Sudre*, *Adanur*, and *Yook*. Petition at 103.

Petitioner only relies on *Shipley*, *Straub*, and *Lidar* for their purported teaching of the additional elements recited in claims 2-15, which are all dependent claims that depend from claim 1. Petitioner provides no additional arguments regarding claim 1 and continues to rely on the same rationales as in Ground 3A. *Id.* Accordingly, Grounds 3B-3E also fail for at least the reasons discussed above for Ground 1A.

**X. Additional Comments**

With respect to any arguments in the Petition that are not specifically addressed herein, Patent Owner does not concede the legitimacy of such arguments in the Petition and any underlying contentions in the Petition. If *inter partes* review is instituted, Patent Owner expressly reserves the right to rebut any such arguments

and any such contentions at a later point, including in a Patent Owner Response.

Patent Owner is not limited to the arguments presented here in this Preliminary Response and expressly reserves the right to raise further arguments, including claim construction arguments, not presented in this Preliminary Response.

## **XI. Conclusion**

For the foregoing reasons, Patent Owner respectfully requests that the Board decline to institute *inter partes* review of the '566 Patent.

Respectfully submitted,

Dated: October 1, 2025

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**CERTIFICATE OF COMPLIANCE**

Pursuant to 37 C.F.R. § 42.24(d), I certify that this Preliminary Response complies with the type-volume limits of 37 C.F.R. § 42.24(b)(1) because it contains 13,249 words, excluding the parts that are exempted by 37 C.F.R. § 42.24(a), according to the word processing system used in preparation of this Preliminary Response.

Dated: October 1, 2025

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**CERTIFICATE OF SERVICE**

Pursuant to 37 CFR § 42.6(e)(4), the undersigned certifies that on October 1, 2025, a complete copy of the foregoing Patent Owner's Preliminary Response was served on Lead and Back-up Counsel for Petitioner at the service address provided in Petitioner's Mandatory Notices:

Email: IPR59054-0006IP1@fr.com

Dated: October 1, 2025

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