

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

3M COMPANY,
Petitioner,

v.

BAY MATERIALS, LLC,
Patent Owner.

IPR2022-01215
Patent 10,870,263 B2

Before GRACE KARAFFA OBERMANN, KRISTINA M. KALAN,
and JULIA HEANEY, *Administrative Patent Judges*.

OBERMANN, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

This is a Final Written Decision in an *inter partes* review of 1–4, 7, 11–14, 16, 18, and 31 of U.S. Patent No. 10,870,263 B2 (Ex. 1001, “the ’263 patent”). We have jurisdiction under 35 U.S.C. § 6 and enter this Decision pursuant to 35 U.S.C. § 318(a). This Decision is based on the information presented in the Petition (Paper 2, “Pet.”), Patent Owner’s Response to the Petition (Paper 21, “Resp.”), Petitioner’s Reply (Paper 27, “Reply”), Patent Owner’s Sur-reply (Paper 33, “Sur-reply”), and the evidence of record.

For reasons that follow, we determine that every challenged claim is proven unpatentable on this record.

A. Real Parties-in-Interest

Petitioner asserts 3M Company is the real party-in-interest. Pet. 2. Patent Owner asserts the real party-in-interest is Bay Materials, LLC, a wholly-owned subsidiary of Straumann Manufacturing, Inc. Paper 4, 1.

B. Related Matters

Both parties identify *Bay Materials LLC v. 3M Company*, No. 1:21-cv-1610-RGA (D. Del.) (“the District Court action”) as a related matter. Pet. 2; Paper 4, 1. Petitioner also points out that IPR2022-01214 (“IPR1214”) involves the same parties and is directed to U.S. Patent No. 10,946,630 B2, which shares a common parent application with the ’263 patent. Pet. 3; *see* Paper 4, 1; *see also* Ex. 1001, code (63).

This proceeding is not joined or consolidated with IPR1214. In a single hearing, we heard final oral arguments in both proceedings by videoconference on October 20, 2023. *See* Paper 40 (“Tr.”). Concurrently with this Decision, we enter a final written decision in IPR1214.

II. BACKGROUND

A. The '263 Patent (Ex. 1001)

The '263 patent, titled “Dual Shell Dental Appliance and Material Constructions,” relates to “[a] polymeric sheet composition” having “at least two outer layers” and “an elastomeric inner layer.” Ex. 1001, code (54) (Title), 25:2–4 (claim 1). This Decision focuses on a limitation of the challenged claims that requires “an elastomeric material having a hardness from about A 60 to D 85.” *Id.* at 25:7–9 (claim 1), 26:7–8 (claim 11), 27:49–51 (claim 31).

We reproduce below Figure 1A from the '263 patent, which illustrates a three-layer sheet composition of the claimed invention.

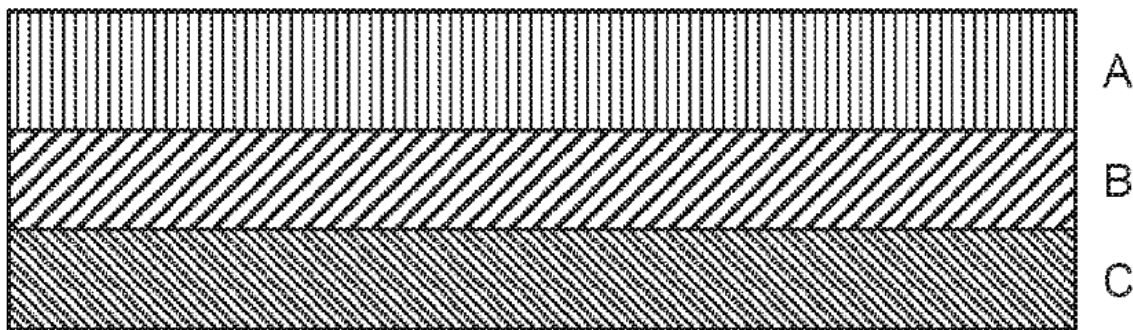


FIG. 1A

Figure 1A depicts “a cross sectional view of a three-layer sheet of the invention with a simple ABC construction.” *Id.* at 3:41–43. The sheet consists of two outer layers, which are labeled A and C in Figure 1A, and an elastomeric inner layer, which is labeled B.

The '263 patent illustrates “exemplary test samples for determining displacement” in Figure 2A, “and lateral restoring force” in Figure 2B. *Id.* at 3:56–58. We reproduce those figures below.

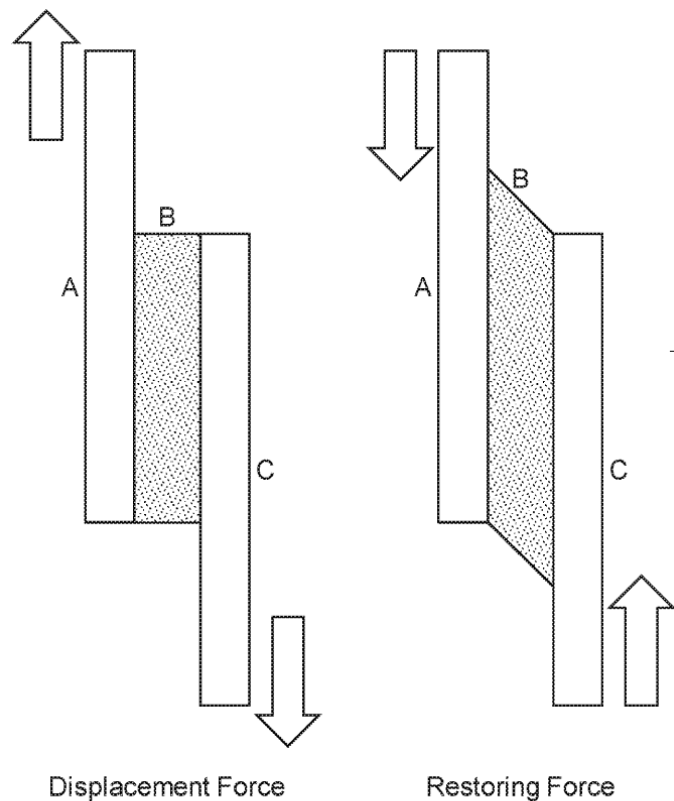


FIG. 2A

FIG. 2B

Figures 2A and 2B illustrate “a simple 3-layer sheet comprised of two rigid outer layers,” labeled A and C, “and an inner elastomeric layer,” labeled B. *Id.* at 3:59–61. “In this example, layers A and C are reversibly translated relative to each other and layer B provides a restoring force.” *Id.* at 3:61–63.

The '263 patent indicates that the polymeric sheets of the invention “are useful, for example, in a dental appliance, and are constructed of layers that impart flexibility and strength and stain resistance.” *Id.* at 1:19–23. The '263 patent identifies “a need for improved orthodontic and dental appliances capable of facilitating orthodontic tooth movements, stabilizing tooth positions or protecting teeth from potentially damaging outside forces.” *Id.* at 1:28–30. For example, aligners are dental appliances fabricated as “plastic shells which fit over teeth” that are “designed to apply

translational or rotational forces to teeth.” The ability of aligners “to accurately move teeth is limited by their effective modulus, elasticity and ability to resist creep and stress relaxation.” *Id.* at 1:35–38. In addition, aligners “generally should be resistant to staining and environmental stress cracking.” *Id.* at 1:39–40. The ’263 patent discusses requirements for other dental appliances, including sports guards and dental splints. *Id.* at 1:41–46.

B. Challenged Claims

The Petition challenges claims 1–4, 7, 11–14, 16, 18, and 31, of which claims 1, 11, and 31 are independent. Claim 1, which we reproduce below, is representative of the subject matter of the claimed invention.

1. A polymeric sheet composition comprising:
at least two outer layers A and C and an elastomeric inner layer B,
wherein one or both of the outer layers A and C individually
comprise a thermoplastic polymer having a flexural modulus of
from about 1,000 MPa to 2,500 MPa, and the inner layer B is
comprised of *an elastomeric material having a hardness from
about A60 to D85.*

Ex. 1001, 25:2–9 (Board’s emphasis). The other independent challenged claims specify the same hardness range for the elastomeric inner layers. *Id.* at 26:7–8 (claim 11), 28:49–51 (claim 31). We refer to the feature of *an elastomeric material having a hardness from about A60 to D85*, which is central to our analysis, as the “hardness limitation.”

C. Asserted Grounds of Unpatentability

All of the grounds asserted in the Petition are based on anticipation under 35 U.S.C. § 102(a).¹ We provide below a chart that reproduces the asserted grounds as identified in the Petition.

Ground	Claims Challenged	Reference
1	11–14, 16, 18	Yu ² (Example 1)
2	1–4, 7, 31	Yu (Example 1)
3	1–4, 7, 31	Stewart ³ (Sample 2)

Pet. 3. The Petition is supported by the Declaration of Dr. Alan Jeffrey Giacomini. Ex. 1002. Patent Owner’s Response is supported by the Declaration of Dr. Tim A. Osswald. Ex. 2008. The Reply is supported by the Reply Declaration of Dr. Giacomini. Ex. 1037.

Petitioner asserts that Yu (Example 1) “qualifies as prior art under AIA § 102(a)(2) and (d)(2).” Pet. 44. Petitioner asserts that Stewart (Sample 2) “qualifies as prior art under § 102(a)(1).” *Id.* at 49.

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284 (September 16, 2011), includes revisions to Section 102(a) that became effective on March 16, 2013. For reasons explained in this Decision, Petitioner is correct that the challenged claims are entitled to an effective filing date no earlier than December 18, 2019 and, therefore, the AIA provisions apply in this proceeding. *See* Pet. 22, 39–40; Ex. 1001, code (60).

² WO 2020/225657, published Nov. 12, 2020 (Ex. 1012). On this record, we agree with Petitioner that Yu has an effective filing date of May 3, 2019, and qualifies as prior art under AIA 35 U.S.C. § 102(a)(2) and (d)(2). Pet. 44.

³ WO 2018/222,864 A2, published Dec. 6, 2018 (Ex. 1011).

III. ANALYSIS

A. Level of Ordinary Skill in the Art

The level of ordinary skill in the art at the time of the invention is a factual determination that provides a primary guarantee of objectivity in an obviousness analysis. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 1324 (Fed. Cir. 1999) (citing *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966); *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991)).

The parties disagree about the appropriate definition of the ordinarily skilled artisan and, in particular, whether that artisan would have had experience or familiarity with the “processing of thermoformable polymer sheets” to form “orthodontic and dental appliances.” Resp. 16 (citing Ex. 2008 ¶ 14); *see* Pet. 14–15 n.1 (disagreeing with that proposition).

Patent Owner’s definition is supported by the plain wording of challenged claim 18, which recites a dental appliance. Resp. 16 (citing Pet. 14 n.1); Ex. 1001, 26:50–52. The ’263 patent, moreover, includes an “extensive discussion of dental appliances and the unexpectedly good properties of dental aligners” thermoformed from polymeric sheets. Resp. 16; Ex. 1001, 1:20–47, 4:57–5:10, 5:26–6:6, 6:39–43, 10:25–51, 11:30–48, 12:22–24, 13:25–29, 21:1–6, 24:2–3, 24:30–57; *see id.* at 15:23–38 (describing the thermoforming process for making dental appliances).

The prior art asserted in the challenge, namely, Yu (Example 1) and Stewart (Sample 2), similarly pertain to multilayer dental appliances thermoformed from thermoplastic polymeric sheets. Ex. 1011 ¶¶ 2, 5, 31–33, 49, 79–81 (Stewart); Ex. 1012, code (57), ¶¶ 9, 12, 38, 92–97, 99 (Yu); *see* Pet. 50–66 (arguments illuminating that point). The asserted prior art further supports Patent Owner’s view that the ordinarily skilled artisan

would have had at least some familiarity with the methods by which “thermoformable polymer sheets” are processed to form “orthodontic and dental appliances.” Resp. 15; *see Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (prior art itself can reflect appropriate level of skill in the art).

In any event, neither party argues that the ultimate result in this case would change based on which of the somewhat differing proposed definitions we adopt in our analysis. We adopt Patent Owner’s proposed definition, but determine also that the result would not change under Petitioner’s proposed definition. *See* Pet. 14–15 n.1.

*B. Effective Filing Date of the Challenged Claims and
Prior Art Status of Yu (Example 1) and Stewart (Sample 2)*

The only genuinely disputed issue of material fact in this case is the effective filing date of the challenged claims, which, in turn, determines whether Yu (Example 1) and Stewart (Sample 2) qualify as prior art. *See* Resp. 20–61 (Patent Owner, contesting only that issue in the Response).

The ’263 patent issued from U.S. Patent Application No. 16/719,256 (“the ’256 application”), filed on December 18, 2019. Ex. 1001, codes (21), (22), (63). The ’256 application was a continuation-in-part of U.S. Patent Application No. 16/211,176 (“the ’176 application”), filed on December 5, 2018. *Id.* The ’263 patent specification supports the hardness limitation by specifically disclosing that inner layers of the polymeric sheet compositions of the invention may have “a hardness of from about A 60 to D 85.” *Id.* at 12:64–67. No corresponding language appears in the ’176 application. *See generally* Ex. 2001.

As Petitioner points out, the '176 application mentions the required hardness range only in the context of a prior art embodiment of a dental aligner. Pet. 39 (citing Ex. 1028 ¶ 109). Specifically, when describing that prior art embodiment, the '176 application explains that an earlier U.S. patent teaches the use of a soft layer “having a hardness of from about 60 A to about 85 D” in a *soft-hard-soft* layer composition. Ex. 1028 ¶ 109. The claimed invention, by contrast, includes a soft layer in a *hard-soft-hard* layer composition. Ex. 1001, 22:8–34, 26:7–8, 31:49–51 (independent challenged claims).

In Patent Owner’s view, the '176 application describes the use of elastomeric materials that meet the hardness limitation. *See* Resp. 35–42. The problem, for Patent Owner, is that the '176 application refers to elastomeric materials “having a hardness of from about 60A to about 85D” **only** in the context of distinguishing the claimed invention from a prior art embodiment in which “a ‘hard polymer layer’” is “disposed between two soft polymer layers,” in a prior art *soft-hard-soft* composition that results in “poor stain[] resistance” and “poor tear resistance.” Ex. 2001 ¶ 109. By contrast, when describing the inventive *hard-soft-hard* composition, the '176 application broadly refers to “an elastomeric material” as the soft inner layer, without any limitation on hardness, except to indicate that the material may be “a polyurethane” between two layers of polyester. *Id.* ¶ 110.

The disclosure of elastomeric materials “having a hardness of from about 60A to about 85D” when employed as the *two soft outer layers* in an unclaimed and disfavored *soft-hard-soft* layer composition (*id.* ¶ 109) does not convey, with reasonable clarity, that the inventors had possession of the inventive *hard-soft-hard* layer composition in which the *single soft, inner*

layer also is within that same hardness range (*id.* ¶ 110). Critically, when discussing the soft, inner layer of the inventive *hard-soft-hard* layer composition, the '176 application nowhere indicates that the soft inner layer must have “a hardness of from about 60A to about 85D.” *Id.* ¶ 109 (discussing a prior art embodiment); *see id.* ¶¶ 7, 33–35, 109–110.

Even if the hardness limitation of the challenged claims would have been obvious from the relied-upon disclosure in the '176 application (*id.* ¶ 109), as a matter of law, that circumstance is insufficient to establish a filing date through that application. “Entitlement to a filing date does not extend to subject matter which is not disclosed, but would be obvious over what is expressly disclosed.” *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1306 (Fed. Cir. 2008) (quotations omitted); *see* Pet. 21 (quoting that controlling precedent). Each of Patent Owner’s countervailing arguments is unpersuasive because, at best, Patent Owner attempts to show that it would have been obvious to import—from the description of the soft *outer* layers in an unclaimed and disfavored soft-hard-soft embodiment—a limitation not expressly imposed on the soft *inner* layer in the inventive hard-soft-hard embodiment. Ex. 2001 ¶ 109; Resp. 35–42. A showing of obviousness is not enough under the controlling precedent cited by Petitioner. *PowerOasis*, 522 F.3d at 1306.

Accordingly, we agree with Petitioner that the invention that Patent Owner seeks to protect in the '263 patent is not “part of the invention” described in the '176 application. Pet. 40 (emphasis omitted); *see* Ex. 2001 ¶ 109 (describing elastomeric materials, having the specified hardness, only in the context of an unclaimed and disfavored prior art *soft-hard-soft* layer composition).

In our decision to institute review, we made preliminary findings nearly identical to those set forth above and included a citation to the controlling *PowerOasis* precedent cited by Petitioner. Paper 16 (“Dec.”), 8–10. We invited Patent Owner to “contest this issue in a timely response to the Petition.” *Id.* at 10. In response to that invitation, Patent Owner does not address, much less persuasively distinguish, the controlling precedent raised in the Petition from the outset and highlighted in our institution decision. Pet. 20–21; Dec. 10; *see* Resp. 35–42 (nowhere citing *PowerOasis*).

Instead, Patent Owner attempts to show that an ordinarily skilled artisan would have understood that the elastomeric inner layer in the inventive *hard-soft-hard layer* composition “***could have*** a hardness ranging from 60A to 85D,” but that is an obviousness argument legally insufficient to show that, by the date of the filing of the ’176 application, the inventors possessed the invention actually claimed in the ’263 patent, including the limitation that narrows the hardness of the soft, inner layer to that range. Resp. 38 (Board’s emphasis). Patent Owner does not address, much less distinguish, the controlling principle, articulated in *PowerOasis*, that entitlement to a filing date does not extend to subject matter merely obvious from an asserted priority application. *See PowerOasis*, 522 F.3d at 1306; Resp. 41–42 (citing other decisions but nowhere addressing *PowerOasis*).

In the Sur-reply, Patent Owner advances an array of fact-intensive arguments in an attempt to show that the soft inner layer, disclosed in the ’176 application for use in the inventive *hard-soft-hard layer* composition, would have been available to the ordinary skilled artisan in hardness values that meet the hardness limitation of the challenged claims. *See* Sur-reply 10–25. Those arguments miss the mark because, here again,

they go to whether the disclosure of the '176 application would have made obvious the selection of an inner elastomeric layer having “a hardness of from about A 60 to D 85” in a *hard-soft-hard* layer composition. Ex. 1001, 12:64–67; *see* Sur-reply 10 (heading, introducing fifteen pages of new arguments that the '176 application supports the hardness range); *see* Ex. 2001 ¶¶ 109, 110 (relevant paragraphs from the '176 application, which cannot reasonably be read as expressly limiting the hardness of the soft layer in a *hard-soft-hard* layer composition to the range reported only in connection with a disfavored and unclaimed *soft-hard-soft* embodiment).

For example, in the Sur-reply, Patent Owner submits “that a skilled artisan would have understood that the general category of polyurethane elastomers” discussed in the '176 application for use as the soft layer in the inventive *hard-soft-hard* layer composition “would include materials” that meet the hardness limitation. Sur-reply 11. By way of further example, Patent Owner submits that “polyurethane elastomers with” a hardness value “up to 85D were known to be soft” and, on that basis, argues the soft inner layer of the *hard-soft-hard* composition described in the '176 application “can have” a hardness of that value. *Id.* at 23. Those arguments are based on obviousness, not on express teachings in the intrinsic disclosure of the '176 application. Those arguments cannot trump the intrinsic disclosure of the document itself, which supports Petitioner’s view that the '176 application lacks an express disclosure of the hardness limitation. Ex. 2001 ¶¶ 109, 110 (relevant disclosure of the '176 application, which plainly does *not* teach that the soft inner layer of the inventive *hard-soft-hard* layer composition must be limited to a “hardness of from about 60A to about 85D” as specified in the independent challenged claims).

For the above reasons, we determine that the challenged claims are not entitled to the benefit of the filing date of the '176 application because the application does not indicate that the inventors had possession of the hardness limitation of the claimed invention. *See* Reply 7–13 (Petitioner's arguments on this issue). On the full trial record, we find that the earliest effective filing date to which the challenged claims are entitled is December 18, 2019, the filing date of the '256 application from which the '263 patent issued. Ex. 1001, codes (21), (22).

Every challenged claim recites, or inherits via dependence, the hardness limitation “of from about 60A to about 85D” for the inner elastomeric layers of the inventive *hard-soft-hard* multilayer composition. Ex. 1001, 25:2–9 (independent claim 1), 26:1–8 (independent claim 11), 27:49–51 (independent claim 31). In view of our determination that the earliest effective filing date to which the challenged claims are entitled is December 18, 2019, we agree with Petitioner that Yu (Example 1) and Stewart (Example 2) qualify as prior art against the challenged claims. Pet. 43–49 (Petitioner's persuasive arguments and evidence on point).

C. Claim Construction

Claim terms are given their ordinary and customary meaning, as understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). We construe only terms in controversy, and then only to the extent necessary to resolve the controversy. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

No claim term requires express construction for purposes of this Decision.

D. Merits of the Patentability Challenges

Patent Owner does not contest the merits of Petitioner’s unpatentability challenge, except to argue that Yu (Example 1) and Stewart (Sample 2) do not qualify as prior art. *See* Resp. 20–61. For reasons explained above, we resolve that disputed issue in Petitioner’s favor. As explained below, we adopt Petitioner’s remaining arguments because they are uncontested and supported by persuasive evidence.

*1. Grounds 1 and 2: Yu (Example 1)
Anticipates Claims 1–4, 7, 11–14, 16, 18, and 31*

For each limitation of every challenged claim, Petitioner maps the limitation to a corresponding disclosure in Yu (Sample 1).⁴ Pet. 50–62. We first address the sufficiency of the evidence presented in the Petition with respect to independent claims 1, 11, and 31.

Independent claim 1 is directed to “[a] polymeric sheet composition.” Ex. 1001, 25:2. To the extent that this language from the preamble of claim 1 is limiting, we agree with Petitioner that Yu (Example 1) similarly discloses a polymeric sheet composition. Pet. 57 (citing Ex. 1002 ¶ 141); *see id.* at 51; Ex. 1002 ¶ 124; Ex. 1012 ¶¶ 63, 92. Further, Yu (Example 1) discloses “at least two outer layers A and C and an elastomeric inner layer B.” Pet. 57; Ex. 1002 ¶¶ 142, 143. In particular, inner layer B of claim 1 is met “by Neostar(FN007) layer 2” in Yu (Example 1). Pet. 57; Ex. 1012 ¶ 78. Yu (Example 1) also teaches the flexural modulus and hardness limitations of claim 1. Pet. 57; Ex. 1002 ¶¶ 144, 145; Ex. 1012 ¶ 78. On this complete

⁴ We take note that the first and second grounds asserted in the Petition are based on anticipation by the same prior art disclosure. Pet. 3. For the sake of simplicity, we address those grounds together in our analysis.

record, Petitioner proves by a preponderance of the evidence that Yu (Example 1) anticipates claim 1.

Turning to independent claim 11, we agree with Petitioner that Yu (Example 1) describes the coextrusion of “a multilayered polymeric film,” that is, a “sheet,” arranged in the hard-soft-hard-soft-hard, five-layer configuration required by this independent claim. Pet. 50–51; Ex. 1002 ¶¶ 124, 126–128; Ex. 1012 ¶¶ 63, 78, 92. The hard layers in that configuration of Yu (Example 1) are “hard” within the meaning of claim 11. Pet. 53; Ex. 1002 ¶ 131; Ex. 1012 ¶ 78. On this record, we agree with Petitioner that Yu (Example 1) anticipates claim 11.

As to independent claim 31, Petitioner asserts that this claim embraces subject matter “substantively identical to the combined limitations of challenged claim 7, which is dependent on claims 2 and 1.” Pet. 62. For reasons explained above, Petitioner shows that claim 1 is anticipated by Yu (Example 1). We accept Petitioner’s uncontested arguments on this issue because they are supported by citations to persuasive evidence that demonstrates dependent claims 2 and 7 are anticipated by Yu (Example 1). Pet. 59 (citing Ex. 1002 ¶ 147) (for claim 2), 60–61 (citing Ex. 1002 ¶¶ 150–152); Ex. 1012 ¶¶ 78, 79 (Yu’s Table 1); Ex. 1030, 536–538). On this complete record, Petitioner proves by a preponderance of the evidence that Yu (Example 1) anticipates claims 2, 7, and 31.

Petitioner directs us to uncontested, persuasive evidence supporting its arguments that dependent claims 3, 4, 12–14, 16 and 18 are anticipated by Yu (Example 1). Pet. 54–56, 59–60 (citing Ex. 1002 ¶¶ 133–137, 138 (App. B), 139, 148, 149; Ex. 1005; Ex. 1010, 47 (¶ 101), 50 (¶ 109); Ex. 1012 ¶¶ 78, 92, 93, 108 (Yu’s Table 2); Ex. 1013; Ex. 1014; Ex. 1020,

212:19–213:2). On this complete record, Petitioner proves by a preponderance of the evidence that Yu (Example 1) anticipates dependent claims 3, 4, 12–14, 16 and 18.

*2. Ground 3: Stewart (Sample 2)
Anticipates Claims 1–4, 7, and 31*

For each limitation of claims 1–4, 7, and 31, Petitioner maps the limitation to a corresponding disclosure in Stewart (Sample 2). Pet. 62–66. Patent Owner does not contest Petitioner’s arguments or evidence, except to contend that the Stewart (Sample 2) reference does not qualify as prior art. Resp. 20–61. For reasons explained above, we determine that Stewart (Sample 2), in fact, qualifies as prior art. *Supra* 8–12.

On this record, we adopt Petitioner’s uncontested contentions pertaining to this ground because each is supported by citations to persuasive evidence. Pet. 62–66. For example, with respect to independent claim 1, Petitioner directs us to disclosures in Stewart (Sample 2) that teach a polymeric sheet composition that includes at least two outer layers and an elastomeric inner layer. *Id.* at 63–64; Ex. 1002 ¶¶ 160, 161; Ex. 1011 ¶ 96 (Table 3). Stewart (Sample 2), moreover, teaches at least one embodiment having flexural modulus and hardness values that fall within the ranges specified in claim 1. Pet. 64–65; Ex. 1002 ¶¶ 162, 163; Ex. 1011 ¶¶ 43, 91 (Tables 1 & 2), 96 (Table 3)). On this complete record, Petitioner proves by a preponderance of the evidence that Stewart (Sample 2) anticipates claim 1.

Petitioner further proves by a preponderance of the evidence that Stewart (Sample 2) anticipates dependent claims 2–4, 7, and 11, as well as independent claim 31. Pet. 65–66. Petitioner directs us to disclosures in

Stewart (Sample 2) that teach every limitation of those claims. *Id.*; Ex. 1002 ¶¶ 165–169; Ex. 1011 ¶¶ 91 (Table 2), 94, 96 (Table 3)).

IV. CONCLUSION

For the above reasons, we determine that every challenged claim of the '263 patent is proven unpatentable on this record. We summarize our decision in the following chart.

Claims	35 U.S.C. §	Reference	Claims Shown Unpatentable	Claims Not Shown Unpatentable
11–14, 16, 18	102(a)	Yu (Example 1)	11–14, 16, 18	
1–4, 7, 31	102(a)	Yu (Example 1)	1–4, 7, 31	
1–4, 7, 31	102(a)	Stewart (Sample 2)	1–4, 7, 31	
Overall Outcome			1–4, 7, 11–14, 16, 18, 31	

V. ORDER

It is

ORDERED that claims 1–4, 7, 11–14, 16, 18 and 31 of the '263 patent are proven unpatentable on this record; and

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

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