

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

REVVO TECHNOLOGIES, INC.,
Petitioner,

v.

TIRE STICKERS LLC,
Patent Owner.

IPR2025-00631
Patent 11,124,027 B2

Before MITCHELL G. WEATHERLY, KEVIN W. CHERRY, and
BRIAN D. RANGE, *Administrative Patent Judges*.

CHERRY, *Administrative Patent Judge*.

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

I. INTRODUCTION

Revvo Technologies, Inc. (“Petitioner”) filed a Petition to institute *inter partes* review of claims 1–3, 5, 7–9, 11–13, and 15–22 of U.S. Patent No. 11,124,027 B2 (Ex. 1001, “the ’027 patent”). Paper 2 (“Pet.”). Tire Stickers LLC (“Patent Owner”) filed a Preliminary Response. Paper 9 (“Prelim. Resp.”).

We have authority under 35 U.S.C. § 314 to determine whether to institute an *inter partes* review. The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted unless “there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” The Supreme Court has held that the Board, in a decision to institute under 35 U.S.C. § 314(b), may not institute review on less than all claims challenged in the petition. *SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1355–56 (2018). Moreover, in accordance with our rules, “[w]hen instituting *inter partes* review, the Board will authorize the review to proceed on all of the challenged claims and on all grounds of unpatentability asserted for each claim.” 37 C.F.R. § 42.108(a) (2020); *see also PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018) (interpreting the statute to require “a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition”).

Applying those standards, and upon considering the Petition, the Preliminary Response, and the evidence of record, we determine the information presented shows a reasonable likelihood that Petitioner would prevail in establishing the unpatentability of at least one of the challenged claims of the ’027 patent. Accordingly, we institute an *inter partes* review of

all challenged claims (i.e., 1–3, 5, 7–9, 11–13, and 15–22) of the '027 patent, based on the grounds asserted in the Petition.

II. BACKGROUND

A. *Related Matters*

The parties identify the following proceeding as a related matter involving the '027 patent: *Cerebrum Sensor Technologies, Inc. et al. v. Revvo Technologies, Inc.*, No. 1:24-cv-00245 (D. Del.). Pet. 1; Paper 7, 2.¹

B. *Real Parties-in-Interest*

Petitioner identifies itself, Revvo Technologies, Inc., as the real party-in-interest. Pet. 1. Patent Owner identifies itself, Tire Stickers LLC, as well as Cerebrum Sensor Technologies, Inc., as real parties-in-interest. Paper 7, 2.

C. *The '027 Patent*

The '027 patent is titled “Display Assemblies and Methods for Applying The Same To Vulcanized Rubber Articles” and relates to display assemblies constructed for attachment with a vulcanized rubber article to provide a desired display indicia. Ex. 1001, code (54), 1:62–64.

Figure 2 of the '027 patent is shown below.

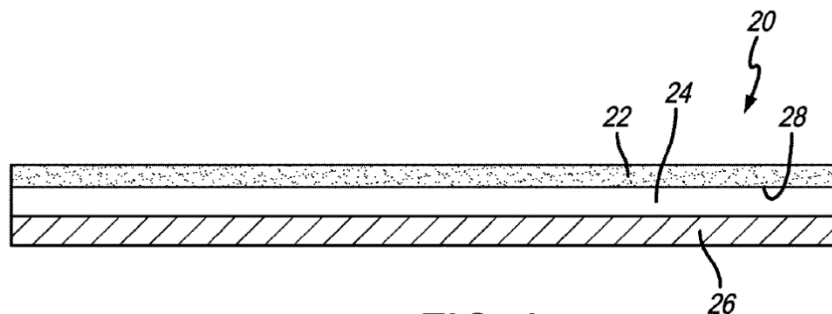


FIG. 2

¹ We note that Paper 7 lacks page numbers. We cite to pages of Paper 7 as if numbered consecutively, beginning with the cover page as page 1.

Figure 2, above, is a cross-sectional side view of a single display layer embodiment three-layer assembly 20. Ex. 1001, 2:58–59. Assembly 20 includes layer 22 as the outermost aesthetic layer which is vulcanized for a permanent bond along underside surface 28 to a shock absorbing barrier layer 24 layered with an adhesive layer 26 for permanently bonding to the vulcanized rubber article. *Id.* at 2:59–64.

Display layer 22 may be a single layer of elastomeric material that is colored, patterned, or textured to provide a desired display image or indicia viewable on the outer surface of the display assembly 20. *Id.* at 5:62–66. Elastomeric materials used to form display layer 22 include and are not limited to “vulcanized rubber, natural rubber, SBR, nitrile rubber, neoprene rubber, rubber based or elastomeric ink having properties of aesthetic appeal of functional use, high elongation, UV and chemical resistance and abrasion resistance, and combinations thereof.” *Id.* at 5:67–6:6.

The intermediate or barrier layer 24 is formed from a material capable of providing properties of “shock absorbance, elastomeric expansion and/or contraction properties compatible with the vulcanized rubber article that the display assembly is to be attached therewith.” *Id.* at 6:20–24. The ’027 patent explains that there is “a desired degree of conformity between the adjacent surfaces of the display layer and the outer surface of a vulcanized rubber article (so as to maximize the surface contact area between the display assemble and vulcanized rubber article).” *Id.* at 6:24–28. According to the ’027 patent, elastomeric materials used to form the intermediate layer 24 include and are not limited to “gum rubber, vulcanized natural rubber SBR, nitrile rubber, polyurethane, or comparable materials having properties of high elongation, conformity and chemical resistance to notable mold release agents common in

the vulcanized rubber of pneumatic tires, and combinations thereof.” *Id.* at 6:40–47.

Adhesive layer 26 may be formed from “a material capable of forming a chemically, heat-activated or otherwise permanent bonded attachment with the vulcanized rubber article.” *Id.* at 6:59–62. Heat-activated adhesive materials include “thermoplastic and thermoset adhesives, heat vulcanizing cements common in retread applications, water-based or solvent based polymer polyurethane adhesives, and combinations thereof.” *Id.* at 7:11–15. A bond formed under elevated temperatures may also include “some degree of elevated pressure being applied to the display assembly during adherence by the adhesive layer. *Id.* at 7:15–18. Forming a bond by chemical reaction instead of being heat activated uses materials including “chemical cements common in retread applications, cyanoacrylate, epoxies, rubber-based acrylic pressure sensitive adhesives and combinations thereof.” *Id.* at 7:27–31. This application may also call for some degree of elevated pressure being applied to the display assembly during adherence by the adhesive layer. *Id.* at 7:31–34.

D. The Challenged Claims

Petitioner challenges claims 1–3, 5, 7–9, 11–13, and 15–22. Pet. 1. Of the challenged claims, claims 1, 11, 15, and 19 are independent. Claim 1, reproduced below with Petitioner’s identifiers for the claim limitations in bold (see Pet. App. A i–iii), is illustrative of the claimed subject matter.

1.[pre] An assembly for attachment with a vulcanized rubber article comprising:

1.[a] an outer layer of elastomeric material having a visual feature; and

1.[b][i] an adhesive layer adhered to an interface surface of the outer layer,

1.[b][ii] wherein at least a portion of the outer layer adjacent the interface surface comprises a barrier material composition, and

1.[c] wherein the adhesive layer is formed from a material capable of chemically bonding with a surface of a vulcanized rubber article.

Ex. 1001, 15:20–29.

E. Evidence

Petitioner submits the following evidence:

Evidence	Exhibit No.
Declaration of Timothy Donley	1003
Bielicki et al., U.S. Patent No. 6,726,012 B2 (issued Apr. 27, 2004, filed Apr. 25, 2002) (“Bielicki”)	1004
“Know your Tires with Tire-Track,” www.tire-track.com , Sept. 2, 2009 (“Patch Rubber Brochure”)	1005
“Reduce your Tire Costs with the Tire-Track ID Unit,” www.tire-track.com , Mar. 4, 2011 (Tire-Track Brochure”)	1007
Brown et al., U.S. Patent No. 6,546,982 B1 (issued Apr. 15, 2003, filed July 29, 1999) (“Brown”)	1008
Wilson at al., U.S. Patent No. 7,009,506 B2 (issued Mar. 7, 2006, filed July 9, 2002) (“Wilson”)	1009
DiRocco et al., U.S. Patent No. 4,285,382 (issued Aug. 25, 1981, filed July 10, 1980) (“DiRocco”)	1010

F. Asserted Grounds

Petitioner asserts the following grounds of unpatentability:

Claim(s) Challenged	35 U.S.C. §²	Reference(s)/Basis
1, 5, 7–9, 11–13, 15–22	103	Wilson
12	103	Wilson, DiRocco
1–3, 5, 7	103	Bielicki

² The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. §§ 102, 103. Because the ’027 patent has an effective filing date after the effective date of the applicable AIA amendment, we refer to the AIA version of § 103.

Claim(s) Challenged	35 U.S.C. § ²	Reference(s)/Basis
1–3, 5, 7, 11–13, 15, 16	103	Bielicki, Patch Rubber Brochure, Tire-Track Brochure
7–9, 14, 16–22 ³	103	Bielicki, Patch Rubber Brochure, Tire-Track Brochure, Brown

III. PATENTABILITY ANALYSIS

A patent claim is unpatentable under 35 U.S.C. § 103 if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention 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) when in evidence, objective evidence of nonobviousness.⁴ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

“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 shifts to Patent Owner. See *Dynamic*

³ We understand Petitioner’s inclusion of claim 23 in the heading of Ground 5 in the “Identification of Challenge” on page 4 of the Petition and in the heading for Ground 5 on page 80 to be a typographical error, because claim 23 is not discussed in the body of the Petition.

⁴ Neither party relies on any objective evidence of obviousness or nonobviousness at this stage of the proceeding.

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

We organize our patentability analysis into four sections. First, we address the level of ordinary skill in the art. Second, we address claim construction. Third, we provide an overview of the asserted references. And fourth, taking account of the information presented, we consider whether the Petition satisfies the threshold requirement for instituting an *inter partes* review under 35 U.S.C. § 314(a).

A. *Level of Ordinary Skill in the Art*

We consider the asserted ground of unpatentability in view of the understanding of a person of ordinary skill in the art (“POSITA” or “POSA”). In assessing the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (quoting *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986)). “[O]ne or more factors may predominate.” *Id.*

Petitioner contends that a person of ordinary skill in the art would have “possessed an undergraduate degree in chemistry, polymers, materials science, chemical engineering (or related field) and one to two years of experience with constructing and manufacturing tires, tire patches, tire decals/stickers and/or the like.” Pet. 8 (citing Ex. 1003 ¶¶ 6–11). According to Petitioner, “Additional education could compensate for less practical experience. Conversely, additional practical experience could compensate for less education.” *Id.* Patent Owner does not provide an alternate definition, but, “Patent Owner does not acquiesce to, and reserves the right to address, [Petitioner’s] definition of a

POSA.” Prelim. Resp. 6 n.6.

Petitioner’s proposed definition appears to be consistent with the disclosure of the ’027 patent, and we adopt it for purposes of this Decision. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (explaining that the prior art itself may “reflect[] an appropriate level” of ordinary skill in the art) (quoting *Litton Indus. Prods., Inc. v. Solid State Sys. Corp.*, 755 F.2d 158, 163 (Fed. Cir. 1985)).

B. Claim Construction

In interpreting the claims of the ’027 patent, we “us[e] the same claim construction standard that would be used to construe the claim[s] in a civil action under 35 U.S.C. [§] 282(b).” *See* 37 C.F.R. § 42.100(b) (2020). The claim construction standard includes construing claims in accordance with the ordinary and customary meaning of such claims as would have been understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. *See id.*; *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–14 (Fed. Cir. 2005) (*en banc*).

Petitioner argues that Patent Owner proposed several claim constructions for the underlying district court litigation and Petitioner adopts those constructions “for the purposes of this proceeding.” We reproduce below Petitioner’s claim construction chart.

Claim Term	PO’s Proposed Claim Construction
“layer” (claim 1–4, 6, 9–11, 15, 18–22)	“at least one material disposed over”
“outer layer” (claims 1, 2, 4, 6, 11, 15, 19–23)	“at least one layer that is outermost”
“barrier material composition” / “material composition that acts as a barrier” (claims 1, 11, 15, 19)	“material composition that has properties of shock absorbance, elastomeric expansion and/or contraction”

Claim Term	PO's Proposed Claim Construction
“cavity” (claims 7–9, 16–20)	“a space for accommodating an element or object”
“elastomeric material” (claims 1, 11, 15, 19)	“rubbery material”
“display assembly” (claims 1, 11, 19)	“an assembly configured to provide a display indicia”
“visual feature” (claim 1)	“at least one visual display or a feature that is visually or otherwise detectable”

Pet. 8–9 (citing Ex. 1024; Ex. 1026, 1; Ex. 1003 ¶¶ 49–61).

In addition, “Petitioner applies the plain meaning of ‘cavity’ — i.e., an unfilled or hollowed-out space within a mass — solely for claims 7 and 16 in Grounds 3–4.” Pet. 9 (citing (Ex. 1055 (<https://www.merriamwebster.com/dictionary/cavity>); Ex. 1003 ¶¶ 58–61).

Patent Owner responds that “the Petition fails to explain why [Petitioner] is pursuing IPR institution based on claim constructions that [Petitioner] has contended are wrong in co-pending federal district court litigation.” Prelim. Resp. 1. Patent Owner, however, does not dispute the constructions.

Having considered the record, we determine that no express claim construction is necessary for any claim terms. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those 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)).

C. Prior Art

Before turning to Petitioner’s asserted grounds of unpatentability, we provide brief summaries of the asserted references.

1. *Bielicki (Ex. 1004)*

Bielicki is titled “Manufacturing a Tire Tracking Identification Unit.” *Ex. 1004*, code (54). *Bielicki* relates to “marking rubber articles” and specifically to a “laser-assisted method of cutting a selected pattern into a multi-layered workpiece, unit or patch, and to the resulting product itself.” *Id.* at 1:8–12. *Bielicki* discloses, “a method for manufacturing a weather and wear resistant rubber identification unit for a tire with a selected pattern on the unit.” *Id.* at 2:29–32. Figure 1 of *Bielicki*, reproduced below, shows the apparatus for forming the pattern.

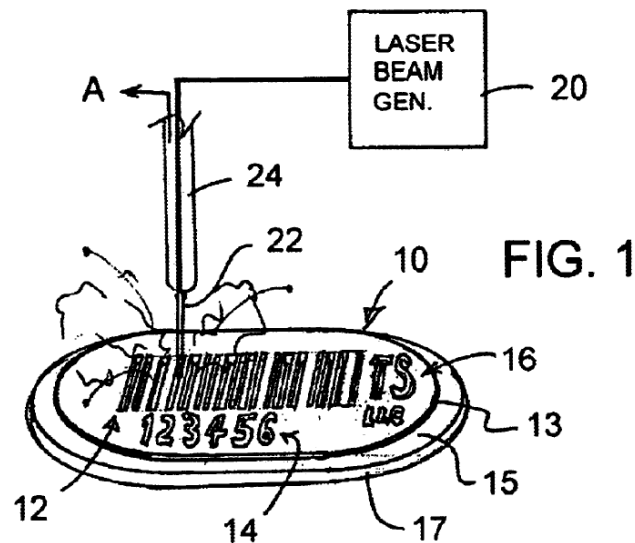


Figure 1 is a schematic illustration of the apparatus needed for performing the laser cutting step. *Ex. 1004*, 3:11–12. The article being worked on is “multi-layered rubber ID unit 10 which has an outer layer 13 of one color, e.g. white, and at least one inner layer 15 of a contrasting color, e.g. black,” and “another bottom layer 17 beneath inner layer 15, which acts as a bonding layer between the ID unit and a tire.” *Id.* at 3:30–35. *Bielicki* discloses that bottom layer 17 is a semi-cured gum rubber. *Id.* at 5:26–27. *Bielicki* also discloses that ID unit 10 may also have other layers between inner layer 15 and bottom

layer 17 which “assist in blocking active oxidants in tires from blackening or browning the white outer layer 13.” *Id.* at 5:30–33.

2. Patch Rubber Brochure (Ex. 1005)

The Patch Rubber Brochure is titled “Know Your Tires with Tire-Track.” Ex. 1005, 1. The Patch Rubber Brochure is distributed by Patch Rubber Companies/Myers Industries. *Id.* at 4. The Patch Rubber Brochure provides steps for applying the Tire-Track ID Unit to a tire. *Id.* The steps include: “Apply the Tire-Track ID Unit just like a repair patch...No Heat Required!” *Id.* It instructs users to: “Buff the tire surface;” “Brush on cement;” and “Apply the Tire-Track ID Unit.” *Id.*

3. Tire-Track Brochure (Ex. 1007)

The Tire-Track Brochure is titled “Reduce Your Tire Costs with the Tire-Track ID Unit.” Ex. 1007, 1. The Tire-Track Brochure is distributed by Tire-Track, LLC. *Id.* The Tire-Track Brochure describes “a multi-layered black & white rubber label specifically designed for tires” wherein “[t]he bar code and other information is engraved through the white rubber to expose the contrasting black rubber.” *Id.* at 2 (emphasis omitted). An exemplary unit, the CVL-ID UNIT, “is specifically designed for tires and is constructed similar to a repair patch. It is vulcanized to the tire ‘just like a patch’ with cold-cure vulcanizing cement, or can be installed during the retread process.” *Id.* at 3. The Tire-Track Brochure further discloses that “[t]he ID UNIT(S) are permanent, all-rubber bar code & RFID (optional) labels,” wherein the RFID technology is “an industry approved RFID chip in either ID unit.” *Id.* at 2–3 (emphasis omitted).

4. *Brown (Ex. 1008)*

Brown is titled “Mounting Transponders in Pneumatic Tires.” Ex. 1008, code (54). Brown “relates to the mounting of electronic devices such as transponders and antennas in pneumatic tires, and to the coupling of transponders to antennas in pneumatic tires.” *Id.* at 1:12–15. Figure 3A, reproduced below, depicts an exemplary device mounted to a tire.

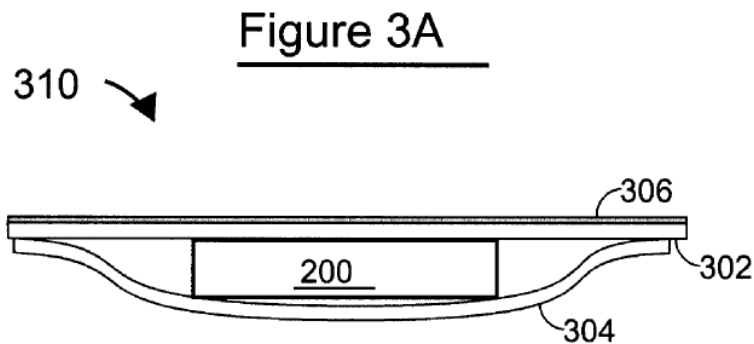


Figure 3A is a side cross-sectional view of a technique for preparing a transponder module for mounting to an inner surface of a pneumatic tire. Ex. 1008, 12:57–59. In Figure 3A, transponder module 200 is “sandwiched” between two thin sheets 302 and 304, which may be rubber sheets, which are pressed to remove air bubbles from between the sheets and are sealed around their edges. *Id.* at 17:58–61. Adhesive 306 is disposed on the top (as viewed) surface of the sheet 302, so that patch 310 is ready to be mounted to an inside surface of a pneumatic tire. *Id.* at 17:62–65.

5. *Wilson (Ex. 1009)*

Wilson is titled “Electronic Monitoring Device and Patch Assembly.” Ex. 1009, code (54). Wilson relates to “an electronic monitoring device and patch assembly wherein the electronic monitoring device is removably attached to the patch so that the electronic monitoring device may be repeatedly removed

from and reattached to the patch.” *Id.* at 1:22–25. Figure 1 of Wilson, reproduced below, depicts an exemplary patch.

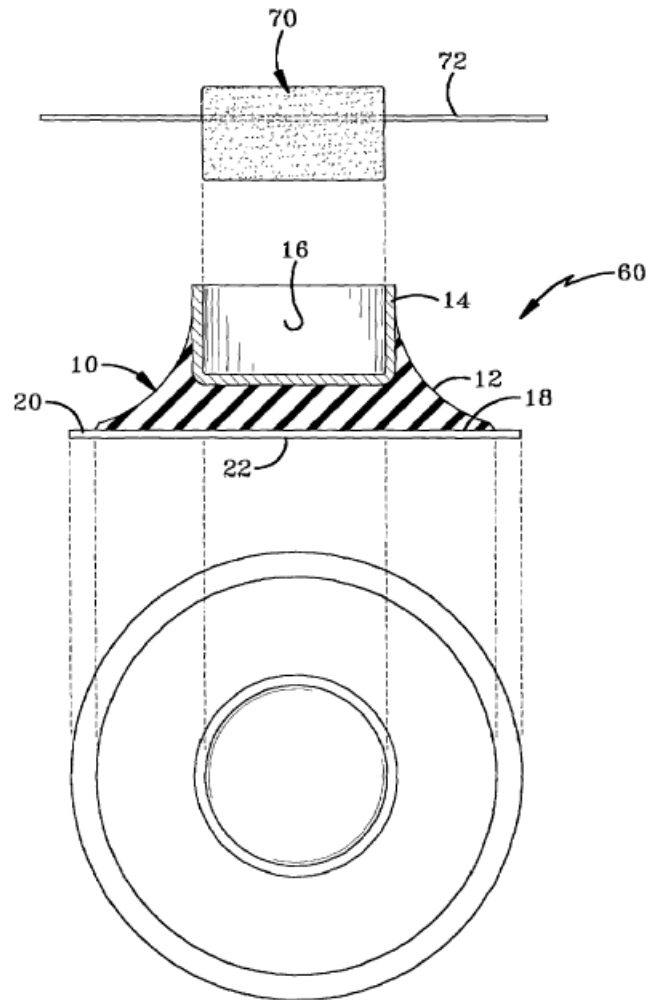


FIG-1

Figure 1 is an exploded cross-sectional view of a patch including a housing and cavity for a tag assembly. Ex. 1009, 2:38–40. Vulcanized patch 10 of Figure 1 includes first side 12 which includes housing 14 with cavity 16 to house a monitoring device (“tag assembly 70”) and second opposite side 18 to which a dual cure bonding layer 20 is permanently affixed by a non-curing cement to form patch assembly 60. *Id.* at 3:35–45, 4:1–10. Wilson’s vulcanized rubber patch 10 “may be a rubber selected from the group consisting

of Ethylene Propylene Diene Monomer (EPDM) rubber, butyl rubber, natural rubber, neoprene and mixtures thereof.” *Id.* at 3:49–52. Other embodiments include “a mixture of chlorobutyl rubber and natural rubber” or “a mixture of Styrene-Butadiene rubber (SBR) and natural rubber.” *Id.* at 3:52–55.

Wilson discloses that dual cure bonding layer 20 “may be assembled to the patch at any time following vulcanization of the patch and prior to assembly of the patch assembly to the tire innerliner.” *Id.* at 4:1–6. An “important feature of the dual cure bonding layer is that it can be chemically activated and cured, without the need for heating to an elevated temperature.” *Id.* at 4:12–15. Wilson explains that “[t]he dual cure bonding layer may be any material which can be activated and cured to the vulcanized rubber of the tire innerliner and the vulcanized patch,” but preferably “the dual cure bonding rubber is natural rubber.” *Id.* at 4:16–19.

Wilson discloses that patch assembly 60 is for attachment to a vulcanized tire, as depicted in Figure 2, reproduced below.

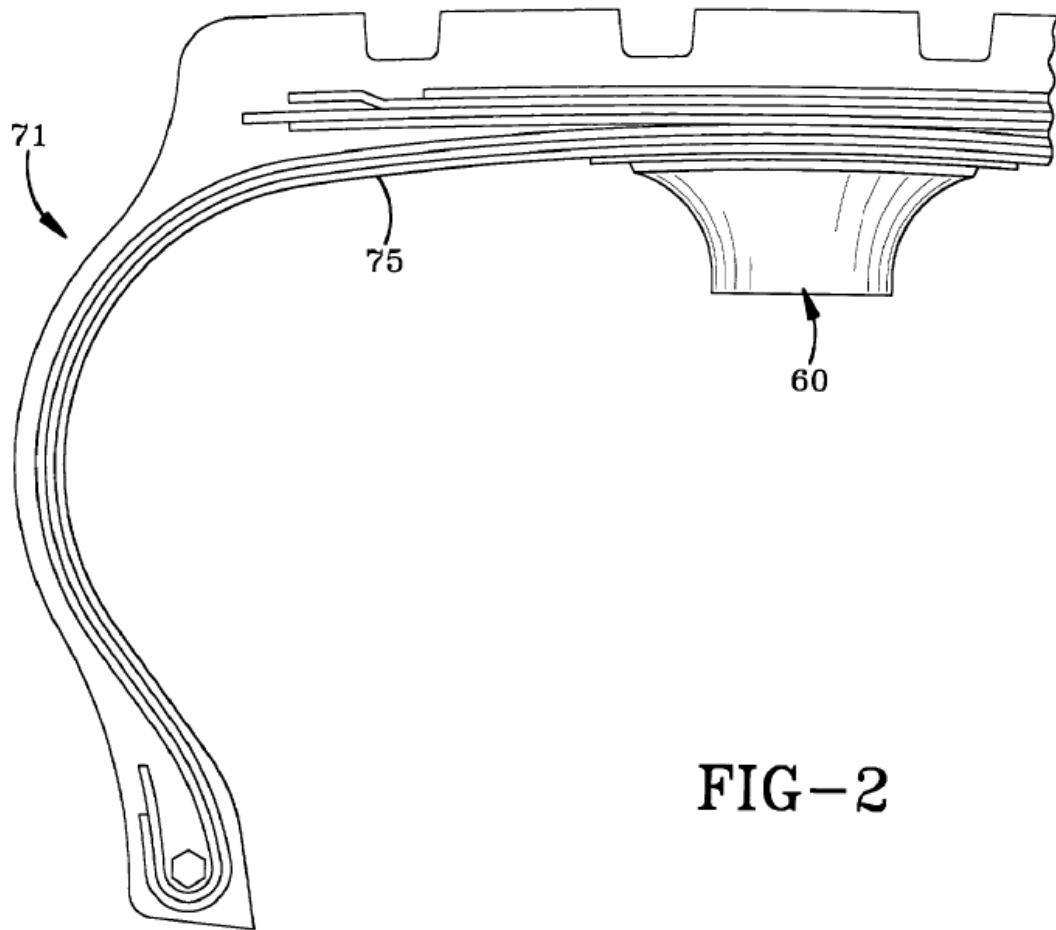


FIG-2

Figure 2 is a cross-sectional view of the patch attached to the innerliner of a tire. Ex. 1009, 2:41–42. In particular, patch assembly 60 is assembled to inner liner 75 of tire 71 by a process wherein: “[a]ctivating cement is first applied to second side 22 of dual cure bonding layer 20,” the patch assembly is “stitched to the innerliner of the vulcanized tire,” and then “the patch assembly/tire assembly is allowed to cure for a sufficient time and temperature to form a strong bond between the tire and the patch assembly.” *Id.* at 4:27–32.

6. DiRocco (Ex. 1010)

DiRocco is titled “Tire Repair Patch.” Ex. 1010, code (54). DiRocco relates “to a tire patch construction which has the flexibility and resilience to flex with the tire in operation and at the same time can be built without the

formation of air spaces.” Ex. 1010, 1:34–37. Figure 2 of DiRocco is reproduced below.

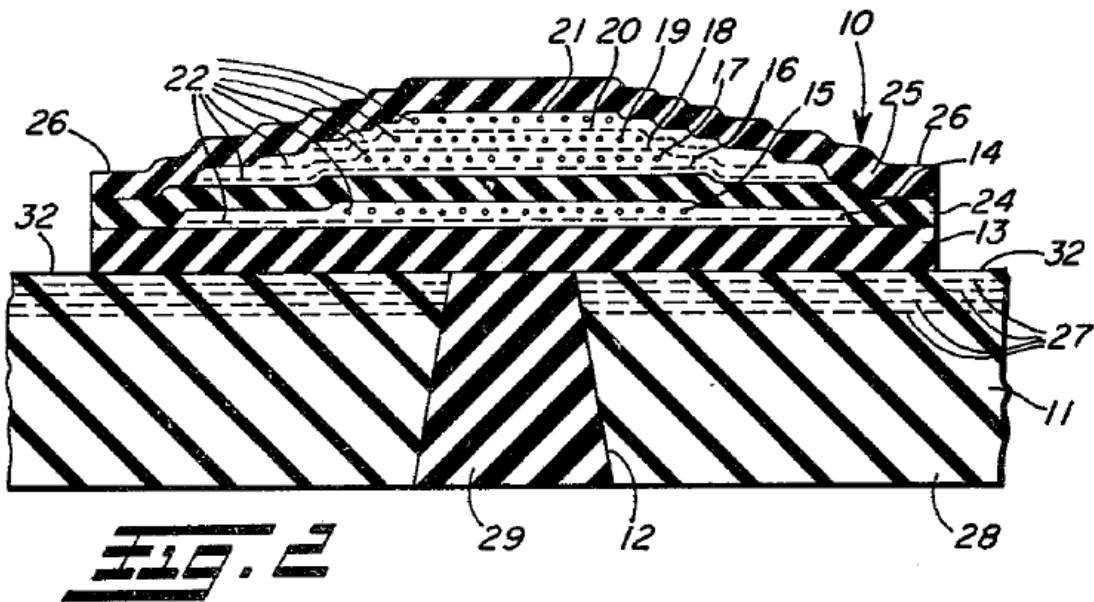


Figure 2 is an enlarged fragmentary sectional view of the inside of a tire showing the tire repair patch bonded to the inner surface of the tire. Ex. 1010, 2:3–7. Patch 10 is a laminated construction including base cushion gum layer 13, plies 14–21 of reinforcing cords 22, intermediate cushion gum layer 24, and a top cushion gum layer 25. DiRocco explains that application of patch 10 to tire 11 “follows the procedure well known to those skilled in the art wherein an inner surface 32 of the tire 10 around the injury 12 is cleaned and buffed.” *Id.* at 4:3–6. “A patch 10 of an appropriate size is selected and the repair finished by using either the heat vulcanizing method, the semicure method or the chemical cure method.” *Id.* at 4:6–9.

D. Alleged Ground of Unpatentability Over Wilson

Petitioner contends that claims 1, 5, 7–9, 11–13, and 15–22 of the '027 patent are unpatentable under 35 U.S.C. § 103 as obvious over Wilson. Pet. 14–45. Patent Owner argues that Wilson does not disclose or suggest

limitations 1[b][ii], 11[d], 15[e], and 19[d], the “barrier material composition.” Prelim. Resp. 22–33.

1. *Claim 1*

- a) *1[pre] “An assembly for attachment with a vulcanized rubber article comprising:”*

Petitioner contends that, to the extent the preamble is limiting, Wilson discloses this limitation. Pet. 14–16 (citing Ex. 1009, 3:35–42, 4:1–10, 4:26–27; Ex. 1003 ¶¶ 97–100).

At this time, Patent Owner does not dispute that Wilson discloses the preamble. See Prelim. Resp. 21–22 (arguing that the prior art fails to disclose limitations 1[c], 1[e], 1[f], and 1[l] only). At this stage of the proceeding, based on Petitioner’s arguments and evidence, we find that, to the extent the preamble is limiting, Petitioner has shown sufficiently that Wilson discloses the preamble.

- b) *1[a]: an outer layer of elastomeric material having a visual feature; and*

Petitioner contends that Wilson discloses and/or renders obvious this limitation. Pet. 16–23 (citing Ex. 1009, 3:35–67, 4:1–3; Ex. 1001, 5:66–6:6, 6:17–44, 8:26–27, Figs. 1, 2, 11; Ex. 1003 ¶¶ 101–109).

At this time, Patent Owner does not dispute that Wilson discloses limitation 1[a]. See Prelim Resp. 21–22. At this stage of the proceeding, based on Petitioner’s arguments and evidence, we find that Petitioner has shown sufficiently that Wilson discloses this limitation.

- c) *1[b][i]: an adhesive layer adhered to an interface surface of the outer layer,*

Petitioner contends that Wilson discloses and/or renders obvious this limitation. Pet. 23–25 (citing Ex. 1009, 4:1–37; Ex. 1003 ¶¶ 110–113; Ex. 1001, 6:59–7:20; Ex. 1025, 12; Ex. 1020, 3; Ex. 1027, 72).

At this time, Patent Owner does not dispute that Wilson discloses limitation 1[b][i]. See Prelim Resp. 21–22. At this stage of the proceeding, based on Petitioner’s arguments and evidence, we find that Petitioner has shown sufficiently that Wilson discloses this limitation.

- d) *1[b][ii]: wherein at least a portion of the outer layer adjacent the interface surface comprises a barrier material composition, and*

Petitioner contends that Wilson discloses this limitation. Pet. 25–27 (citing Ex. 1009, 3:49–55; Ex. 1003 ¶¶ 56, 114–119; Ex. 1001, 6:11–58, 7:47–60, Fig. 2; Ex. 1024, Ex. A, at 3; Ex. 1025, 3; Ex. 1012, 4:28–30).

Patent Owner argues that Petitioner has failed to show that Wilson discloses this limitation. See Prelim. Resp. 22–33. In particular, Patent Owner asserts that Petitioner fails to show Wilson discloses a “barrier material composition.” *Id.* Patent Owner contends that Petitioner ignores portions of Wilson that undermine Petitioner’s contention that Wilson discloses a “barrier material composition.” *Id.* at 23. In particular, Patent Owner points to a portion of Wilson that explains that the housing for sensors of Wilson “may be fabricated from the same material as protective body 406 or another material **more rigid than the material of patch 402.**” *Id.* at 23–24 (citing Ex. 1009, 9:16–21). Based on this disclosure, Patent Owner surmises Wilson’s patch must be “rigid” because the housing is described as “more rigid.” *Id.* at 24. Patent Owner also identifies disclosure in Wilson that explains that the patch is “approximat[es] the contour” of an interliner of a tire. *Id.* (citing Ex. 1009,

3:35–67). Again, Patent Owner asserts that this disclosure further supports its contention that Wilson’s patch is rigid and cannot meet the construction for “barrier material composition” of “material composition that has properties of shock absorbance, elastomeric expansion and/or contraction.” *Id.* at 25.

Finally, Patent Owner cites to disclosure in Wilson that Wilson’s walls have “sufficient elasticity and extensibility such that opening 212 may be stretched open.” *Id.* at 25–26 (citing Ex. 1009, 7:36–42, 8:26–30). Patent Owner argues that this wall discussion shows that “patch base remains in the rigid contour configuration although upright walls may have sufficient elasticity.” *Id.*

We disagree with Patent Owner’s contentions that these disclosures indicate that Wilson’s patch would not meet the construction of “barrier material composition.” None of these disclosures even suggests that the base of Wilson’s patch is rigid as Patent Owner suggests. To begin with, the fact that the housing is “more rigid” provides no information about the absolute rigidity of the patch. *See* Ex. 1009, 9:16–21. As for the disclosure that the patch is contoured (*id.* at 3:35–67), Patent Owner provides only attorney argument to support its contention that the contour demonstrates that Wilson’s patch must be so rigid that it cannot be meet the claim limitation. In contrast, Petitioner demonstrates that Wilson discloses using the exact same materials described in the challenged patent (*see* Ex. 1001, 6:33–58 (noting “[e]lastomeric materials useful for forming the intermediate layer 24 include but are not limited to gum rubber, vulcanized natural rubber SBR . . . or comparable materials”); Ex. 1009, 3:49–55 (noting the patch may be constructed from natural rubber (NR), a preferred mixture of chlorobutyl rubber and natural rubber (CR/NR), or a preferred mixture of SBR and natural rubber (SBR/NR)), and provides detailed testimony from its expert to support its contentions (*see* Ex. 1003 ¶¶ 114–119). On the current record, we find

Petitioner's reasoning and evidence to be persuasive, and find that Petitioner has shown sufficiently that Willson discloses or teaches this limitation.

- e) *1[c]: wherein the adhesive layer is formed from a material capable of chemically bonding with a surface of a vulcanized rubber article.*

Petitioner contends that Wilson discloses this limitation. Pet. 28–29 (citing Ex. 1009, 4:12–19, 4:27–32; Ex. 1003 ¶¶ 120–122; Ex. 1025, 20, 46).

At this time, Patent Owner does not dispute that Wilson discloses limitation 1[c]. See Prelim Resp. 21–22. At this stage of the proceeding, based on Petitioner's arguments and evidence, we find that Petitioner has shown sufficiently that Wilson discloses this limitation.

- f) *Summary as to Claim 1*

We find that Petitioner has shown sufficiently that Wilson accounts for all the limitations of claim 1. Patent Owner does not raise any secondary considerations of nonobviousness at this stage of the proceeding. Thus, we conclude that Petitioner has shown a reasonable likelihood of prevailing in showing that claim 1 would have been obvious over Wilson.

2. Claims 5, 7–9, 11–13, 15–22

Patent Owner does not raise any separate arguments regarding claims 5, 7–9, 11–13, and 15–22 other than those we have considered above with respect to claim 1. See Prelim. Resp. 22 (explaining that Petitioner's "obviousness conclusions set forth in Grounds 1–5 with respect to the dependent claims also fails for at least the reasons set forth with respect to independent[] Claim[] 1"). On the current record, we do not find Patent Owner's arguments persuasive, as explained above. We have reviewed Petitioner's contentions regarding claims 5, 7–9, 11–13, and 15–22 (Pet. 30–45), and determine that Petitioner

shows a reasonable likelihood of prevailing with respect to the obviousness of claims 5, 7–9, 11–13, and 15–22 over Wilson.

E. Alleged Ground of Unpatentability Over Wilson and DiRocco

Petitioner contends that claim 12 of the '027 patent is unpatentable under 35 U.S.C. § 103 as obvious over Wilson and DiRocco. Pet. 53–58.

Patent Owner argues that Petitioner's "obviousness conclusions set forth in Grounds 1–5 with respect to the dependent claims also fails for at least the reasons set forth with respect to independent[] Claim[] 1." Prelim. Resp. 22. On the current record, we do not find Patent Owner's arguments persuasive, as explained above. We have reviewed Petitioner's contentions regarding claim 12 (Pet. 45–46), and determine that Petitioner shows a reasonable likelihood of prevailing with respect to the obviousness of claim 12 over Wilson and DiRocco.

F. Alleged Ground of Unpatentability Over Bielicki

Petitioner contends that claims 1–3, 5, and 7 of the '027 patent are unpatentable under 35 U.S.C. § 103 as obvious over Bielicki. Pet. 53–64. Patent Owner argues that Bielicki do not disclose or suggest limitations 1[b][ii], 11[d], 15[e], and 19[d], the "barrier material composition." Prelim. Resp. 22, 34–41. In particular, Patent Owner argues that "Bielicki merely mentions an outer layer with high 'hardness' and an inner layer with lower 'hardness' for laser ablation purposes," and that this "has nothing to do" with a "barrier material composition," as claimed. *Id.* at 35. We disagree. On this record, we find Petitioner's evidence and reasoning, supported by the testimony of sufficient to show a reasonable likelihood that Bielicki's natural rubber inner layer teaches or suggests this limitation. See Pet. 59–60 (citing Ex. 1003 ¶¶ 199–206; Ex. 1004, 4:44–5:2). Based on Patent Owner's own infringement

analysis (Ex. 1025, 3), we disagree with Patent Owner’s contention that “actual durometer numbers” or that Petitioner has “ignored” portions of Bielicki. See Prelim. Resp. 36–37. Patent Owner will be free to develop the record on this point during trial. We have reviewed the remainder of Petitioner’s contentions for this ground, which at this time Patent Owner does not dispute, and find that they are sufficient to show a reasonable likelihood of prevailing that claims 1–3, 5, and 7 would have been obvious over Bielicki.

G. Alleged Ground of Unpatentability Over Bielicki, Patch Rubber Brochure, and Tire-Track Brochure

Petitioner contends that claims 1–3, 5, 7, 11–13, 15, and 16 of the ’027 patent are unpatentable under 35 U.S.C. § 103 as obvious over Bielicki, Patch Rubber Brochure, and Tire-Track Brochure. Pet. 65–80. Patent Owner argues that Bielicki does not disclose or suggest limitations 1[b][ii], 11[d], 15[e], and 19[d], the “barrier material composition.” Prelim. Resp. 22, 34–41. According to Patent Owner, because the Petition only relies on Bielicki for these limitations, the addition of Patch Rubber Brochure and Tire-Track Brochure does not render obvious these limitations. *Id.* at 42. On the current record, we do not find Patent Owner’s arguments persuasive, as explained above. We have reviewed Petitioner’s contentions regarding claims 1–3, 5, 7, 11–13, 15, and 16 (Pet. 65–80), and determine that Petitioner shows a reasonable likelihood of prevailing with respect to the obviousness of claims 1–3, 5, 7, 11–13, 15, and 16 over Bielicki, Patch Rubber Brochure, and Tire-Track Brochure.

H. Alleged Ground of Unpatentability Over Bielicki, Patch Rubber Brochure, Tire-Track Brochure, and Brown

Petitioner contends that claims 7–9, 14, and 16–22 of the ’027 patent are unpatentable under 35 U.S.C. § 103 as obvious over Bielicki, Patch Rubber

Brochure, Tire-Track Brochure, and Brown. Pet. 80–86. Patent Owner argues that Bielicki does not disclose or suggest limitations 1[b][ii], 11[d], 15[e], and 19[d], the “barrier material composition.” Prelim. Resp. 22, 34–41. According to Patent Owner, because the Petition only relies on Bielicki for these limitations, the addition of Patch Rubber Brochure, Tire-Track Brochure, and Brown does not render obvious claims 7–9, 14, and 16–22. *Id.* at 42. On the current record, we do not find Patent Owner’s arguments persuasive, as explained above. We have reviewed Petitioner’s contentions regarding claims 7–9, 14, and 16–22 (Pet. 80–86), and determine that Petitioner shows a reasonable likelihood of prevailing with respect to the obviousness of claims 7–9, 14, and 16–22 over Bielicki, Patch Rubber Brochure, Tire-Track Brochure, and Brown.

III. CONCLUSION

For the foregoing reasons, we conclude that the information presented in the Petition establishes a reasonable likelihood that Petitioner would prevail in showing that at least one of claims 1–3, 5, 7–9, 11–13, and 15–22 of the ’027 patent would have been unpatentable. Our determination at this stage of the proceeding is based on the evidentiary record currently before us. This decision to institute trial is not a final decision as to patentability of any claim for which *inter partes* review has been instituted. Our final decision will be based on the full record developed during trial.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–3, 5, 7–9, 11–13, and 15–22 of the ’027 patent is hereby instituted on all grounds of unpatentability set forth in the Petition; and

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FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial commencing on the entry date of this decision.

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