

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

STAHL'S INC.,
Petitioner,

v.

JODI A. SCHWENDIMANN, f/k/a JODI A. DALVEY, and
NUCOAT, INC.,
Patent Owner.

IPR2020-00633
Patent RE41,623 E

Before JEFFREY W. ABRAHAM, MICHELLE N. ANKENBRAND, and
AVELYN M. ROSS, *Administrative Patent Judges*.

ROSS, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining Some Claims Unpatentable
35 U.S.C. § 318

I. INTRODUCTION

Stahls' Inc. ("Petitioner")¹ filed a Petition (Paper 1, "Pet.") requesting *inter partes* review of claims 6–14 and 16 of U.S. Patent No. RE41,623 E (Ex. 1002, "the '623 patent"). Pet. 1. Jodi A. Schwendimann and NuCoat, Inc. (collectively "Patent Owner") filed a Preliminary Response (Paper 9, "Prelim. Resp.").

Upon consideration of the Petition, Preliminary Response, and the parties' evidence, we determined that Petitioner had demonstrated a reasonable likelihood that it would prevail with respect to at least one claim of the '623 patent. Paper 11 ("Decision on Institution" or "DI"). Thus, pursuant to the Supreme Court's decision in *SAS Institute Inc. v. Iancu*, 138 S. Ct. 1348, 1355 (2018), and the USPTO Guidance,² we instituted review of all challenged claims on all asserted grounds. *Id.*

Following institution of trial, Patent Owner filed a Patent Owner Response (Paper 15, "PO Resp."), Petitioner filed a Reply (Paper 26, "Pet. Reply"), and Patent Owner filed a Sur-reply (Paper 35, "Sur-reply"). In support of their respective positions, Petitioner relies on the testimony of Dr. Christopher E. Scott (Ex. 1001; Ex. 1039), and Patent Owner relies on the testimony of Dr. Scott Williams (Ex. 2001) and the Declaration of Dr. Christopher Ellison (Ex. 2011). The parties also rely on the Declaration of Jodi A. Schwendimann executed on January 31, 2013 (Ex. 2003, "2013

¹ Petitioner identifies Stahls' Inc. and Siser North America, Inc. as the real parties-in-interest. Pet. 2.

² In accordance with USPTO Guidance, "if the PTAB institutes a trial, the PTAB will institute on all challenges raised in the petition." *See* USPTO, Guidance on the Impact of SAS on AIA Trial Proceedings (April 26, 2018) (available at <https://www.uspto.gov/patents-application-process/patent-trial-and-appeal-board/trials/guidance-impact-sas-aia-trial>) ("USPTO Guidance").

Schwendimann Declaration”), the Declaration of Jodi A. Schwendimann executed on January 11, 2021 (Ex. 2014, “2021 Schwendimann Declaration”), the Declaration of Nabil Nasser, executed on January 29, 2021 (Ex. 2020, “2021 Nasser Declaration”).

An oral hearing was held on July 14, 2021, and a transcript of the hearing is included in the record (Paper 39, “Tr.”).

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons discussed below, we determine that Petitioner has shown by a preponderance of the evidence that claims 6, 7, 9–14, and 16 of the ’623 patent are unpatentable.

A. Related Proceedings

Petitioner identifies the pending lawsuit between the parties, styled *Jodi A. Schwendimann v. Stahls’ Inc.*, Case No. 2:19-cv-10525-LVP-RSW (E.D. Mich.), as a related proceeding in which Patent Owner asserts the ’623 patent. Pet. 4; *see also* Paper 10, 2 (Patent Owner’s Mandatory Notices).

The ’623 patent is asserted in the following pending litigations:

Jodi A. Schwendimann v. Neenah, Inc., Case No. 1:19-cv-00361-LPS (D. Del.)(the “the Delaware Lawsuit”); and

Jodi A. Schwendimann v. Siser North America, Inc., Case No. 1:19-cv-00362-LPS (D. Del.).

Pet. 4; Paper 10, 2. The ’623 patent was also asserted in *Jodi A. Schwendimann v. Arkwright Advanced Coating, Inc.*, Case No. 0:11-cv-00820-JRT-HB (D. Minn.) (“Arkwright Lawsuit”). Pet. 4. The ’623 patent is also the subject of additional, separate IPRs: *Neenah, Inc. v. Jodi A. Schwendimann*, IPR2020-00628 and *Stahls’ Inc. v. Jodi A. Schwendimann*, IPR2020-00641. Paper 10, 2. We instituted *inter partes* review in both the -

00628 and -00641 cases. *See* IPR2020-00628, Paper 10; IPR2020-00641, Paper 11. Concurrently with the entry of this Final Written Decision, we also separately enter judgment in the -00628 and -00641 cases.

Petitioner states that the '623 patent is a reissued patent of U.S. Patent No. 6,844,311 which issued from U.S. Patent Application No. 09/541,845 ("the '845 application") which is a continuation-in-part of U.S. Patent Application No. 09/391,910 ("the '910 application"). Numerous patents claim priority to the '845 and '910 applications including U.S. Patent No. 7,749,581 ("the '581 patent"), U.S. Patent No. 7,754,042 ("the '042 patent"), U.S. Patent No. 7,771,554 ("the '554 patent"), and U.S. Patent No. 7,766,475 ("the '475 patent") (together with the '623 patent, collectively "the Schwendimann patents"). Pet. 3.

Petitioner also filed petitions for *inter partes* review against claims of the '581 patent, the '042 patent, the '475 patent, and the '554 patent. We instituted *inter partes* review on Petitioner's challenges against the '581 patent in IPR2020-00634 (Paper 13), IPR2020-00644 (Paper 10), and against the '042 patent in IPR2020-00629 (Paper 10) and IPR2020-00635 (Paper 10). We rendered judgment in IPR2020-00629, -00634, -00635, and -00644 on September 10, 2021. IPR2020-00634, Paper 39; IPR2020-00644, Paper 35; IPR2020-00629, Paper 39; IPR2020-00635, Paper 46. We declined, however, to institute trial on Petitioner's challenges against certain claims of the '581 patent in IPR2020-00645 (Paper 10) or against the '544 patent in IPR2020-00636 (Paper 10) or IPR2020-01121 (Paper 8).

The Schwendimann patents were also involved in Patent Interference Nos. 105,961, 105,964, and 105,966 (collectively "Interference Proceedings"). Ex. 2004, 1; Ex. 2003, 2.

B. The '623 Patent

The '623 patent, titled “Method of Image Transfer on a Colored Base,” issued on September 7, 2010. Ex. 1002, codes (45), (54). The '623 patent is directed to “a method for transferring an image onto a colored base and to an article comprising a dark base and an image with a light background on the base.” *Id.* at 1:13–15.

The '623 patent explains that conventional image transfer processes use two-steps: applying a white or light background polymeric material to a colored base with heat and then using another sheet to impart an image to the substantially white polymeric material. *Id.* at 3:35–48. According to the '623 patent, the conventional two-step process requires careful alignment of an image with the white background, is “exceedingly time-consuming,” and produced significant waste of base and image transfer materials. *Id.* at 3:49–56.

An exemplary image transfer process of the '623 patent is depicted below in Figure 1.

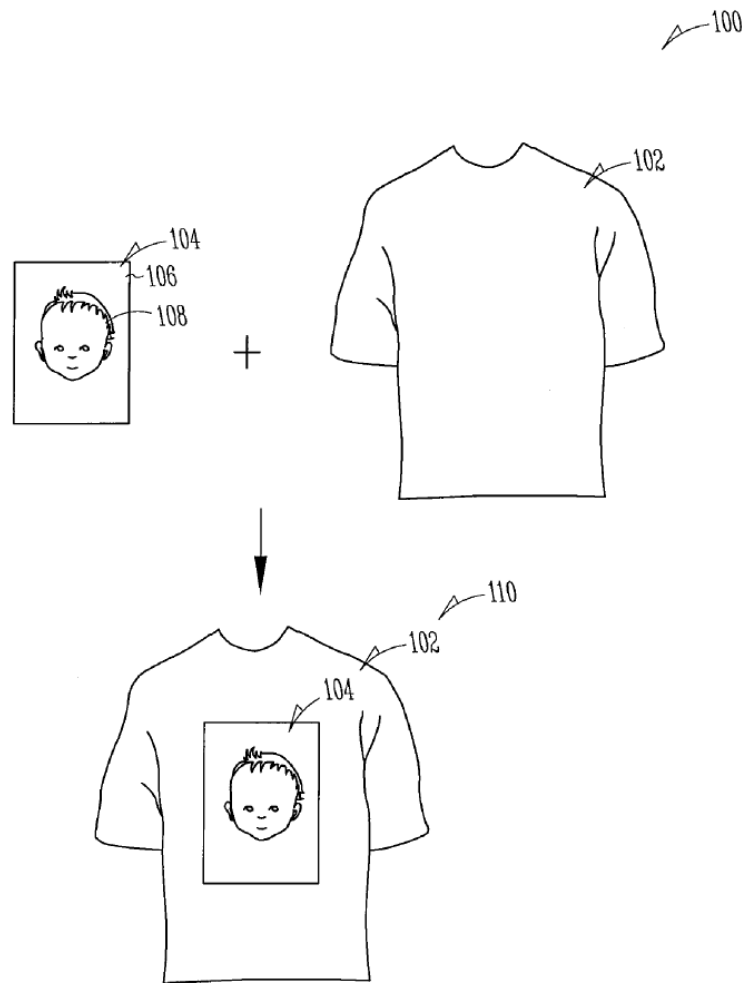


Fig. 1

Figure 1 “illustrates a schematic view of one process of image transfer onto a colored product.” *Id.* at 2:29–31. Figure 1 depicts colored base material 102 (e.g., a colored textile), image 104 including substantially white background 106, and indicia 108 disposed on substantially white background 106. *Id.* at 3:7–18. The ’623 patent states that image 104 is applied to colored base material 102 with heat to make completed article 110 in a single step. *Id.*

An embodiment of an image transfer device is depicted below in Figure 5.

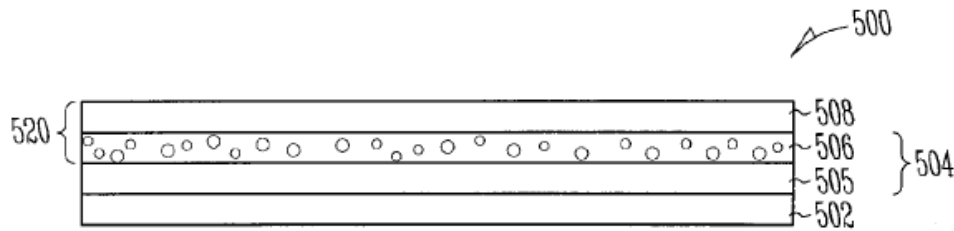


Fig. 5

Figure 5 illustrates “a cross-sectional view of one other embodiment of the image transfer device of the present invention.” *Id.* at 2:41–42. Figure 5 shows “an image transfer sheet 500 that is comprised of a substrate layer 502 [and] a release layer 504, comprising a silicone coating 505 and a white layer 506.” *Id.* at 8:48–53. Figure 5 also depicts white layer 506 and receiving layer 508 as part of peel layer 520. *See id.* at 8:57–63, 9:7–9.

The ’623 patent describes the white layer as imparting “a white background on a dark substrate.” *Id.* at 3:31–34. According to one embodiment, “the white layer 506 of the image transfer sheet 500 is impregnated with titanium oxide or other white or luminescent pigment.”³ *Id.* at 8:57–60. In another embodiment, “the white layer 506 and a receiving layer 508, contacting the white layer 506 are impregnated with titanium oxide or other white or luminescent pigment.” *Id.* at 8:60–63. According to the ’623 patent,

[f]or some embodiments, a white layer 506, 606, *such as is shown in FIGS. 5-6*, includes ethylene/methacrylic acid (E/MAA), with an acid content of 0-30%, and a melt index from 10 to 3500 with a melt index range of 20 to 2300 for some embodiments. A low density polyethylene with a melt index

³ “Titanium oxide,” “titanium dioxide,” and “TiO₂” are synonymous, and used interchangeably in the prior art, the parties’ papers, and in this Decision.

higher than 200 is also suitable for use. Other embodiments of the white layer include ethylene vinyl acetate copolymer resin, EVA, with vinyl acetate percentages up to 50%/EVA are modifiable with an additive such as DuPont Elvax, manufactured by DuPont de Nemours of Wilmington, Del. These resins have a Vicat softening point of about 40 degrees to 220 degrees C., with a range of 40 degrees to 149 degrees C. usable for some embodiments.

Id. at 6:8–20.

Referring once again to the embodiment of Figure 5, the '623 patent describes an image transfer process. Specifically, the '623 patent discloses that “an image is imparted to the polymer component of the peel layer 520 utilizing a top coat image-imparting material such as ink or toner.” *Id.* at 9:7–9. The '623 patent explains that “[t]he image transfer sheet 500 is applied to the colored base material so that the polymeric component of the peel layer 520 contacts the colored base” and a source of heat is applied to the image transfer sheet 500. *Id.* at 9:18–26. Thus, “[t]he peel layer 520 transfers the image” and “[t]he application of heat to the transfer sheet 500 results in ink or other image-imparting media within the polymeric component of the peel layer being changed in form to particles encapsulated by the polymeric substrate.” *Id.* at 9:28–32. As a result, “[t]he encapsulated ink particles or encapsulated toner particles and encapsulated titanium oxide particles are then transferred to the colored base in a mirror image to the ink image or toner image on the polymeric component of the peel layer 520.”

Id. at 9:36–40. The '623 patent further explains that

[b]ecause the polymeric component of the peel layer 520 generally has a high melting point, the application of heat, such as from an iron, does not result in melting of this layer or in a significant change in viscosity of the overall peel layer 520. The change in viscosity is confined to the polymeric component that

actually contacts the ink or toner or is immediately adjacent to the ink or toner. As a consequence, a mixture of the polymeric component, titanium oxide or other white or luminescent pigment, and ink or toner is transferred to the colored base as an encapsulate whereby the polymeric component encapsulates the ink or toner or titanium oxide or other white pigment. It is believed that the image transfer sheet, with the white titanium oxide or other white or luminescent pigment background is uniquely capable of both cold peel and hot peel with a very good performance for both types of peels.

Id. at 9:41–55.

C. Illustrative Claim

Petitioner challenges claims 6–14, and 16 of the '623 patent. Of the challenged claims, only claim 6 is an independent claim. Claim 6 is illustrative and is reproduced below.

6. An image transfer sheet, comprising:
 - a colored[,] substrate comprising woven, fabric based material, or paper;
 - a release layer overlaying the substrate, wherein the release layer is impregnated with titanium oxide or other white pigment or luminescent pigment; and
 - a polymer layer.

Ex. 1002, 12:20–26.

D. Prior Art and Asserted Grounds of Unpatentability

Petitioner contends that claims 6–14 and 16 are unpatentable based on the following grounds:

Claims Challenged	35 U.S.C. § ⁴	Reference(s)/Basis
6, 7, 9–14, 16	103	Williams ⁵
6–9, 13, 14, 16	103	Asajima ⁶
6, 10–12, 16	103	DeVries ⁷
6, 7, 9–12, 16	103	Keino ⁸
6, 7, 9–12, 14, 16	103	Oez, ⁹ Takao ¹⁰

Pet. 5. We instituted trial on all asserted grounds. DI 2, 52–53; *SAS*, 138 S. Ct. at 1355.

II. ANALYSIS

A. Legal Standards

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden of persuasion never

⁴ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. § 103, effective March 16, 2013. Because the application from which the ’623 patent issued was filed before this date, the pre-AIA version of § 103 applies.

⁵ Williams et al., US 6,875,487 B1, issued April 5, 2005 (Ex. 1024, “Williams”).

⁶ Asajima et al., US 5,418,207, issued May 23, 1995 (Ex. 1018, “Asajima”).

⁷ DeVries et al., US 4,058,644, issued November 15, 1977 (Ex. 1016, “DeVries”).

⁸ Keino et al., US 4,515,849, issued May 7, 1985 (Ex. 1017, “Keino”).

⁹ Oez, US 5,655,476, issued Sep. 9, 1997 (Ex. 1020, “Oez”).

¹⁰ Takao et al., US 5,753,589, issued May 19, 1998 (Ex. 1019, “Takao”).

shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in *inter partes* review).

A claim is unpatentable under 35 U.S.C. § 103(a) if “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) objective evidence of nonobviousness.¹¹ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

To show obviousness, it is not enough to merely show that the prior art includes separate references covering each separate limitation in a challenged claim. *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011). “This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.” *KSR*, 550 U.S. at 418–419.

On the other hand, an obviousness analysis “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *Id.* at 418; *accord In re Translogic*

¹¹ The parties have not asserted or otherwise directed our attention to any objective evidence of nonobviousness.

Tech., Inc., 504 F.3d 1249, 1259 (Fed. Cir. 2007). However, Petitioner cannot satisfy its burden of proving obviousness by employing “mere conclusory statements.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016). Instead, Petitioner must articulate a reason why a person of ordinary skill in the art would have combined or modified the prior art references. *In re NuVasive, Inc.*, 842 F.3d 1376, 1382 (Fed. Cir. 2016); *see also Metalcraft of Mayville, Inc. v. The Toro Co.*, 848 F.3d 1358, 1366 (Fed. Cir. 2017) (“In determining whether there would have been a motivation to combine prior art references to arrive at the claimed invention, it is insufficient to simply conclude the combination would have been obvious without identifying any reason why a person of skill in the art would have made the combination.”); *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) (“[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.”) (citing *InTouch Techs., Inc. v. VGO Commc’ns, Inc.*, 751 F.3d 1327, 1352 (Fed. Cir. 2014)).

B. Level of Ordinary Skill in the Art

In the Decision on Institution, we determined that a person of ordinary skill in the art at the time of the invention of the ’581 patent

would have at least a Bachelor’s degree in Chemistry, Chemical Engineering, Imaging Technology or Material Science with at least one year of experience in coating technologies and imaging technologies, or at least five years of work experience in the field of coating technologies and imaging technologies.

DI 11 (adopting Patent Owner’s proposed definition).

For purposes of this Final Written Decision, we maintain the determination from the Decision on Institution because neither party disputes that determination and because that level of skill is consistent with the record. PO Resp. 13; Pet. Reply 3.

C. Claim Construction

In an *inter partes* review we construe claims “using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b), including construing the claim in accordance with the ordinary and customary meaning of such 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); *see Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). Furthermore, we expressly construe the claims only to the extent necessary to resolve the parties’ dispute. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Ltd.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“[W]e need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy.’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

*1. “white layer”*¹²

In the Decision on Institution, we construed the term “white layer” to mean “a layer comprising a concentration or configuration of pigment providing a white background for received indicia and which further comprises a polymer that melts and mixes with another layer or layers

¹² Although the term “white layer” is not expressly recited in claim 6 of the ’623 patent, both parties agree that all claims of the ’623 patent require a white layer that melts and mixes. *See, e.g.*, Pet. 12–13; PO Resp. 13–15, 28, 37, 42, 49.

during application.” DI 13. Our construction was based on the parties’ agreement that the claims of the ’623 patent require a white layer that melts and mixes with another layer and the claim construction the district court in the Arkwright Lawsuit adopted. Ex. 1031, 17 (Arkwright Markman Order”). The district court in the Delaware Litigation also adopted a similar construction of “white layer.” Ex. 1045, 6 (Delaware Markman Order). In the Decision on Institution, we rejected Patent Owner’s attempt to broaden the interpretation adopted in the Arkwright Lawsuit to include “a polymer that softens or melts and mixes to some degree with another layer.” *Id.* (Patent Owner’s modifications indicated with underlining); Prelim. Resp. 14. Patent Owner reasserts that “[t]hese additions properly and importantly clarify ‘melt’ and ‘mix,’ consistent with the district court’s holding, the ’623 Patent’s disclosure, and Schwendimann’s statements in the Interference.” PO Resp. 14.

But, Patent Owner states that “the parties’ disputes with respect to the construction of the ‘white layer’ make no difference to the Board’s resolution of this matter” (PO Resp. 14–16) and Petitioner asks that we “adopt the same constructions” as in the Delaware Litigation (Pet. Reply 1–2 (citing Ex. 1045, 9)). Accordingly, we maintain our construction of the term “white layer.”

2. remaining terms

Petitioner contends that we should construe the term “release layer” and Patent Owner asks that we construe “image transfer sheet.” Pet. 13; PO Resp. 15–17. Because resolution of the issues before us does not require construction of either “release layer” or “image transfer sheet,” we need not

provide any express constructions for those terms. *See Nidec*, 868 F.3d at 1017.

D. Challenges based on Williams (claims 6, 7, 9–14, and 16)

Petitioner contends the subject matter of claims 6, 7, 9–14, and 16 would have been obvious over Williams. Pet. 29. Petitioner directs us to portions of Williams that purportedly disclose each of the limitations in the challenged claims. *See generally id.* Petitioner also relies on the testimony of Dr. Scott to support its arguments. *Id.*

1. Williams (Ex. 1024)

Williams is directed to “a heat-setting label sheet that is a polymeric transfer sheet that can be marked and transferred by the consumer.” Ex. 1024, code (57). Williams teaches that its transfer sheet may contain a support, a pressure-sensitive adhesive layer, an adhesion layer, one or more opaque layers, and one or more image receiving layers. *Id.* at 3:11–19. Williams explains that “a white pigment may be used to exhibit opacity capabilities,” and indicates that the opaque layers “render the image visible against a dark receptor, and otherwise improves the appearance and readability of an image.” *Id.* at 20:2–6, 20:30–32; *see also id.* at 7:14–15. (indicating that opaque backgrounds are used “to aid in ink visibility on various colored receptors”).

Williams also teaches a process for transferring an image that comprises imaging a heat-setting label sheet, peeling the adhesive layer from the base sheet, placing the peeled portion of the label sheet onto the receptor element, and heating the layers. *Id.* at 2:36–46.

2. *Analysis*

Petitioner argues that Williams would have rendered obvious the subject matter of claims 6, 7, 9–14, and 16 of the '623 patent. Pet. 29. With reference to claim 6, Petitioner contends that Williams's "heat-setting label sheet which can be imaged, and having images which are capable of being directly transferred to, for instance, a receiver such as a textile, such as a shirt or the like," is the "image transfer sheet" of claim 6. *Id.* (citing Ex. 1024, 1:12–15, 2:3–4).¹³ Petitioner argues that Williams's heat-setting label sheet comprises five layers including support 21 (i.e., an image transfer substrate), opaque layer 24, adhesion layer 23, and pressure sensitive layer 22—which together comprise the "release layer,"—and polymer layer 25 (i.e., an image imparting layer that comprises an indicia). *See id.* at 29–35 (citing Ex. 1024, 1:12–15, 2:3–6, 3:61–65, 6:33–34, 7:13–15, 12:45–48, 20:2–32, 20:18–41, 21:65–66, 22:7–9, 24:41–56; Ex. 1001 ¶¶ 118–120). Petitioner contends that Williams's "release layer," i.e., the combination of Williams's layers 22, 23, and 24, includes a "white layer" that mixes and melts with adjacent layers because they "are of the same type and therefore would have the same or similar thermal properties, such as melt and glass transition temperature ranges, as the materials disclosed in the '623 Patent for corresponding layers." *Id.* at 33 (citing Ex. 1001 ¶¶ 127–128 (comparing polymers of Williams and the '623 patent)). According to Petitioner, when heat and pressure are "applied under similar conditions, whatever 'melting and mixing' that may occur in the '623 Patent as argued by the Patent

¹³ Petitioner also supports its Petition by citing to the provisional application, U.S. Application No. 60/148,562 (Ex. 1025), leading to issued Williams.

Owner in the Interference will also occur in Williams.” *Id.* (citing Ex. 1001 ¶ 127).

Petitioner argues that Williams’s heat-setting label sheet is useful for transferring images to textiles, such as a T-shirt, and that the textile may be a “dark receptor.” Pet. 30 (citing Ex. 1024, 1:12–15, 20:2–32). Petitioner also explains that Williams describes use of a “release base paper,” and though the paper is not described as colored, “paper of all colors was clearly commonly known.” *Id.* at 31 (citing Ex. 1024, 12:45–48). Therefore, “[i]t would have been an obvious design choice for a [person of ordinary skill in the art] to use a ‘colored’ release base paper in Williams.” *Id.* (citing Ex. 1001 ¶ 118).

Petitioner also argues that Williams discloses the limitations of 7, 9–14, and 16 of the ’623 patent. Specifically, Petitioner contends that Williams discloses a transfer sheet where the polymer layer, comprised of a polyamide (claims 9, 13, 14) and titanium dioxide or other white pigment (claims 7). *Id.* at 34–35 (citing Ex. 1024, 20:30–32, 22:7–9, 22:30–33; Ex. 1025, 40:17–19, 43:5–8, 44:28–31; Ex. 1001 ¶¶ 131–133, 134–136), 36–37 (citing Ex. 1024, 22:7–9, 22:30–33; Ex. 1025, 43:5–8, 44:28–31; Ex. 1001 ¶¶ 146–151). Petitioner further asserts that Williams’s transfer sheet may be applied to colored fabric (claim 10), for example, a T-shirt (claims 11 and 12). *Id.* at 35–36 (citing Ex. 1024, 1:12–15, 20:2–32; Ex. 1025, 1:8–12, 39–19–21; Ex. 1001 ¶¶ 137–145). And lastly, Petitioner alleges that Williams includes a release layer having a coating portion and a white layer portion that includes titanium dioxide (claim 16). *Id.* at 37–38 (citing Pet. Section 8.1.3; Ex. 1001 ¶¶ 152–154).

Patent Owner, does not challenge any of Petitioner’s allegations regarding the teachings of Williams. *See generally* PO Resp. 19–24; Pet. Reply 4. Rather, Patent Owner argues only that Williams is not prior art to the ’623 patent. *Id.* We have reviewed the evidence and argument of record and determine that Petitioner establishes, by a preponderance of the evidence, that Williams discloses or suggests each limitation of claims 6, 7, 9–14, and 16 of the ’623 patent. We address Patent Owner’s argument that Williams is not prior art below.

Williams claims priority to U.S. Provisional Application No. 60/148,562 (Ex. 1025, the “Williams Provisional Application”), filed on August 13, 1999. Pet. 15. Petitioner contends that the Williams Provisional Application supports at least one of the claims in Williams and, therefore, is prior art to the ’623 patent as of its filing date on August 13, 1999. *Id.* Patent Owner does not dispute that Williams is entitled to a priority date of August 13, 1999. PO Resp. 16 (stating Williams has a priority date of August 13, 1999). We have reviewed Petitioner’s showing and determine that the Williams Provisional Application discloses the pertinent limitations and supports at least claims 1, 51, 53, and 63 of Williams. Ex. 1001 ¶¶ 58–62. Therefore, Petitioner has shown that Williams is prior art as of August 13, 1999.

In its Response, Patent Owner states that “[c]ontemporary evidence demonstrates unequivocally that the inventors of the ’623 Patent invented and created *image transfer sheets* meeting all of the limitations of the Challenged Claims no later than December 16, 1997.” PO Resp. 20 (emphasis added). This evidence consists of two “Formula Books” (Ex. 2015 and 2016) described as “lab notebooks kept by the inventors to

document their experimentation and inventions,” the 2013 Schwendimann Declaration (Ex. 2003), describing and explaining the information contained in the Formula Books, and the 2021 Nasser Declaration (Ex. 2020), explaining that the samples in the Formula Books included on or more polymers. PO Resp. 20–24.

Patent Owner argues that the Formula Books and 2013 Schwendimann Declaration show the inventors began working on a dark T-shirt transfer product around June 1996, and by July 1999, had made at least 22 samples and applied them to dark T-shirts. PO Resp. 21 (citing Ex. 2003 ¶¶ 7–21). Patent Owner contends these samples included each of the structures (i.e., the image transfer sheets) the challenged claims require. PO Resp. 21–24.

Petitioner argues that Patent Owner and Ms. Schwendimann’s “attempt to swear behind Williams fails because she has not corroborated her testimony, as she must as a matter of law.” Pet. Reply 4. Citing the Federal Circuit’s decision in *Apator Mitros ApS v. Kamstrup A/S*, 887 F.3d 1293, 1295 (Fed. Cir. 2018), Petitioner contends that “[i]t is well-established that when a party seeks to prove conception through an inventor’s testimony the party must proffer evidence, “in addition to [the inventor’s] own statements and documents,” corroborating the inventor’s testimony.” *Id.* (also citing *Mahurkar v. C.R. Bard, Inc.*, 79 F.3d 1572, 1577 (Fed. Cir. 1996); *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1171–72 (Fed. Cir. 2006); *Cooper v. GoldFarb*, 154 F.3d 1321, 1330 (Fed. Cir. 1998)).

Petitioner first argues that the Formula Books are unwitnessed, making them legally insufficient to corroborate Ms. Schwendimann’s

testimony that she conceived of the physical image transfer article recited in claim 6 because “an unwitnessed laboratory notebook, alone, cannot corroborate an inventor’s testimony of conception.” *Id.* at 6 (quoting *Apator*, 887 F.3d at 1297, citing *Brown v. Barbacid*, 276 F.3d 1327, 1335 (Fed. Cir. 2002); *Procter & Gamble Co. v. Teva Pharms. USA, Inc.*, 566 F.3d 989, 998–99 (Fed. Cir. 2009)).

Petitioner further argues that the laboratory notebooks fail to factually support Ms. Schwendimann’s testimony. Specifically, Petitioner asserts that the laboratory notebooks “do not indicate that the white layer in the described samples ‘melted’ when transferred to a fabric via heat” (*id.* at 7), “make no mention of a white layer that ‘mixed’ with another layer” (*id.*), and do not “suggest[] the white pigment described as being present in the samples result[s] in a ‘white background’” (*id.* at 8). In fact, Petitioner states that the “evidence demonstrates that the samples did not generate a white ‘background’ for the image after being transferred” but instead, “the white layer *covered* the image, which was *barely* visible *through* the white layer.” *Id.* at 9 (citing Ex. 1048 ¶¶ 8–9).

Furthermore, Petitioner contends that the laboratory notebooks fail to corroborate the 2021 Nasser Declaration that the polymer layer of claim 6 was conceived and reduced to practice before Williams’s priority date. *Id.* (citing Ex. 2020 ¶ 3). Petitioner states that the laboratory notebooks “do not reflect *any* formulations for the inkjet layer” and “[t]herefore, Patent Owner has failed to offer corroborated evidence that *any* of the samples, let alone the December 16, 1997 sample (Ex. 2015, p. 129) included the recited ‘polymer layer.’” *Id.* at 9–10.

Lastly, Petitioner asserts that Patent Owner has not established that “the examples described in the laboratory notebooks ‘worked for their intended purpose.’” Pet. Reply 10. According to Petitioner, Patent Owner does not direct our attention to any successful transfer. *Id.* Further, Petitioner contends that the record evidence establishes the contrary, that the samples from 1996–1999 did not work. *Id.* For example, Ms. Schwendimann was unable to make any product sales until “well into the 2000s” (*id.* at 11 (citing Ex. 1050, 87:12–88:3)), Ms. Schwendimann testified that “as of August 10, 1999, [Mr. Nasser] ‘tried and tried’ but ‘didn’t come up with anything’ to solve the dark fabric transfer problem” (*id.* (citing Ex. 1049, 44:11–24)), and the “litigation ‘experiment’ . . . “reconstructing one of the samples . . . resulted in a barely visible image” (*id.* (citing Ex. 1048 ¶¶ 8–96)).

In its Sur-reply, Patent Owner argues that the Formula Books corroborate Ms. Schwendimann’s deposition testimony. Sur-reply 3. Patent Owner explains that even though some test results were “not opaque enough,” others, in fact, were successful. *Id.* at 3–4 (citing Ex. 2015, JS004914–4921). And relying on *TransWeb LLC v. 3M Innovative Props. Co.*, 812 F.3d 1295, 1301–02 (Fed. Cir. 2016), Patent Owner states that “the law does not require that the inventor produce corroborating evidence that describes **every element** of the invention.” *Id.* at 4. Patent Owner further asserts that “unwitnessed lab notebooks **can corroborate** inventor testimony so long as there is additional corroborating evidence.” *Id.* at 5. As this additional evidence, Patent Owner refers to “a contact report prepared by Ms. Schwendimann discussing her demonstration of transfer sheets for dark-colored fabrics to a customer . . . in August 1999,” which “indicates that she

‘figured out the Dark Fabric Transfer.’” *Id.* at 6 (citing Ex. 2018, “the Contact Report”).

After considering the full record developed during trial, we agree with Petitioner that there is insufficient evidence to support Patent Owner’s assertion that inventors of the ’623 patent invented the subject matter of the challenged claims before the August 13, 1999 priority date of Williams.

“It is well established . . . that when a party seeks to prove conception through an inventor’s testimony the party must proffer evidence, ‘in addition to [the inventor’s] own statements and documents,’ corroborating the inventor’s testimony.” *Apator*, 887 F.3d at 1295 (quoting *Mahurkar*, 79 F.3d at 1577). Patent Owner attempts to establish an invention date “no later than December 16, 1997,” based on Ms. Schwendimann’s testimony, the Formula Books, and the Contact Report. Patent Owner first argues that Ms. Schwendimann’s testimony, as corroborated by the Formula Books, details each limitation of the challenged claims. PO Resp. 21–24 (claim charts); Sur-reply 3. It is undisputed, however, that the Formula Books are unwitnessed. Sur-reply 5 n.2; Tr. 59:12–60:6. According to the Federal Circuit, the unwitnessed Formula Books *alone* cannot corroborate Ms. Schwendimann’s testimony regarding a purported invention date between 1996 and 1998. *Apator*, 887 F.3d at 1297; *Brown*, 276 F.3d at 1335; *Procter & Gamble*, 566 F.3d at 998–99.

Patent Owner appears to argue that prior Federal Circuit cases restricting the use of unwitnessed laboratory notebooks to corroborate inventor testimony are inapplicable here. In particular, Patent Owner argues that the reason behind the corroboration requirement is to “address[] the concern that a party claiming inventorship might be tempted to describe his

actions in an unjustifiably self-serving manner in order to obtain a patent or to maintain an existing patent.” Sur-reply 5 n.2 (quoting *Singh v. Brake*, 222 F.3d 1362, 1367 (Fed. Cir. 2000)). According to Patent Owner, this is not a concern here because the Formula Books were recorded by “numerous individuals other than Ms. Schwendimann who were working at her direction” and, therefore, the unwitnessed Formula Books “bear hallmarks of reliability to the same extent as witnessed lab notebooks do.” *Id.*

Patent Owner, however, offers no authority to support the argument that unwitnessed lab notebooks, purportedly drafted by persons working at the direction of an inventor and not the inventor herself, “bear hallmarks of reliability to the same extent as witnessed lab notebooks do.” *Id.* Indeed, the laboratory notebooks in the only case Patent Owner relies upon to support its argument were eventually witnessed. *Singh*, 222 F.3d at 1369 (noting the lab notebooks in question were witnessed several years after they were made). Here, it is undisputed that the lab notebooks were never witnessed. Further, the only testimony Patent Owner directs us to on this subject is Ms. Schwendimann’s deposition testimony “guess[ing]” that her co-inventor, Mr. Nasser, wrote one specific entry in a Formula Book. Ex. 1042, 94:20–24. This testimony does not support Patent Owner’s argument we should consider *all* of the entries in *both* Formula Books without concern that “a party claiming inventorship might be tempted to describe his actions in an unjustifiably self-serving manner in order to obtain a patent or to maintain an existing patent.” *Singh*, 222 F.3d at 1367.

This is especially true considering Patent Owner describes the Formula Books as “lab notebooks *kept by the inventors* to document their experiments and inventions.” PO Resp. 20 (emphasis added). Likewise, in

her January 2021 Declaration, Ms. Schwendimann testifies that “*we keep a ‘Formula Book’ in which we record the formulas we make in our facilities.*” Ex. 2014 ¶ 3 (emphasis added). Ms. Schwendimann provided similar testimony in her 2013 Declaration. Ex. 2003 ¶ 2 (“As part of *our* development efforts, *we keep a ‘Formula Book’ in which we record the formulas we make in our facilities.*” (emphasis added)). In contrast to Patent Owner’s representation, these statements suggest some connection between Ms. Schwendimann herself and the information in the Formula Books, which undermines the argument that there “is not a concern here” that “a party claiming inventorship might be tempted to describe his actions in an unjustifiably self-serving manner in order to obtain a patent or to maintain an existing patent.” *Singh*, 222 F.3d at 1367; *See* Sur-reply 23.

Nevertheless in its Sur-reply, Patent Owner asserts that “[t]he law . . . holds that unwitnessed lab notebooks **can corroborate** inventor testimony so long as there is additional corroborating evidence,” and contends that the Contact Report constitutes “additional corroborating evidence” such that the unwitnessed lab notebooks can legally corroborate Ms. Schwendimann’s testimony. Sur-reply 5 (citing *Singh*, 222 F.3d at 1369).

We disagree. To the extent the Contact Report corroborates anything, it would be an invention date of August 10, 1999. Ex. 2018. There is no indication of an earlier date of invention in the Contact Report. Ex. 2018. Thus, the Contact Report does not constitute “additional corroborating evidence” of an invention date “no later than December 16, 1997.” Furthermore, the Contact Report is another example of an inventor’s “own

statements or documents.”¹⁴ *Apator*, 887 F.3d at 1295. For example, Ms. Schwendimann testifies that she personally entered the notes that appear in the Contact Report. Ex. 1042, 127:12–14; Ex. 2028 ¶ 8. According to the Federal Circuit’s holding in *Apator*, Patent Owner cannot rely on the Contact Report to corroborate Ms. Schwendimann’s testimony. *Apator*, 887 F.3d at 1295; *see also id.* at 1297 (stating “[i]t would be strange indeed to say that [an inventor], who filed the . . . affidavit that needs corroborating, can by his own testimony provide that corroboration.” *Id.* at 1297 (quoting *In re NTP, Inc.*, 654 F.3d 1279, 1292 (Fed. Cir. 2011))). Therefore, the unwitnessed Formula Books remain the only evidence purportedly corroborating Ms. Schwendimann’s deposition testimony regarding a pre-December 1997 invention date. And, as we explained above, the unwitnessed Formula Books are insufficient to corroborate Ms. Schwendimann’s testimony. *Apator*, 887 F.3d at 1297; *Brown*, 276 F.3d at 1335; *Procter & Gamble*, 566 F.3d at 998–99.

Thus, contrary to Patent Owner’s contentions otherwise, the facts in this case emphasize the need for evidence corroborating Ms. Schwendimann’s testimony. *Mahurkar*, 79 F.3d at 1577 (stating that

¹⁴ Patent Owner appears to place some significance on the fact that the company NuCoat “maintained” the Contact Report. PO Resp. 40. To the extent Patent Owner is arguing that the Contact Report is not Ms. Schwendimann’s own document because it is “maintained” by NuCoat, we do not consider such an argument to be persuasive. First, it is not clear what Patent Owner means by “maintained.” Second, Patent Owner has not presented any authority to support a position that the relevant inquiry into whether a document is an inventor’s own document is based on who “maintains” the document after it has been prepared, as opposed to the individual who prepared the document itself, including providing the relevant substantive information in the document. *See* PO Resp. 40.

the corroboration “requirement arose out of a concern that inventors testifying in patent infringement cases would be tempted to remember facts favorable to their case by the lure of protecting their patent or defeating another's patent”); *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1171–72 (Fed. Cir. 2006) (“Even the most credible inventor testimony is *a fortiori* required to be corroborated by independent evidence.”).

In the absence of sufficient evidence corroborating Ms. Schwendimann’s testimony regarding the alleged invention date of the subject matter recited in claim 6, we find there is insufficient evidence to support Patent Owner’s assertion that inventors of the ’623 patent invented the subject matter of the challenged claims before the August 13, 1999 priority date of Williams. We thus consider Williams to be prior art to the ’623 patent.

As noted above, it is undisputed that Williams discloses or suggests all of the limitations in independent claim 6, and claims 7, 9–14, and 16 which depend therefrom. We have considered the evidence and arguments presented in the Petition, and agree with Petitioner that Williams discloses or suggests each limitation of claims 6–7, 9–14, and 16. As a result, we find Petitioner has established, by a preponderance of the evidence, that Williams renders the subject matter of claims 6, 7, 9–14, and 16 of the ’623 patent obvious in view of Williams.

E. Challenges based on Asajima (claims 6 and 8)

Petitioner contends claims 6–9, 13, 14, and 16 would have been obvious over Asajima. Pet. 38. Petitioner directs us to portions of Asajima that purportedly disclose each of the limitations in the challenged claims. *Id.* at 38–47. Petitioner also relies on the testimony of Dr. Scott to support its

arguments. *See id.* We consider below Petitioner’s arguments as to claims 6 and 8 only. We do not address claims 7, 9, 13, 14, and 16 because we have already determined that Petitioner has shown that these claims would have been obvious over Williams.

1. *Asajima (Ex. 1018)*

Asajima “relates to a thermal transfer image-receiving sheet and a process for producing the same.” Ex. 1018, 1:6–8. An object of Asajima’s invention “is to . . . provide a thermal transfer image-receiving sheet which enables a high-quality and high-density image free from dropout and omission to be formed with a good thermal energy efficiency even on a rough paper not having a smooth surface.” *Id.* at 2:10–15.

Asajima’s first embodiment is depicted below in Figure 1.

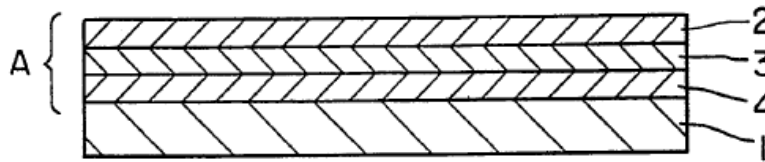


FIG. 1

Figure 1 “is a cross-sectional view of the thermal transfer image-receiving sheet according to [Asajima’s] invention.” *Id.* at 4:5–7. Figure 1 depicts a thermal transfer image-receiving sheet that includes “a resin layer A comprising at least dye-receiving layer 2 and including a hollow capsule having a volumetric hollowness of 50% or more . . . on a substrate sheet 1,” which “is not particularly limited” and may be, for example, “plain paper, wood free paper, tracing paper and plastic films.” *Id.* at 4:23–30. Asajima also describes

the thermal transfer image-receiving sheet . . . can be formed also by a method which comprises forming a transferable resin layer

including the above-described receiving layer on a releasable sheet, such as a polyester film, to prepare a transfer sheet and using the transfer sheet to transfer the transferable resin layer including the receiving layer onto the above-described substrate sheet by any heat pressing means capable of heating the sheet to a temperature at which the receiving layer or adhesive layer is activated, such as a hot stamper for a transfer foil, a hot roll or a hot laminator. When the adhesive layer comprises a pressure sensitive agent, heating is not essential during transfer.

Id. at 7:51–64. According to Asajima, “[t]he receiving layer 2 can be formed by coating one surface of the substrate sheet with a suitable organic solvent solution or organic solvent or water dispersion of a mixture of the above-described resin with necessary additives such as a release agent.” *Id.* at 5:16–20.

Asajima explains that resin layer A “may consist of the receiving layer alone” or, as shown in Figure 1, may further include “an intermediate layer or a barrier layer (hereinafter referred to simply as ‘intermediate layer 3’) and/or an adhesive layer or a pressure sensitive adhesive layer (hereinafter referred to simply as ‘adhesive layer 4’).” *Id.* at 4:35–43. “The intermediate layer 3 can be formed by coating a solution of a resin having a good film forming property” and “may comprise a resin having an improved strength.” *Id.* at 5:52–60.

Asajima further states that “the incorporation of a filler, a white pigment, a fluorescent brightener, etc. in at least one of the above-described layers can provide a receiving layer having an excellent whiteness independently of the ground color of the transfer material.” *Id.* at 7:24–28.

Asajima’s second embodiment is depicted below in Figure 2.

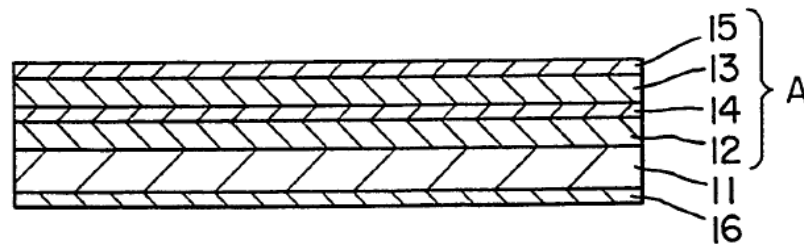


FIG. 2

Figure 2 “is a cross-sectional view of the receiving layer transfer sheet according to [Asajima’s] invention.” *Id.* at 4:8–9. Figure 2 depicts a receiving transfer sheet that includes

a transferable resin layer A provided on one surface of a substrate sheet 11, and is characterized in that the transferable resin layer A comprises a dye-receiving layer 12 and a cell-containing layer 13 and the cell-containing layer 13 contains a cell and/or a foaming agent capable of increasing the thickness of the transferable resin layer 18 by a factor of 1.1 to 4 upon being heated.

Id. at 8:1–9.

Asajima discloses that “[i]f necessary, the resin layer may further comprise an intermediate layer 14 and an adhesive layer 15,” and also “may comprise a heat-resistant lubricating layer 16.” *Id.* at 8:10–13.

Asajima explains that “[t]here is no particular limitation on the transfer material onto which a transfer layer including a receiving layer is transferred by using the above-described receiving layer transfer sheet, and examples thereof include plain paper, wood free paper, tracing paper and plastic films.” *Id.* at 11:14–19. Further, “[t]he transfer layer can be transferred by any heat pressing means capable of heating the sheet to a temperature at which the receiving layer or adhesive layer is activated, such as a hot stamper for a transfer foil or a hot roll.” *Id.* at 11:24–28.

Asajima describes first transferring the thermal transfer image-receiving sheet onto plain paper by means of a hot roll and then printing an image or indicia on the surface of the receiving layer with a thermal head. *See, e.g., id.* at 21:12–23.

2. *Analysis of Claims 6 and 8*

Claim 8 depends from claim 6 and additionally requires that the polymer layer of the image transfer sheet comprises polypropylene. Ex. 1002, 12:30–31.

Petitioner argues that Asajima would have rendered claim 6 of the '623 patent obvious. Pet. 38. Petitioner contends that Asajima's "thermal transfer image-receiving sheet" is the "image transfer sheet" the '623 patent recites. *Id.* (citing Ex. 1018, 1:6–12; Ex. 1001 ¶ 156). Petitioner argues that "Asajima's thermal transfer image-receiving sheet comprises an improved resin layer A, which includes (i) a dye-receiving layer 2, (ii) intermediate layer 3, and (iii) adhesive layer 4." *See id.* (citing Ex. 1018, 4:35–45).

According to Petitioner, Asajima explains that resin layer A can be formed on a "releasable sheet," or substrate, and then used to transfer the thermal transfer image-receiving sheet onto a permanent or final substrate. *Id.* at 38–39 (citing Ex. 1018, 7:51–62). Though Asajima exemplifies use of a polyester film as the releasable sheet, Petitioner states that "it was common knowledge to a [person of ordinary skill in the art] that silicone (or other releasing agent)-coated paper was a well-known 'releasable sheet,' essentially interchangeable with the exemplary 'polyester film.'" *Id.* at 39. Petitioner asserts that the releasable sheet may use silicone "to form a 'peeling layer' on a paper substrate." *Id.* (citing Ex. 1018, 8:34–39). Petitioner also explains that even though Asajima does not describe its

releasable sheet as either colored or non-colored, use of a colored releasable sheet would have been an obvious design choice. *Id.* at 40 (citing Ex. 1001 ¶ 159).

Petitioner contends that the claimed “release layer” is the layer overlaying the substrate and includes a white pigment. *Id.* at 41. According to Petitioner, Asajima teaches that a white pigment may be included in any of its layers, including “the releasable sheet, the adhesive layer 4, the intermediate layer 3 and/or the dye-receiving layer 2.” *Id.* (citing Ex. 1018, 7:24–28). Petitioner argues that Asajima includes a white pigment “to improve the whiteness of the substrate receiving the image, and therefore provide a white background for the image.” *Id.* at 42 (citing Ex. 1018, 10:53–57). Petitioner further contends that the “white layer”—i.e., the portion of the release layer having a white pigment—mixes and melts with adjacent layers because they “are of the same type and therefore would have the same or similar thermal properties, such as melt and glass transition temperature ranges, as the materials disclosed in the ‘623 Patent for corresponding layers.” *Id.* (citing Ex. 1001 ¶¶ 162–170 (comparing polymers of Asajima and the ‘623 patent)). According to Petitioner, when heat and pressure are “applied under similar conditions, whatever ‘melting and mixing’ that may occur in the ‘623 Patent as argued by the Patent Owner in the Interference will also occur in Asajima.” *Id.* (citing Ex. 1001 ¶ 127).

With respect to the additional limitation of claim 8, Petitioner asserts that “Asajima teaches that the dye-receiving layer 2, 13 may include ‘polypropylene.’” *Id.* at 45 (citing Ex. 1018, 4:49–50, 8:56–57, 12:40–41, 16:58–59; Ex. 1001 ¶¶ 179–181).

Patent Owner, focuses on Petitioner’s purported failure to show that Asajima discloses “an image transfer sheet” or a “white layer” that melts and mixes with another layer. PO Resp. 34–40. Because we determine Petitioner has failed to establish that Asajima suggests a white layer that melts and mixes with another layer, we confine our discussion below to addressing that issue.

In the Decision on Institution, we expressed “some doubt,” based on Petitioner’s argument and evidence that Asajima teaches a white layer that mixes and melts with other layers as the claims 6 and 8 require. DI 29. Specifically, we noted that “Petitioner does not direct our attention to any teaching in Asajima that any layer . . . melts and mixes with any other layer,” and instead, relies heavily on its expert’s testimony that “‘to the extent melting and mixing occurs, as asserted by the inventor for the ’623 patent, . . . the layers described in Asajima will behave in the same manner (i.e., melt and mix)’ when the same heat and pressure is applied.” *Id.* at 28–29.

Petitioner asserts that the layers of Asajima would melt and mix in the same manner as those in the ’623 patent. Pet. Reply 15. According to Petitioner, “[t]hat is because, to the extent ‘melt’ and ‘mix’ are disclosed in the ’623 patent at all, it is only through the same type of inferences drawn from the nature of the disclosed materials and the prescribed application temperatures” as “[t]he ’623 patent itself is devoid of any explicit statement that its white layer ‘melts.’” *Id.* Therefore, Petitioner reasons that a person of ordinary skill in the art examining the ’623 patent “is left to *infer* that the white layer and adjacent layers *may* ‘melt’ and ‘mix’ by examining the melt temperatures/indexes for the various disclosed materials and comparing

them to the prescribed application temperature ranges.” *Id.* at 16. As a result, according to Petitioner, “Asajima’s disclosure that the white layer ‘melts’ is at least as robust as the ’623 patent’s disclosure.” *Id.*

Having considered the full trial record, we determine that Petitioner has not carried its burden of showing, by a preponderance of the evidence, that the white layer of Asajima melts and mixes as the claim 6 of the ’623 patent, and its dependent claims, require. As Petitioner admits, Asajima fails to expressly describe melting. Pet. Reply 15. And when Asajima discusses applying heat, it does so in the context of “activating” either the adhesive layer or the foaming agent of the receiving layer. *See, e.g.*, Ex. 1018, 2:50–67, 6:34–36, 7:56–61, 8:5–9, 9:66–68, 11:24–28, 11:44–46. Asajima further explains that “[w]hen the adhesive layer comprises a pressure sensitive agent, heating is not essential during transfer.” *Id.* at 7:62–64. Unlike other prior art references on which Petitioner relies in other asserted grounds to suggest melting, Asajima does not even describe or suggest the process of melting. *Compare* Ex. 1018, *with* Ex. 1024, 7:8 (“the adhesion layer melts and flows”) *and* Ex. 1016, Abstract, 3:8–13, 3:25, 4:23–26, 6:24–30, 7:12–16, claims 1, 14, and 17 (each explaining that the polymeric coating “softens and penetrates”). Petitioner does not address the “doubt” we expressed in the Decision on Institution by directing our attention to any passage in Asajima that could suggest “melting” occurs, and our independent review of Asajima reveals none. Petitioner has thus failed to carry its burden of establishing that Asajima teaches a white layer that mixes and melts with other layers as claimed. Accordingly, Petitioner has not shown, by a preponderance of the evidence, that claims 6 and 8 of the ’623 patent are unpatentable as obvious over Asajima.

F. Remaining Grounds of Unpatentability

Having determined that Petitioner establishes, by a preponderance of the evidence, that claims 6, 7, 9–14, and 16 are unpatentable as obvious over Williams, we do not address Petitioner’s additional grounds challenging claims 6, 7, 9–14, and 16. *See SAS*, 138 S. Ct. at 1359 (holding a petitioner “is entitled to a final written decision addressing all of the claims it has challenged”); *Boston Sci. Scimed, Inc. v. Cook Grp. Inc.*, 809 F. App’x 984, 990 (Fed. Cir. 2020) (nonprecedential) (“We agree that the Board need not address [alternative grounds] that are not necessary to the resolution of the proceeding.”).

III. CONCLUSION¹⁵

For the foregoing reasons, we conclude that Petitioner has satisfied its burden of demonstrating, by a preponderance of the evidence, that claims 6, 7, 9–14, and 16 of the ’623 patent are unpatentable. We also conclude that Petitioner has not satisfied its burden of demonstrating, by a preponderance of evidence, that claim 8 of the ’623 patent is unpatentable.

IV. ORDER

In consideration of the foregoing, it is hereby:

¹⁵ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner’s attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. *See* 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).

ORDERED that Petitioner has established by a preponderance of the evidence that claims 6–7, 9–14, and 16 are unpatentable;

FURTHER ORDERED that Petitioner has not established by a preponderance of evidence that claim 8 is unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

In summary:

Claims	35 U.S.C. §	Reference(s)/ Basis¹⁶	Claim(s) Shown Unpatentable	Claim(s) Not Shown Unpatentable
6, 7, 9–14, 16	§ 103	Williams	6, 7, 9–14, 16	
6–9, 13, 14, 16	§ 103	Asajima		6, 8
6, 10–12, 16	§ 103	DeVries		
6, 7, 9–12, 16	§ 103	Keino		
6, 7, 9–12, 14, 16	§ 103	Oez, Takao		
Overall Outcome			6, 7, 9–14, 16	8

¹⁶ In view of our determination that claims 6, 7, 9–14, and 16 are unpatentable as obvious in view of Williams, we do not reach the ground based on Asajima with respect to claims 7, 9, 13, 14, and 16 or grounds for which the last two columns of this table are blank. *See* Sections II.E. and II.F.

IPR2020-00633
Patent RE41,623 E

FOR PETITIONER:

Glenn E. Forbis (Reg. No. 40,610)
James B. Luchsinger (Reg. No. 73,705)
Jewell Briggs (Reg. No. 77,298)
Mathew L. Cutler (Reg. No. 43,574)
HARNESS, DICKY & PIERCE PLC

gforbis@hdp.com
mcutler@hdp.com
bluchsinger@hdp.com
jbriggs@hdp.com

FOR PATENT OWNER:

Devan V. Padmanabhan (Reg. No. 38,262)
Michelle E. Dawson (Reg. No. 62,319)
Britta S. Loftus (admitted *pro hac vice*)
PADMANABHAN & DAWSON, PLLC

devan@paddalawgroup.com
michelle@paddalawgroup.com
britta@paddalawgroup.com