

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

KRANOS CORPORATION,
Petitioner,

v.

RIDDELL, INC.,
Patent Owner.

Case IPR2016-01646
Patent 8,528,118 C1

Before PHILLIP J. KAUFFMAN, BARRY L. GROSSMAN, and
JAMES J. MAYBERRY, *Administrative Patent Judges*.

MAYBERRY, *Administrative Patent Judge*.

SUPPLEMENTAL
FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

Petitioner, Kranos Corp.¹ (“Kranos”), filed a Petition (Paper 1, “Pet.”) requesting *inter partes* review of claims 1–7, 11–13, 25–28, 30, and 32–37 of U.S. Patent No. 8,528,118 C1 (Ex. 1001, the “’118 patent”). Patent Owner, Riddell, Inc. (“Riddell”), filed a Preliminary Response (Paper 8, “Prelim. Resp.”) to the Petition. In our Decision on Institution, we instituted trial as to claims 1, 2, 5, 11, 12, 25, 27, 28, 30, 32–35, and 37 of the ’118 patent with respect to four grounds of unpatentability. Paper 10, 70–71 (“Dec. on Inst.”).² In our DI, we held that Kranos did not establish a reasonable likelihood of prevailing on other, non-instituted claims and grounds. See Dec. on Inst. 30–31, 32–34, 34–35, 47, 55–56, 65.

After we instituted trial, Riddell filed a Patent Owner Response. Paper 18 (“PO Resp.”). Kranos filed a Reply to Riddell’s Patent Owner Response. Paper 19 (“Pet. Reply”). Oral hearing was conducted for this proceeding on November 7, 2017, and the record contains a transcript of the hearing. Paper 29 (“Tr.”). At trial, Kranos relies on the Declaration testimony of Mr. Jamison Float. Ex. 1013. Riddell relies on the Declaration testimony of Mr. Nicholas Shewchenko. Ex. 2005.

After trial, we issued a Final Written Decision (“Final Wrtn. Dec.”), concluding that Kranos had established, by a preponderance of the evidence, that claims 1, 11, 12, 25, 28, 30, 33–35, and 37 of the ’118 patent are unpatentable, but that Kranos had not established that claims 2, 5, 27, 30, and 32 are unpatentable. Paper 30, 83. Riddell appealed. Paper 31.

¹ Kranos indicates that it is doing business as Schutt Sports. Pet. 2.

² We denied Kranos’s Request for Rehearing as to certain claims and grounds for which we did not institute trial. Paper 14.

On October 16, 2018, the Federal Circuit granted Kranos’s unopposed motion to terminate the appeal in IPR2016-01646 and remand the proceeding, in light of *SAS Institute Inc. v. Iancu*, 138 S. Ct. 1348 (2018), and the Director’s *Guidance on the Impact of SAS on AIA Trial Proceedings*, for us to address claims and grounds that we had not instituted.³ In response, we modified our Decision on Institution to institute trial for all challenged claims and all grounds. Paper 32, 3 (the “November 9, 2018, Order”). We ordered briefing on those claims and grounds added to the trial in the November 9, 2018, Order. See Paper 32, 3–7.

Subsequently, Kranos filed a motion for partial adverse judgment as to certain of the claims added to trial by our November 9, 2018, Order. Paper 33. Kranos then filed a Supplemental Brief (“Pet. Supp. Br.”) to address matters that Kranos believed the Board misapprehended or overlooked in its initial institution decision with respect to the added claims and grounds. Paper 34. Riddell filed a Supplemental Response (“PO Supp. Resp.”). Paper 37. Kranos filed a Supplemental Reply (Paper 38, “Pet. Supp. Reply”) to that response and Riddell filed a Sur-Reply (Paper 41, “PO Sur-Reply”) to the Supplemental Reply.

Riddell filed a motion to exclude certain evidence from this proceeding and IPR2016-01650.⁴ Paper 42. Kranos filed an opposition to the motion (Paper 44) and Riddell filed a reply to that opposition (Paper 46).

³ Available on line at <https://www.uspto.gov/patents-application-process/patent-trial-and-appeal-board/trials/guidance-impact-sas-aia-trial>.

⁴ The relation to this proceeding is explained in the next section.

We conducted a joint supplemental oral hearing on April 16, 2019, for this proceeding and IPR2016-01650 and the record contains a transcript of the hearing. Paper 49 (“Supp. Tr.”).

The Board has jurisdiction under 35 U.S.C. § 6. We issue this Supplemental Final Written Decision pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73 in light of the Federal Circuit’s remand and the Supreme Court’s decision in *SAS Institute Inc.* This Supplemental Final Written Decision addresses only those claims and grounds added to the trial in our November 9, 2018, Order. The combination of this Supplemental Final Written Decision and our Final Written Decision (Paper 30) addresses all claims and grounds asserted in the Petition.

In this Supplemental Final Written Decision, we determine that Kranos has not demonstrated, by a preponderance of the evidence, that any of the claims addressed herein are unpatentable.

A. Related Matters

The parties indicate that the ’118 patent is related to two pending district court proceedings in the United States District Court for the Northern District of Illinois, one styled *Riddell, Inc. v. Kranos Corp.*, Case No. 1:16-cv-4496, and the other styled *Riddell, Inc. v. Xenith, LLC*, Case No. 1:16-cv-04498. Pet. 2; Paper 7, 2. Further, the parties indicate that related U.S. Patent No. 8,938,818 B2 is the subject of a petition for *inter partes* review with the Patent Trial and Appeal Board, IPR2016-01650. Pet. 2, Paper 7, 3. Riddell further indicates that U.S. Patent Application Nos. 14/022,011, filed on September 9, 2013, and 14/605,765, filed on January 26, 2015, are

pending before the U.S. Patent and Trademark Office and claim a common priority benefit with the '118 patent. Paper 7, 3.

B. The '118 Patent

The '118 patent, titled “Sports Helmet,” issued September 10, 2013, with claims 1–29. Ex. 1001, (54), (45), 14:17–29. Following an *ex parte* reexamination, claims 1, 5, 13, 14, 17, 19–25, and 29 were determined to be patentable as amended in that proceeding, with claims 2–4, 6–12, 15, 16, 18, and 26–28 determined patentable as they depend from an amended claim. Ex. 1001, 24, 1:17–20.⁵ New claims 30–37 were added in the *ex parte* reexamination proceeding. *Id.* at 24, 1:21–22.

The '118 patent is generally directed to helmets for football, lacrosse, hockey, or baseball. Ex. 1001, 1:19–20. Figure 1 of the '118 patent depicts an embodiment of the '118 patent and is reproduced below.

⁵ Exhibit 1001 provides the Reexamination Certificate for *ex parte* reexamination no. 90/012,985 at pages 23–25. When citing to the Reexamination Certificate, we cite to the page number of Exhibit 1 and the column and line number range on that page, separated by a colon.

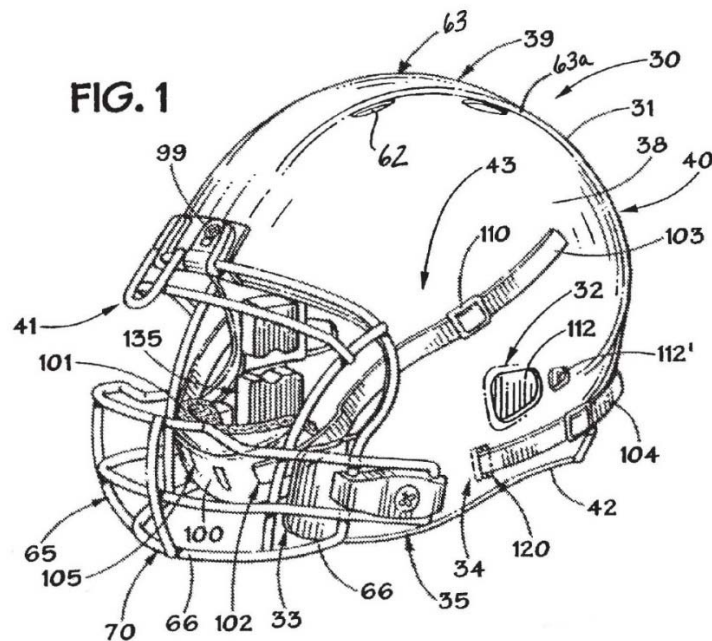
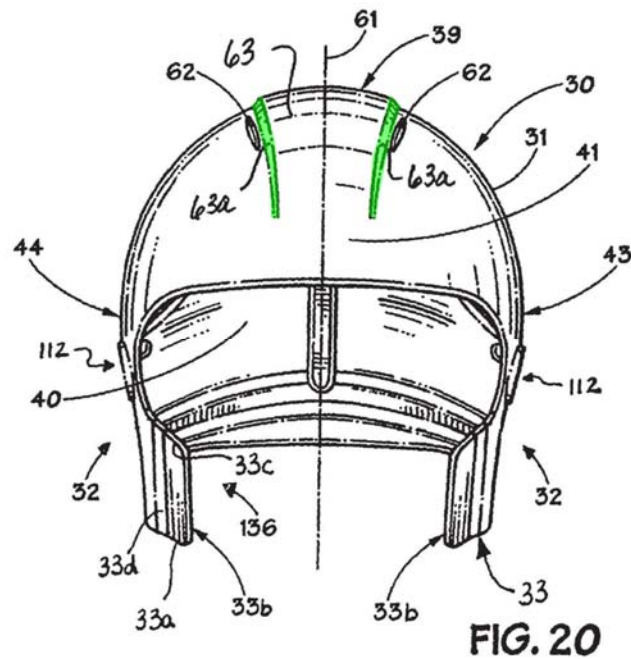
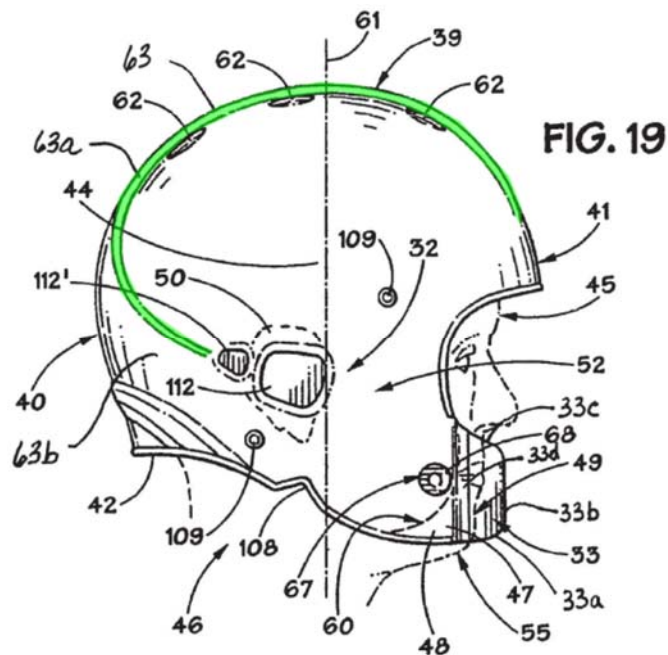


Figure 1 depicts “a perspective view of an embodiment of a sports helmet.” Ex. 1001, 3:64–65. Helmet 30 includes outer shell 31, which is preferably made of a plastic material, includes crown region 39, back or rear region 40, and front region 41. *Id.* at 4:59–64, 5:1–4. Helmet 30 includes side regions 43, 44 with ear flaps 32, with each ear flap 32 including ear opening 112. *Id.* at 5:15–20, 9:40–41. Connected to helmet 30 is face guard 65 and chin protector 100. *Id.* at 6:50–51, 9:4–6.

Helmet 30 also includes raised central band 63, defined by opposed side walls 63a. Ex. 1001, 6:16–21. Helmet 30 of Figure 1 includes two vent openings 62, positioned adjacent side wall 63a, which have an elongated shape. *Id.* at 6:8–11. In the embodiment of Figure 1, raised central band 63 does not include any vent openings.

Annotated versions of Figures 19 and 20 of the ’118 patent are reproduced below.



Figures 19 and 20 present side and front views, respectively, of helmet 30 of Figure 1. Green highlighting emphasizes opposed side walls 63a of raised central band 63. As seen in annotated Figure 19, side wall 63a has a curvilinear shape and one end terminates near ear flap 32. As seen in Figure 20, vent openings 62 are located on either side of raised central band

63. Also depicted in Figure 20, the front extent of side walls 63a, that is, the end of side walls 63a located in front region 41 of helmet 30, do not converge.

C. Asserted Grounds and Identified Claims

This Supplemental Final Written Decision is directed to the following grounds and claims added to trial in our November 9, 2018, Order⁶:

References	Basis⁷	Claims Challenged
Sears	35 U.S.C. § 102(b)	13
Rappleyea	35 U.S.C. § 102(b)	1, 2, 5, 11, 13, and 30
Zeller	35 U.S.C. § 102(b)	1, 2, 5, 11, 13, 25, 27, 30, and 32
Sears, Rappleyea, or Monica and Halstead (6 grounds total) ⁸	35 U.S.C. § 103(a)	36
Sears or Rappleyea and Ispas (two grounds total)	35 U.S.C. § 103(a)	3, 4, 6, 7, and 26

Independent claim 1 is representative of the claims addressed in this Decision and is reproduced below:

1. A football helmet comprising:
a plastic shell configured to receive a head of a wearer of the helmet, the shell having:

⁶ This chart summarizes the claims and grounds for which our Decision on Institution concluded that Kranos had not established a reasonable likelihood of prevailing.

⁷ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 296–307 (2011), took effect on September 16, 2012. Because the application for the patent at issue in this proceeding has an effective filing date before that date, we refer to the pre-AIA versions of the statutes.

⁸ The Petition presented obviousness positions for Sears, Rappleyea, or Monica as modified by Halstead and Halstead, as modified by Sears, Rappleyea, or Monica. See Pet. 4, 43–56.

a front region,
a crown region,
a rear region,
two side regions wherein each side region has an
ear flap with an ear opening,
a raised central band integrally formed as part of
the shell and extending across the crown region to the rear
region,
a first plurality of vent openings formed in the
shell outside of the raised central band, wherein the first
plurality of vent openings are aligned, and positioned along a
first side of the raised central band; and
a chin strap assembly that releasably secures the helmet
to the wearer.

Ex. 1001, 24, 1:24–40 (amendment notations omitted).

D. The Prior Art

The prior art addressed in this Decision is listed below.

Sears	Sears, “Wish Book for the 1971 Christmas Season”	1971	Ex. 1004
Zeller	US 2,525,389	Oct. 10, 1950	Ex. 1005
Rappleyea	US 3,729,744	May 1, 1973	Ex. 1006
Monica	US 5,732,414	Mar. 31, 1998	Ex. 1007
Halstead	US 6,219,850 B1	Apr. 24, 2001	Ex. 1008
Ispas	US Des. 230,911	Mar. 26, 1974	Ex. 1009

II. ANALYSIS

A. Motion for Partial Adverse Judgment

Kranos filed a motion for partial adverse judgment with respect to certain claims and grounds added to the trial in our November 9, 2018, Order. Paper 33. In the motion, Kranos “requests adverse judgment as to . . . [c]laims 3, 4, 7, 13, and 36.” *Id.* at 2. The motion continues that claims

6 and 26 remain in this proceeding for the grounds of “[o]bviousness over each of Sears or Rappleyea in combination with Ispas.” *Id.*

As to claims 3, 4, 7, 13, and 36, Kranos’s motion is *granted*. Accordingly, we will enter the following judgment as to those claims: (1) claim 13 is not proven unpatentable as anticipated by Sears; (2) claim 13 is not proven unpatentable as anticipated by Rappleyea; (3) claim 13 is not proven unpatentable as anticipated by Zeller; (4) claim 36 is not proven unpatentable as obvious over Sears, Rappleyea, or Monica and Halstead; and (5) claims 3, 4, and 7 are not proven unpatentable over Sears or Rappleyea and Ispas.

The list of claims and grounds added to the trial in our November 9, 2018, Order that remain in this proceeding is more extensive than Kranos states in its motion. *See, e.g.*, PO Supp. Resp. 33–36 (indicating that Kranos does not address certain claims and grounds added to trial but not covered by its motion for partial adverse judgment). Specifically, the following claims and grounds remain in this proceeding: (1) claims 1, 2, 5, 11, and 30 as allegedly anticipated by Rappleyea; (2) claims 1, 2, 5, 11, 25, 27, 30, and 32 as allegedly anticipated by Zeller; and (3) claims 6 and 26 as allegedly obvious over Sears or Rappleyea and Ispas (two grounds total). We address each of these three grounds, below.

B. Level of Ordinary Skill in the Art

The level of skill in the art is “a prism or lens” through which we view the prior art and the claimed invention. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). Kranos asserts that the level of ordinary skill in the art to which the ’118 patent pertains is “a bachelor’s degree in engineering or more than three years’ experience in the design of protective

equipment, protective helmets, and/or plastic parts including the design of protective and/or structural plastic elements.” Pet. 43 (citing Ex. 1013 (Decl. of Jamison Float) ¶ 72). Riddell does not expressly address the level of ordinary skill in the Patent Owner Response, but its declarant provides a definition. Mr. Shewchenko declares that “a person having ordinary skill in the art would have a degree in a relevant technical, physics, or engineering field and at least two years of experience designing and engineering sports helmets.” Ex. 2005 ¶ 19. Mr. Shewchenko further declares that the level of ordinary skill would also include a person without a technical degree having at least five years of experience designing sports helmets. *Id.*⁹

Factual indicators of the level of ordinary skill in the art include “the various prior art approaches employed, the types of problems encountered in the art, the rapidity with which innovations are made, the sophistication of the technology involved, and the educational background of those actively working in the field.” *Jacobson Bros. v. United States*, 512 F.2d 1065, 1071 (Ct. Cl. 1975), *quoted with approval in Orthopedic Equip. Co. v. United States*, 702 F.2d 1005, 1011 (Fed. Cir. 1983). In our Final Written Decision, we made underlying factual findings, based on our review of the complete

⁹ The Board has declined to consider information presented in a supporting declaration, but not discussed sufficiently in a paper filed in an *inter partes* review proceeding because, among other reasons, doing so would permit the use of declarations to circumvent the page limits or word counts established by our rules. *See, e.g., Fid. Nat’l Info. Servs., Inc. v. DataTreasury Corp.*, Case IPR2014-00489, slip op. at 9–10 (PTAB Aug. 13, 2014) (Paper 9) (“We, therefore, decline to consider information presented in a supporting declaration, but not discussed sufficiently in a petition; among other reasons, doing so would permit the use of declarations to circumvent the page limits that apply to petitions.”).

record before us, and ultimately found that a person having ordinary skill in the art to which the '118 patent pertains would have at least a Bachelor's degree in engineering or physics and at least one year of experience in designing protective equipment, protective helmets, or plastic parts including the design of protective or structural plastic elements. Final Wrtn. Dec. 9–10. We also found that additional experience (at least three years) may be substituted for a formal engineering degree. *Id.* at 10. We found that the prior art of record reflects this level of ordinary skill in the art. *Id.* at 10–11. We noted that our patentability analysis presented below would reach the same findings and determinations under Kranos's or Mr. Shewchenko's definition of the level of ordinary skill in the art. *Id.* at 11.

In the supplemental briefing, neither party argued for a different definition of the level of ordinary skill than the definition adopted in our Final Written Decision, nor do we discern any reason, based on the supplemental record, to change this definition.

C. Claim Construction

In an *inter partes* review, claim terms in an unexpired patent are given their broadest reasonable construction in light of the specification of the patent in which they appear.¹⁰ 37 C.F.R. § 42.100(b) (2016). Under the broadest reasonable construction standard, claim terms are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech.*,

¹⁰ A recent amendment to this rule does not apply here because the Petition was filed before November 13, 2018. *See* Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340 (Oct. 11, 2018) (amending 37 C.F.R. § 42.100(b) effective November 13, 2018).

Inc., 504 F.3d 1249, 1257 (Fed. Cir. 2007). Also, we are careful not to read a particular embodiment appearing in the written description into the claim if the claim language is broader than the embodiment. *See In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993) (“[L]imitations are not to be read into the claims from the specification.”).

In the Petition, Kranos provides no express constructions for any claim term, indicating that we should give each claim term its broadest reasonable interpretation. Pet. 10. Riddell offers an express construction for two claim terms: (1) “aligned along”; and (2) “integrally formed.” PO Resp. 5–13. We addressed these terms in our Final Written Decision. Final Wrtn. Dec. 11–17. The supplemental briefing did not raise any claim construction issues. *See* Pet. Supp. Br.; PO Supp. Resp.; Pet. Supp. Reply; PO Sur-Reply.

The term “aligned along” does not appear in any claim addressed in this Supplemental Final Written Decision. *See, e.g.*, Final Wrtn. Dec. 11 (indicating that the term “aligned along” appears in independent claim 34). In the Final Written Decision, we determined that we did not need to expressly construe the term “integrally formed” to resolve the parties’ dispute. *See id.* at 16. As will be apparent from our analysis below, we need not address this term further here.

D. Overview of the Asserted Prior Art

We briefly discuss the prior art references at issue in this Decision, below.

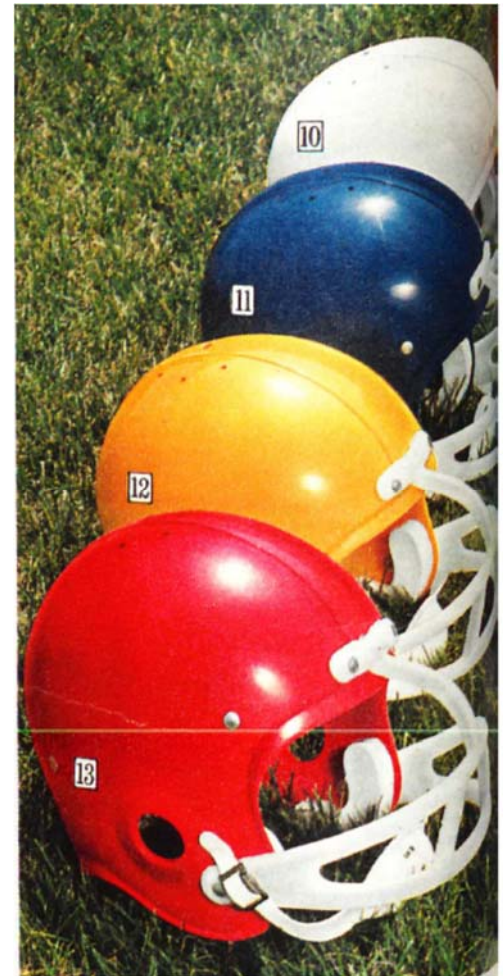
1. *Sears*

Sears is a page from a 1971 Sears catalog, depicting football helmets. The image from the catalog relied on by Kranos is reproduced on the right.

The image depicts four similar football helmets (differing in color only). *See* Ex. 1004, 7. In describing these helmets, the catalog states that helmets 10–13 are a “[c]ontour of one-piece, high-impact Kralastic®.” *Id.*

2. *Rappleyea*

Rappleyea, titled “Protective Helmet for Football or the Like,” issued May 1, 1973. Ex. 1006, (54), (45). Rappleyea is generally directed to “[a] protective helmet having an outer durable shell and an inner replaceable liner of expanded, closed cell, plastic material of a type which is capable of absorbing energy by taking a permanent set.” *Id.*, Abstract.



Rappleyea's Figures 1–5 are reproduced below:

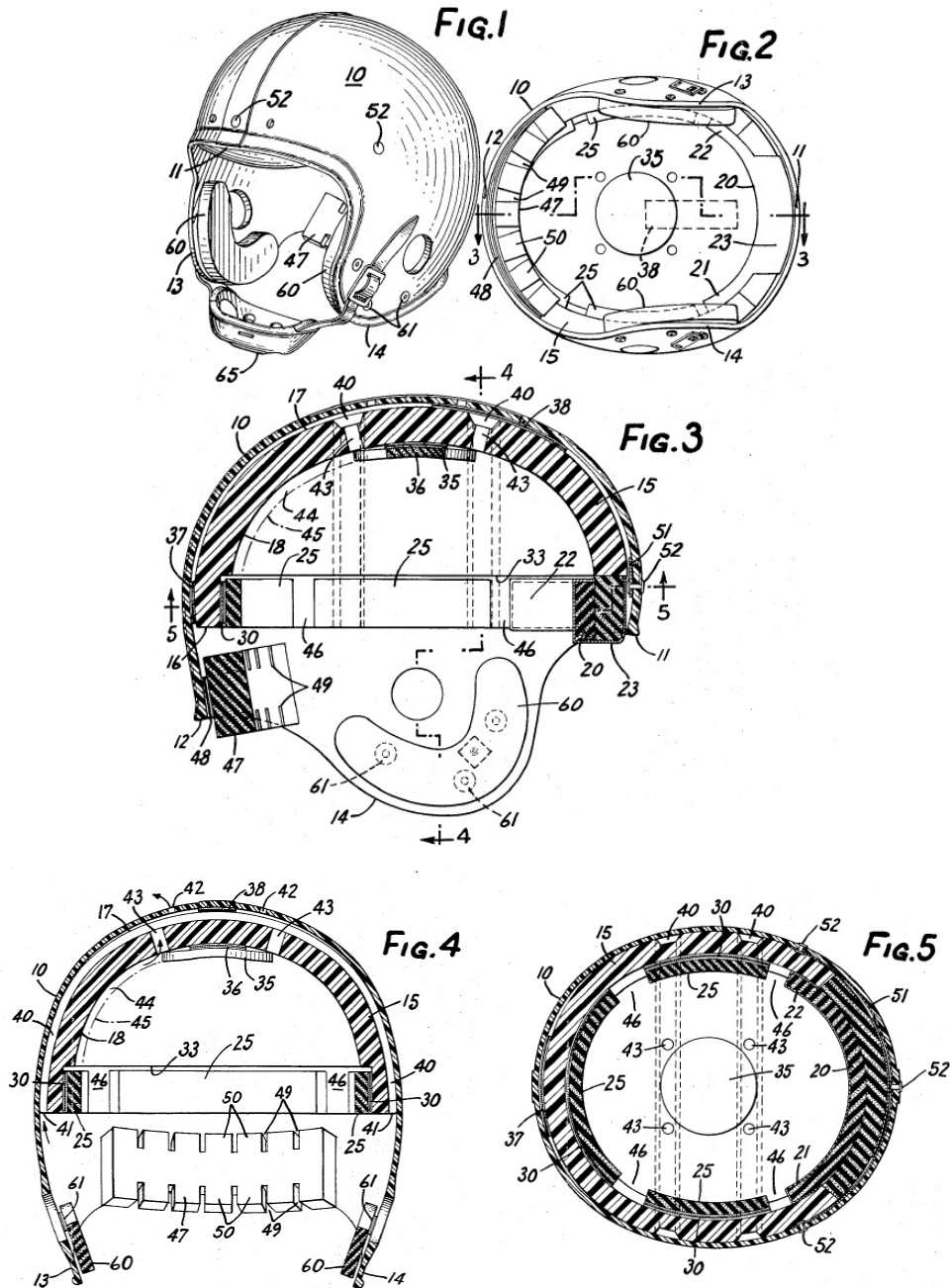


Figure 1 depicts an external view of an embodiment of the disclosed helmet. Ex. 1006, 1:19–20. Figure 2 shows a view of the helmet of Figure 1 from the bottom. *Id.* at 1:21–22. Figure 3 depicts a vertical section along line 3–

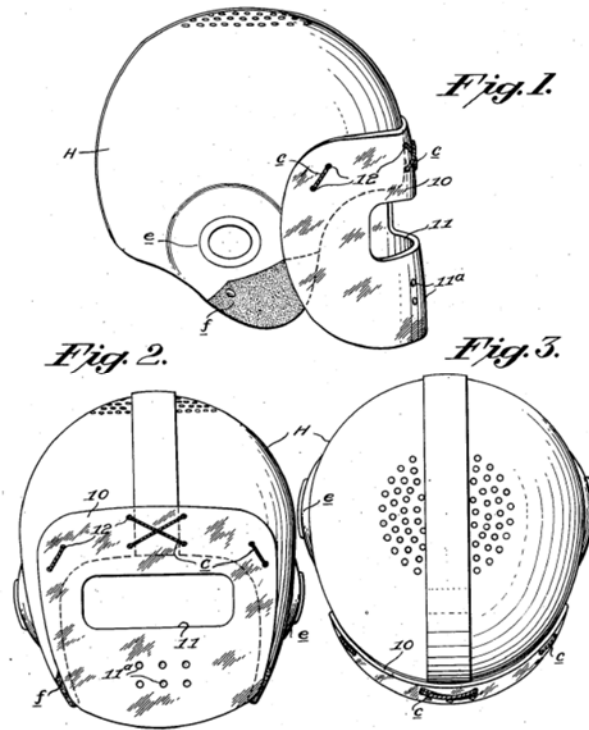
3, Figure 4 depicts a transverse section through line 4–4, and Figure 5 depicts a horizontal section through line 5–5. *Id.* at 1:24–32. The helmet includes outer shell 10 and liner 15, recessed in the shell. Ex. 1006, 1:40–47. As depicted in Rappleyea’s Figures 4 and 5, “vertically extending grooves 40 are integrally molded in the liner defining inlet openings 41 at the lower edge of the liner and communicating with registering vent openings 42.” *Id.* at 3:37–40. “Openings 43 perforating the crown portion of the liner permit escape of air from . . . region 44.” *Id.* at 3:40–42. Rappleyea discloses that “the helmet is doubly vented, with air flow passages being provided both on the outside surface and on the inside surface of the liner for common venting through vent holes at the top of the shell.” *Id.* at 3:45–49. Rappleyea’s Figure 4 depicts two (2) openings 42, and Figure 5 depicts four (4) openings 43.

Figures 3, 4, and 5 depict outer shell 10, including a raised central band, with cross hatching that indicates that the shell and central band form a single unit made of the same material. *See, e.g.*, Fig. 3 (showing the same cross hatching uninterrupted between outer shell 10 and the raised central band of the shell).

3. *Zeller*

Zeller, titled “Protective Face Guard,” issued October 10, 1950. Ex. 1005, 1. *Zeller* is directed to a face guard for protective sports helmets,

such as those used in fencing, baseball, and, especially, football. *Id.* at 1:3–13. Zeller’s Figures 1–3 are reproduced below:



Figures 1–3 depict side, front, and top views, respectively, of Zeller’s helmet with face guard. Ex. 1005, 1:37–41. Zeller discloses that its helmet H, to which its inventive face guard is attached, is not a novel feature of the invention. *Id.* at 1:42–45.

4. Halstead

Halstead, titled “Helmet,” issued April 24, 2001. Ex. 1008, (54), (45). Halstead is generally directed to a helmet, such as a football helmet, with improved comfort characteristics. *Id.* at 1:10–18. Halstead’s Figures 1 and 2 are reproduced below.

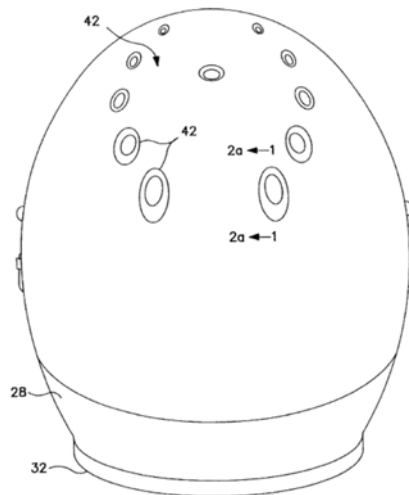
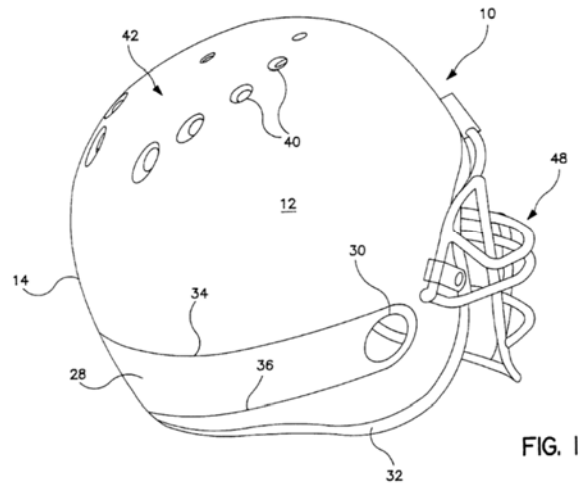


Figure 1 provides a side perspective view of Halstead's helmet, and Figure 2 provides a rear perspective view of the helmet of Figure 1. Ex. 1008, 2:32–36. Of relevance to our analysis, helmet 10 includes shell 12 with apertures 40 that extend between the outer surface to the inner surface of shell 12. *Id.* at 3:46–49. Halstead discloses that “[e]ach aperture 40 has . . . interior major axis 44 adjacent . . . interior surface 16 of . . . shell 12 that is less than

its exterior major axis 46 adjacent . . . exterior surface 14 of the shell.” *Id.* at 3:49–52; see *id.*, Fig. 2a (depicting the configuration of aperture 40).

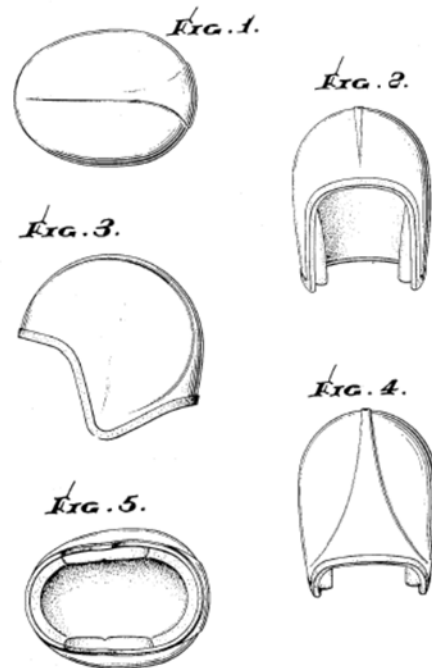
Halstead further discloses that “major axis 46 is selected to be sufficiently small as to inhibit insertion of a human finger therein yet sufficiently large so as to avoid plugging with soil or turf.” *Id.* at 3:52–55. As seen in Figure 2, apertures 40 are elongated in shape (that is, interior minor axis 44 is less than exterior major axis 46) and extend to the rear portion of shell 12. *Id.*

5. *Ispas*

Ispas is a design patent titled “Helmet,” which issued March 26, 1974. Ex. 1009, 1. *Ispas* depicts five views of its claimed ornamental design for a helmet, which are reproduced at right.

Figure 1 provides a top plan view of *Ispas*’s helmet, Figures 2–4 provide front, side, and rear elevation views, respectively, of the helmet, and Figure 5 provides a bottom plan view of the helmet.

Ex. 1009, 1. As seen in the Figures, *Ispas*’s ornamental design includes a raised central portion that widens as it extends from the front to the back of the helmet.



E. Analyzed Grounds of Unpatentability—Anticipation

A “prior art reference—in order to anticipate under 35 U.S.C. § 102—must not only disclose all elements of the claim within the four corners of the document, but must also disclose those elements ‘arranged as in the claim.’” *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir.

2008) (quoting *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548 (Fed. Cir. 1983)). Also, a drawing from a prior art reference alone may disclose a claim element if the drawing clearly shows that element. See *In re Mraz*, 455 F.2d 1069, 1072 (CCPA 1972) (“[W]e did not mean that things patent drawings show clearly are to be *disregarded*. . . . ‘Description for the purposes of anticipation can be by drawings alone as well as by words.’” (quoting *In re Bager*, 47 F.2d 951, 953 (CCPA 1931)); see also *PlaSmart, Inc. v. Kappos*, 482 Fed. Appx. 568, 572–73 (Fed. Cir. 2012) (“Our precedent has held that drawings can be used as prior art, without referring to the surrounding description, only if the prior art features are clearly disclosed by the drawing.” (citing *In re Mraz*, 455 F.2d at 1072)) (non-precedential).

1. *Claims 1, 2, 5, 11, and 30 as allegedly anticipated by Rappleyea*

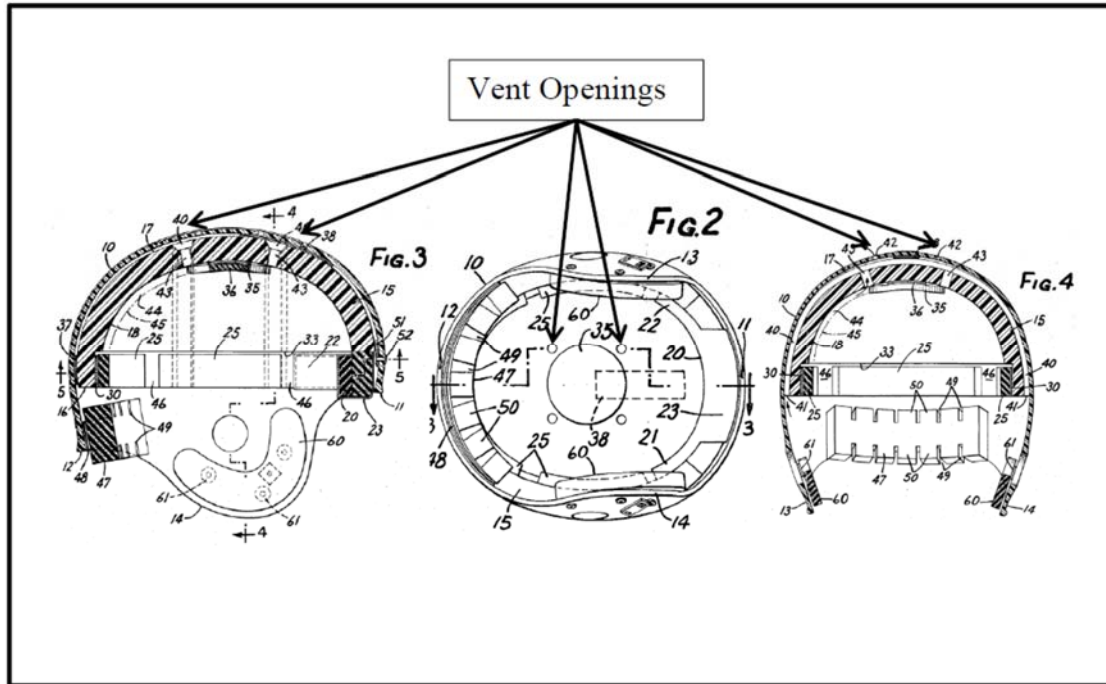
We must determine if the information in the Petition demonstrates, by a preponderance of the evidence, that Rappleyea anticipates claims 1, 2, 5, 11, and 30. Claim 1 is independent and claims 2, 5, 11, and 30 depend, directly or indirectly, from claim 1. Independent claim 1 requires, in relevant part, a plastic shell with a first plurality of vent openings that are positioned along a first side wall of a raised central band. See Ex. 1001, 24, 1:25–38.

In our Decision on Institution, we determined that “the Petition fails to explain adequately how Rappleyea discloses a plurality of vent openings in the helmet shell along a first side of a raised central band, as required by independent claim 1.” Dec. on Inst. 33. So, we concluded that the information in the Petition failed to demonstrate a reasonable likelihood that claim 1 was anticipated by Rappleyea. *Id.* at 33–34. Kranos filed a

Rehearing Request contending that we misapprehended or overlooked Rappleyea's teachings as to this claim element. See Paper 12, 1–9. We denied the request. Paper 14, 3–10. In its supplemental briefing, Kranos does not further address this ground of unpatentability. See Pet. Supp. Br.; Pet. Supp. Reply; *see also* PO Supp. Resp. 33–36 (indicating that Kranos does not address certain claims and grounds added to trial but not covered by its motion for partial adverse judgment).

On the complete record, we determine that the information in the Petition fails to demonstrate, by a preponderance of the evidence, that Rappleyea discloses *a plurality* of vent openings in the helmet shell *along a first side* of a raised central band, as required by independent claim 1, as we find that Rappleyea discloses only a single opening along each side of the raised central band of its helmet. In the Petition, Kranos annotates Rappleyea's Figures 2, 3, and 4 to support its contention that Rappleyea discloses this subject matter, with no further explanation. Pet. 28. We

reproduce Kranos's annotated version of Rappleyea's Figures 2, 3, and 4 below.



Pet. 28. The annotated figures show different views of Rappleyea's helmet, with a single annotation, "Vent Openings," and arrows pointing to features depicted in the figures. In the annotated images, Kranos alleges that the recited vent openings of claim 1 correspond to openings 40 (Figure 3), 42 (Figure 4), and 43 (Figure 2). However, openings 40 and 43 are in the lining, not the shell, as required by claim 1. See Ex. 1006, Figs. 3–5. Opening 42 is the only opening depicted in the shell and Figures 3–5 show only one opening along each side of the raised central band, not a plurality of openings.

So, we determine that the information in the Petition fails to demonstrate, by a preponderance of the evidence, that independent claim 1 is unpatentable under 35 U.S.C. § 102(b) as anticipated by Rappleyea.

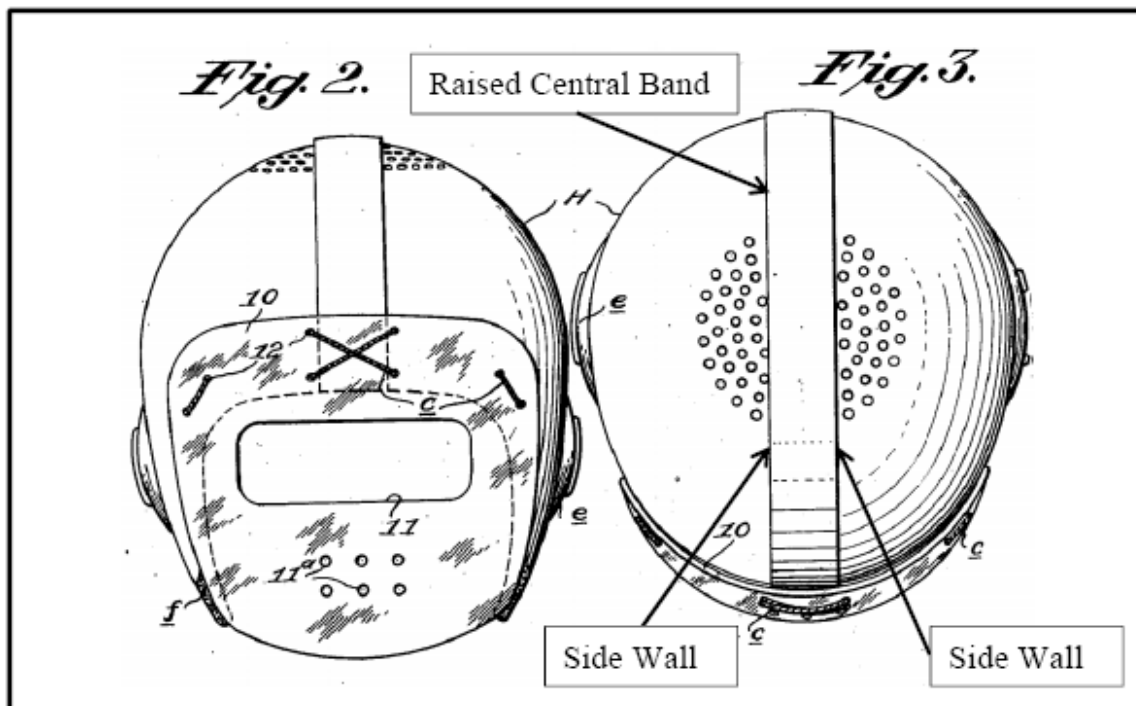
Because claims 2, 5, 11, and 30 depend from claim 1, we also determine that

the information in the Petition fails to demonstrate, by a preponderance of the evidence, that Rappleyea anticipates these dependent claims.

2. Claims 1, 2, 5, 11, 25, 27, 30, and 32 as allegedly anticipated by Zeller

We must determine if the information in the Petition demonstrates, by a preponderance of the evidence, that Zeller anticipates claims 1, 2, 5, 11, 25, 27, 30, and 32. Claims 1 and 25 are independent. Claims 2, 5, 11, and 30 depend, directly or indirectly, from claim 1 and claims 27 and 32 depend directly from claim 25. Independent claim 1 requires, in relevant part, “a raised central band integrally formed as part of the shell” and independent claim 25 similarly requires “a raised central band integrally formed in the shell.” Ex. 1001, 24, 1:32–34, 2:42–45 (the “raised central band” limitations of claims 1 and 25).

In the Petition, Kranos annotates Zeller’s Figures 2 and 3 to support its contention that Zeller discloses the subject matter of the “raised central band” limitations of claims 1 and 25. Pet. 36. The annotated figures are reproduced below.



Pet. 36. These annotated figures label what Kranos contends is the raised central band for Zeller's helmet. The Petition does not contain any additional explanation on this contention. In its supplemental briefing, Kranos does not further address this ground of unpatentability. See Pet. Supp. Br.; Pet. Supp. Reply; *see also* PO Supp. Resp. 33–36 (indicating that Kranos does not address certain claims and grounds added to trial but not covered by its motion for partial adverse judgment).

We determine, on the complete record, that Kranos fails to demonstrate, by a preponderance of the evidence, that Zeller discloses a raised central band *integrally formed* in or as part of the football helmet's plastic shell as required by independent claims 1 and 25. Kranos fails to explain how Zeller's central band is formed, including whether it is formed

as a single unit with Zeller’s helmet or even fixed to the helmet.¹¹ We find that Zeller is silent as to any aspect of this feature of its helmet, including how it is formed. *See* Ex. 1005 (focusing its description on plate 10 and never mentioning the helmet feature Kranos alleges corresponds to the raised central band).

Accordingly, we determine that the information in the Petition fails to demonstrate, by a preponderance of the evidence, that independent claims 1 and 25 are unpatentable under 35 U.S.C. § 102(b) as anticipated by Zeller. Because claims 2, 5, 11, 27, 30, and 32 ultimately depend from either claim 1 or claim 25, we determine that the information in the Petition fails to demonstrate, by a preponderance of the evidence, that Zeller anticipates these dependent claims.

F. Analyzed Grounds of Unpatentability—Obviousness

Title 35, Section 103(a) of the U.S. Code,

forbids issuance of a patent when “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

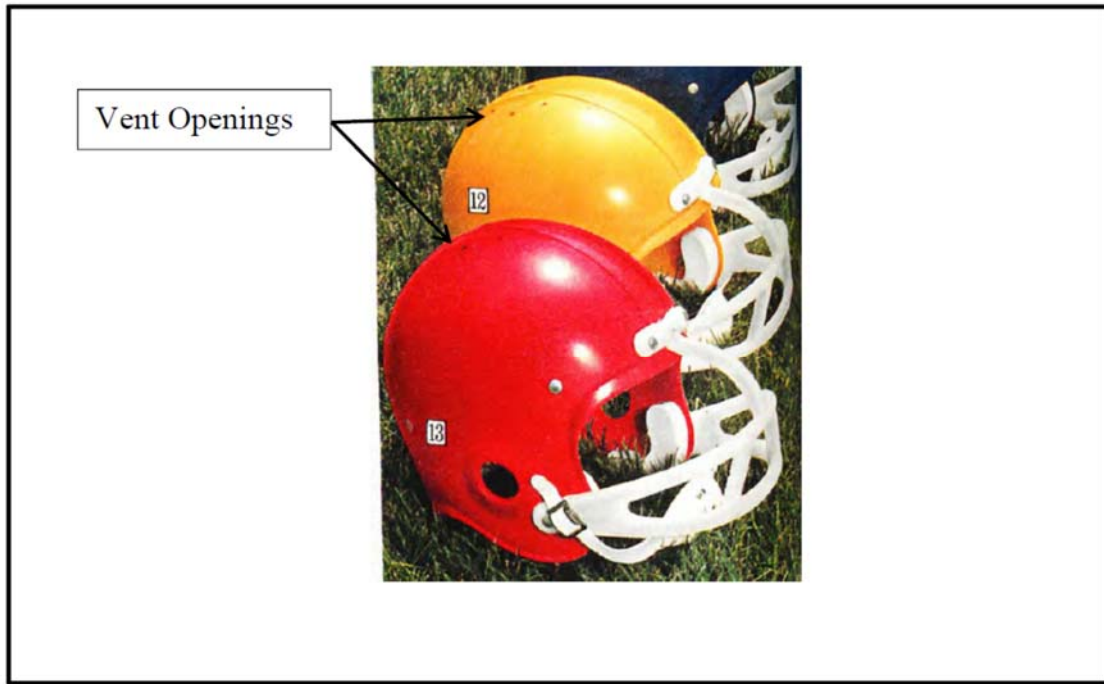
¹¹ In its Petitioner Reply, Kranos argued that the term “integrally formed” should be broadly construed to encompass both central bands that are formed as a single unit with the helmet and central bands that are formed as a separate piece to the helmet and then fixed to the helmet. *See* Pet. Reply 6–8.

skill in the art; and (4) when available, secondary considerations, such as commercial success, long felt but unsolved needs, and failure of others. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). We analyze these factual determinations with respect to the instituted obviousness grounds. We analyze the level of ordinary skill in the art in Section II.B.1, above, and Riddell does not direct us to any evidence of secondary considerations in the record in response to Kranos’s obviousness assertions. Accordingly, as we have no evidence of secondary considerations to weigh in our ultimate determination of obviousness, our analysis applies the other three *Graham* factors.

1. Claims 6 and 26 as allegedly obvious over Sears and Ispas

We must determine if the information in the Petition demonstrates, by a preponderance of the evidence, that the combination of Sears and Ispas render obvious the subject matter of claims 6 and 26. Claim 6 depends indirectly from claim 1 and claim 26 depends directly from claim 25 and, as such, these dependent claims include each and every claim limitation of the claims from which they depend. Relevant to our analysis here, independent claims 1 and 25 require a plurality of vent holes formed in the shell outside the raised central band of the recited helmet along one side of the raised central band. See Ex. 1001, 24, 1:35–36, 2:47–48 (the “vent openings” limitations of claims 1 and 25). Kranos contends that “Sears discloses the [v]ent [o]pening [l]imitation” of claims 1 and 25. Pet. 18.

To support Kranos’s contention, the Petition provides the following annotated image:



This annotated image is from page 212 of Sears (which is page 7 of Ex. 1004), with the annotation consisting of arrows pointing to the crown region of two depicted helmets and a label reading “Vent Openings.” Pet. 18. In our Final Written Decision, we interpreted Kranos’s contention as being that the dark spots shown on the helmet are vent openings. See Final Wrtn. Dec. 23.

In support of Kranos’s position, its declarant, Mr. Float, states, “It is my opinion that Sears discloses the Vent Openings Limitation of [c]laims 1

and 25” and cites to Ex. 1014.¹² Ex. 1013 ¶ 39 (cited at Pet. Reply 10–11). With respect to the vent openings limitations of claims 1 and 25, Exhibit 1014 merely reproduces the above annotated image from the Petition. Mr. Float provides no additional explanation to support his opinion as to why a person having ordinary skill in the art would understand the dark spots in the crown region of Sears’s helmet are vent openings.

In our Final Written Decision, we found that Sears fails to *clearly disclose* that the dark spots in the crown region of Sear’s helmet are vent openings. Final Wrtn. Dec. 24. Significant to that finding, Kranos failed to offer any explanation or supporting testimony as to why a person having ordinary skill in the art would have understood that Sears discloses vent openings. *See id.* Without such a disclosure or any other supporting evidence for us to consider, we could not find that Sears discloses, by a preponderance of the evidence, the vent openings limitation of claims 1 and 25. *See Mraz*, 455 F.2d at 1072. Kranos did not request rehearing on this finding nor did it appeal this finding after we issued the Final Written Decision. Also, Kranos does not argue in its supplemental briefing that we misapprehended or overlooked Sears’s teaching as to the vent openings limitation of claims 1 and 25. *See* Pet. Supp. Br.; Pet. Supp. Reply.

¹² Mr. Float indicates that he considered the information in Exhibits 1014–1018, but nowhere does he indicate that he prepared these exhibits or that these exhibits are encompassed in his Declaration and the attestation that the information in his Declaration is “true and correct.” *See* Ex. 1013 ¶ 17; *id.* at p. 25. Although we question whether Exhibits 1014–1018 are admissible as evidence as they appear to represent attorney argument outside the Petition and Mr. Float’s Declaration, we need not reach that determination, as we do not rely on any information from those exhibits.

Instead, Kranos asks us to reform the ground as asserted in the Petition to include Halstead, which we found to disclose the vent openings limitation of claims 1 and 25. *See* Supp. Tr. 9:18–10:11; *see also* Final Wrtn. Dec. 34–35 (providing our finding as to Sears, as modified by Halstead, disclosing the vent openings limitation of claims 1 and 25). Specifically, Kranos argues that “because the only feature that is being added . . . in [c]laim[s] 6 and 26, is the curvilinear feature of Ispas” “[a]nd the [B]oard already found all the other limitations from the claims that those claims depend on to be obvious, based on a combination of Sears and Halstead, that it should likewise, . . . in the interests of justice, in the interests of fairness, . . . consider that combination, Sears, Halstead, Ispas.” Supp. Tr. 10:2–11. Kranos recognizes that if we do not reform the ground to include Halstead, then its challenge to claims 6 and 26 cannot succeed. *See id.* at 11:6–14 (“JUDGE MAYBERRY: . . . But if we do not rewrite your petition and go by the petition as you have filed it, then essentially the Ispas grounds go away for the ’118 [p]atent; would that be correct? MR. GILFORD: If you are going strictly by what the petition says, then you would be correct.”). Kranos argues that, in our Decision on Institution, we did something similar to what it asks us to do now. *See* Supp. Tr. 9:20–10:1 (explaining that the Board, *sua sponte*, added independent claims 1 and 25 to a ground that challenged dependent claim 11); *see also* Dec. on Inst. 43 (explaining that we exercised our discretion to add independent claims 1 and 25 to a ground challenging dependent claims 11, 12, and 28, but not the base independent claims).

We decline to reform this ground to include the teachings of Halstead, as doing so would be fundamentally unfair to Riddell. *See Acceleration*

Bay, LLC v. Activision Blizzard Inc., 908 F.3d 765, 775 (Fed. Cir. 2018) (“Blizzard, as petitioner, had an opportunity to present this argument in its petition, but chose not to.”); *Sirona Dental Sys. GmbH v. Institut Straumann AG*, 892 F.3d 1349, 1358 (Fed. Cir. 2018) (“We see no error in the Board’s decision not to decide grounds of unpatentability not raised in the petition.”). First, Kranos did not clearly present this new ground in its Supplemental Brief. At oral hearing, Kranos’s counsel identified a *heading* on page 26 of its Supplemental Brief that reads: “Petitioner Showed In Its ‘118 And ‘818 IPR Petitions That A POSITA Would Have Been Motivated To Combine Sears With Halstead And Ispas,” as providing the notice to Riddell and the Board that Kranos is presenting a new ground for the first time in that briefing. See Supp. Tr. 90:7–12; Pet. Supp. Br. 26. We determine that this heading is insufficient to put Riddell and the Board on notice of Kranos’s revised ground. As we explain below, this heading is vague with respect to the ’118 patent and this proceeding.

As Kranos’s counsel recognizes, its challenges to U.S. Patent No. 8,938,818 B2 in IPR2016-01650, addressed in the same Supplemental Brief as the challenges to the ’118 patent in this proceeding, include a combination of Sears, Halstead, and Ispas. See Supp. Tr. 90:16–91:10 (indicating that there is “no doubt” that the combination of Sears, Halstead, and Ispas is in the petition in IPR2016-01650 addressing the ’818 patent). We determine that the reference to Halstead in the heading could be interpreted as pertaining to IPR2016-01650 *only*, and not this proceeding. More significant to our determination is that nowhere *in the body* of the Supplemental Brief does Kranos indicate that it is asserting a new ground in challenging claims 6 and 26 of the ’118 patent. In the brief addressing

claims 6 and 26, Kranos focuses on our findings as to Ispas and never indicates that we should consider the base independent claims as obvious over Sears and Halstead as part of our analysis. *See* Paper 34, 26–29. Indeed, this issue was not identified until Kranos’s counsel was questioned about a demonstrative exhibit during the supplemental oral hearing. Supp. Tr. 8:26–9:20.

Second, and more significant, parties before the Board must receive adequate notice of the issues the Board will decide and an opportunity to be heard on those issues. *See Genzyme Therapeutic Prod. Ltd. v. Biomarin Pharm. Inc.*, 825 F.3d 1360, 1367 (Fed. Cir. 2016); 5 U.S.C. § 554(c). Although Riddell had the opportunity to address whether the combination of Sears and Halstead renders obvious the subject matter of claims 1 and 25, *see* Final Wrtn. Dec. 27–47, it was not given the opportunity to address the combination of Sears, Halstead, and Ispas with respect to claims 6 and 26. At oral hearing, Riddell’s counsel stated that “we also very much dispute their attempt to try to slip Halstead into the ’118 proceeding at this late . . . point. They just slipped it into headings, they didn’t actually address it substantively. They didn’t address the impact of Halstead, they didn’t justify why we’re doing that.” Supp. Tr. 51:12–21. If in this Decision we, *sua sponte*, modified the grounds in the Petition challenging claims 6 and 26 to include Halstead, we would deprive Riddell of the opportunity to respond to that challenge.

The Federal Circuit’s decision in *EmeraChem Holdings, LLC v. Volkswagen Group of America, Inc.*, 859 F.3d 1341, 1348 (Fed. Cir. 2017), is instructive here. In *EmeraChem*, the Court determined that the patent owner, EmeraChem Holdings, was denied the Administrative Procedure

Act's (APA's) requirements of notice and an opportunity to respond to a challenge against certain patent claims in an *inter partes* proceeding. *EmeraChem*, 859 F.3d at 1348. Specifically, the Court determined that the petition in that proceeding identified only a single reference for disclosing some of the subject matter of certain dependent claims. The Board, however, relied on a different reference, one identified in the petition generally and in the institution decision for an independent claim, for disclosing some of the subject matter claimed in the dependent claims. *See id.* at 1348–51. The court concluded that EmeraChem Holdings was denied an opportunity to respond to that challenge, in violation of its due process rights under the APA. *Id.* at 1348. Similarly, here, we addressed a combination of Sears and Halstead for the base independent claims, but never with respect to claims 6 and 26 and never in a ground that included Ispas. As such, Riddell never had the opportunity to address the prior art in consideration of the combination of Sears, Halstead, and Ispas.

Our modification of grounds in our Institution Decision is distinguishable from the situation Kranos urges here. In our Institution Decision, we determined that the information in the Petition demonstrated a reasonable likelihood that claims 11, 12, and 28 were unpatentable as obvious over Sears and Halstead. *See* Dec. on Inst. 36–43. In making that determination with respect to claims 11, 12, and 28, we needed to analyze whether the combination of Sears and Halstead disclosed the subject matter of the base independent claims, claims 1 and 25. *See id.* at 36–39. We also determined that it would be anomalous to proceed with an *inter partes* proceeding as to certain dependent claims and not as to the base independent claims, which were implicitly asserted in the Petition. *See id.* at 43; *cf.*

EmeraChem, 859 F.3d at 1349–50 (distinguishing *In re Cuozzo Speed Technologies, LLC*, 793 F.3d 1268 (Fed. Cir. 2015), *aff'd*, 136 S.Ct. 2131 (2016), from the facts in *EmeraChem* because the Board recognized in *Cuozzo* that the Petition implicitly asserted the claims added to the ground). Also, we clearly identified claims 1 and 25 as added to the grounds in our Institution Decision, providing Riddell with the required notice and opportunity to respond in its Patent Owner Response. Here, the use of Halstead in the combination challenging claims 6 and 26 of the '118 patent was never *clearly* identified in a way that Riddell had an opportunity to respond.

Based on the entire trial record, we determine that the information in the Petition fails to demonstrate, by a preponderance of the evidence, that Sears discloses the vent openings limitations of claims 1 and 25. Also, with respect to the combination of Sears and Ispas, Kranos does not contend that Ispas teaches this subject matter. Accordingly, we determine that the information in the Petition fails to demonstrate, by a preponderance of the evidence, that the combination of Sears and Ispas discloses the subject matter of claims 6 and 26, which ultimately depend, respectively, from claims 1 and 25. As we determine that the information in the Petition fails to demonstrate, by a preponderance of the evidence that the combination of Sears and Ispas discloses the subject matter of the vent openings limitations of claims 1 and 25, we need not address the parties' contentions with respect to Ispas and claims 6 and 26. *See* Pet. Supp. Br. 26–29; PO Supp. Resp. 21–30; Pet. Supp. Reply 15–17.

2. Claims 6 and 26 as allegedly obvious over Rappleyea and Ispas

We must determine if the information in the Petition demonstrates, by a preponderance of the evidence, that the combination of Rappleyea and Ispas renders obvious the subject matter of claims 6 and 26. Claim 6 depends indirectly from claim 1 and claim 26 depends directly from claim 25 and, as such, these dependent claims include each and every claim limitation of the claims from which they depend. Relevant to our analysis here, independent claims 1 and 25 require a plurality of vent holes formed in the shell outside the raised central band of the recited helmet along one side of the raised central band. *See* Ex. 1001, 24, 1:35–36, 2:47–48 (the “vent openings” limitations of claims 1 and 25).

As we discussed above, on the complete record, we determine that the information in the Petition fails to demonstrate, by a preponderance of the evidence, that Rappleyea discloses *a plurality* of vent openings in the helmet shell *along a first side* of a raised central band, as required by independent claim 1, as we find that Rappleyea discloses only a single opening along each side of the raised central band of its helmet. So, we determine that the information in the Petition fails to demonstrate, by a preponderance of the evidence, that claim 6, which depends directly from claim 1, is unpatentable under 35 U.S.C. § 103 over Rappleyea and Ispas.

With respect to claim 26, we note that nowhere in the Petition or the supplemental briefing does Kranos address the combination of Rappleyea and Ispas as disclosing the subject matter of claim 26. *See* Pet. 57–61 (addressing the combination of Rappleyea and Ispas as to claims 3, 4, 6, and 7 only); *see also id.* at 62 (“The combination of each of Rappleyea and Ispas teaches each and every limitation of Contested Claims 3, 4, 6, and 7.”).

Consequently, we determine that the information in the Petition fails to demonstrate, by a preponderance of the evidence, that claim 26 is unpatentable under 35 U.S.C. § 103 over Rappleyea and Ispas.

Also, Kranos does not argue that we should modify the Petition to include Halstead in combination with Rappleyea and Ispas in determining the patentability of claims 6 and 26. *See* Pet. Supp. Br. 26–29 (addressing the patentability of claims 6 and 26 (the only claims that implicate Ispas), but never mentioning Rappleyea).

Finally, as we determine that the information in the Petition fails to demonstrate, by a preponderance of the evidence that the combination of Rappleyea and Ispas discloses the subject matter of the vent openings limitation of claim 1 (and that the Petition does not assert that the combination renders obvious claim 26), we need not address the parties’ contentions with respect to Ispas and claims 6 and 26. *See* Pet. Supp. Br. 26–29; PO Supp. Resp. 21–30; Pet. Supp. Reply 15–17.

G. Patent Owner’s Motion to Exclude

Riddell moves to exclude Exhibits 1035–1044. Paper 42, 1. Kranos opposes the motion. Paper 44. Riddell argues that “at least Exhibits 1036, 1038, 1039, 1041, and 1043–1044 . . . constitute inadmissible hearsay under Federal Rules of Evidence 801–802.” Paper 42, 9. Riddell also argues that “none of Exhibits 1035–1044 are relevant to any issue in” this proceeding. *Id.* at 10.

Because we do not rely on any evidence from Exhibits 1035–1044 in this Decision, we deny Riddell’s motion as moot. We retain these exhibits in the proceeding to provide a complete record for any subsequent actions.

III. CONCLUSION

For the foregoing reasons, we conclude that Kranos has not established, by a preponderance of the evidence, that the asserted grounds and associated claims added in our November 9, 2018, Order are unpatentable. Specifically, we determine that (1) claim 13 is not proven unpatentable under 35 U.S.C. § 102(b) as anticipated by Sears; (2) claim 13 is not proven unpatentable under 35 U.S.C. § 102(b) as anticipated by Rappleyea; (3) claim 13 is not proven unpatentable under 35 U.S.C. § 102(b) as anticipated by Zeller; (4) claim 36 is not proven unpatentable under 35 U.S.C. § 103 over Sears, Rappleyea, or Monica and Halstead; and (5) claims 3, 4, and 7 are not proven unpatentable under 35 U.S.C. § 103 over Sears or Rappleyea and Ispas in accordance with Kranos's request for partial adverse judgment. We also determine that Kranos fails to prove, by a preponderance of the evidence, (1) that claims 1, 2, 5, 11, and 30 are unpatentable under 35 U.S.C. § 102(b) as anticipated by Rappleyea; (2) that claims 1, 2, 5, 11, 25, 27, 30, and 32 are unpatentable under 35 U.S.C. § 102(b) as anticipated by Zeller; and (3) that claims 6 and 26 are unpatentable under 35 U.S.C. § 103 over Sears or Rappleyea and Ispas.

Finally, we deny Riddell's motion to exclude as moot.

IV. ORDER

After due consideration of the record before us, it is:

ORDERED that claim 13 is *not* proven unpatentable under 35 U.S.C. § 102(b) as anticipated by Sears;

FURTHER ORDERED that claims 1, 2, 5, 11, 13, and 30 are *not* proven unpatentable under 35 U.S.C. § 102(b) as anticipated by Rappleyea;

FURTHER ORDERED that claims 1, 2, 5, 11, 13, 25, 27, 30, and 32 are *not* proven unpatentable under 35 U.S.C. § 102(b) as anticipated by Zeller;

FURTHER ORDERED that claim 36 is *not* proven unpatentable under 35 U.S.C. § 103 over Sears, Rappleyea, or Monica and Halstead;

FURTHER ORDERED that claims 3, 4, 6, 7, and 26 are *not* proven unpatentable under 35 U.S.C. § 103 over Sears or Rappleyea and Ispas;

FURTHER ORDERED that Riddell's motion to exclude Exhibits 1035–1044 is *dismissed* as moot; and

FURTHER ORDERED because this is a Supplemental 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.

IPR2016-01646
Patent 8,528,118 C1

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