Trials@uspto.gov
Tel: 571-272-7822

Paper 25
Entered: February 7, 2018

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

KRANOS CORPORATION
d/b/a Schutt Sports,
Petitioner,

v.

RIDDELL, INC.,
Patent Owner.

Case IPR2016-01649
Patent 8,813,269 B2

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

GROSSMAN, *Administrative Patent Judge*.

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

I. INTRODUCTION

Kranos Corporation (d/b/a Schutt Sports) ("Petitioner") filed a Petition requesting an *inter partes* review of claims 1–9, 11–20, 22, and 23 of U.S. Patent No. 8,813,269 B2 ("the '269 patent"). Paper 1, 1 ("Pet."). Patent owner, Riddell, Inc. ("Patent Owner"), filed a Preliminary Response. Paper 8 ("Prelim. Resp.").

Petitioner raised twelve separate and distinct challenges to patentability, including alternative combinations of the asserted references. We instituted review on the two grounds listed below:

1. Whether claims 1, 4–8, 13, 15, and 16–19 would have been obvious[1] based on Ide[2] and Szendel[3]; and

2. Whether claims 1, 2, 4–8, 13, 15, and 16–19 would have been obvious based on Ide and Jadoul[4]. Dec. Inst. 32. Paper 10, 5–6, 32 ("Dec. Inst.").

Patent Owner filed a Response to the Petition (Paper 15, "PO Resp."), and Petitioner filed a Reply (Paper 17, "Pet. Reply").

Petitioner submitted 32 exhibits, including demonstratives used at the hearing (Exs. 1001–1032). Petitioner relies, in part, on the Declaration testimony of its expert witness, Jamison Float (Ex. 1028).

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[1] The Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112-29, 125 Stat. 284, 296–07 (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 statute.
[2] U.S. Patent No. 6,934,971 B2, issued August 30, 2005 (Ex. 1020).
[3] U.S. Patent Publication No. 2004/0032099 A1, published February 19, 2004 (Ex. 1022).
[4] U.S. Patent No. 5,100,272, issued March 31, 1992 (Ex. 1023).

Patent Owner submitted four exhibits (Exs. 2001–2004), and also used demonstratives at the hearing (Paper 23). Patent Owner relies, in part, on the declaration testimony of its expert witness, Nicholas Shewchenko (Ex. 2001).

A hearing was held November 7, 2017. Paper 24 ("Tr.").

We have jurisdiction under 35 U.S.C. § 6. We enter this Final Written Decision pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

Petitioner has the burden of proving unpatentability of a claim by a preponderance of the evidence. 35 U.S.C. § 316(e). Based on the findings and conclusions below, we determine that Petitioner has not met its burden to establish that the claims considered in this proceeding are unpatentable in view of the evidence and arguments asserted in this proceeding.

A. Related Proceedings

The '269 patent is the subject of a suit captioned *Riddell, Inc. v. Kranos Corporation, d/b/a Schutt Sports*, Civ. No. 1:16-cv-4496 (N.D. Ill.). Pet. 1; Paper 7, 2.

Patent Owner also states that pending U.S. Patent Application Nos. 14/467,618, filed on August 25, 2014, and 15/076,106, filed on March 21, 2016, "claim common benefit with the '269 Patent." Paper 7, 2.

B. The '269 Patent

The '269 patent relates generally to a quick-release connector for the faceguard of a sports helmet, such as a football helmet. Ex. 1001, 2:50–53. The connector allows the faceguard to be removed quickly in the event of an injury to a player. *See id.* at 2:2–7. According to the disclosure of the '269 patent, the connector replaces a conventional threaded fastener connecting the faceguard to the helmet, which required the "time consuming process of unscrewing the fastener

to remove the connector and faceguard" in order to gain access to the player's face. *Id.*

Figure 1, illustrating a protective helmet, is reproduced below.

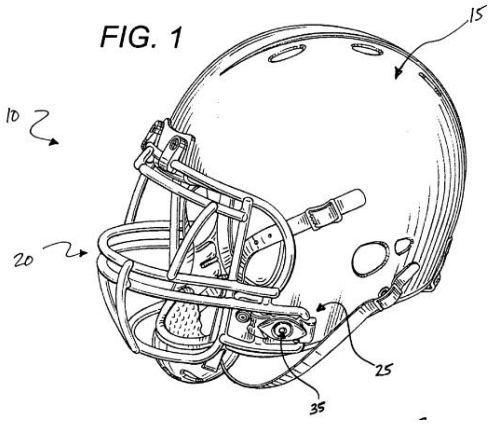


Figure 1 is a perspective view of a football helmet

Figure 3, illustrating an exploded view of the helmet shell, the faceguard, and the connector assembly, is reproduced below.

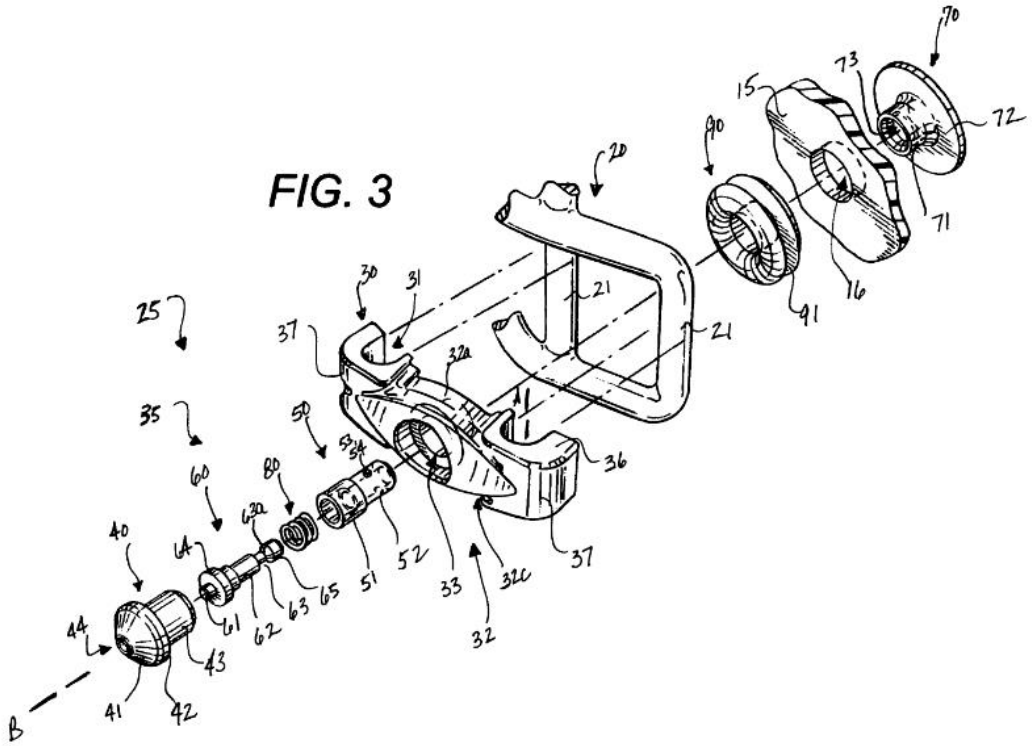


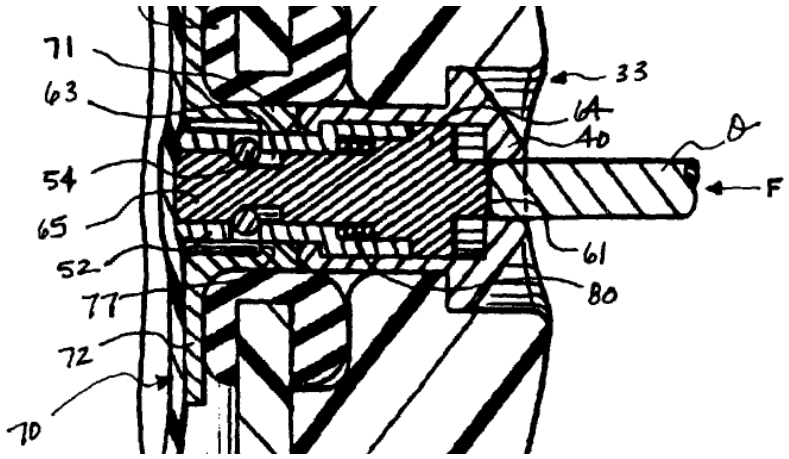
Figure 3 is an exploded view of the faceguard and connector assembly

As shown in the figures and described in the Specification, helmet 10 includes protective shell 15, faceguard 20, and faceguard connector assembly 25. *Id.* at 4:8–11. Connector assembly 25 connects faceguard 20 to shell 15. *Id.* Connector assembly 25 includes releasable coupler mechanism 35 that provides for "rapid attachment and detachment" of bracket 30 and faceguard 20 from shell 15 "without the deliberate and time-consuming use of a screwdriver (or cutting tool for removal)." *Id.* at 4:42–46. Coupler mechanism 35 includes head 40, cylindrical sleeve body 50, elongated actuator or pin 60, washer 70 on an inner surface of shell 15, and spring 80. *Id.* at 4:52–55.

When the faceguard is in its fixed, in-use, position (as shown in Figures 1, 2, and 4), actuating pin 60 extends through a substantial extent of head 40, sleeve body 50, and washer 70. *Id.* at 5:36–38.

To detach the faceguard, "inwardly directed actuation force F" (*see* excerpt from Figure 5, reproduced below) is applied to pin 60 "by an object O." *Id.* at 6:10–13.

FIG. 5



Excerpt from Fig. 5 of the '269 patent showing force F being applied by object O.

As shown in Figure 5, inwardly directed force F is applied to button portion 61 of pin 60. Button portion 61 is accessible through central bore 44 extending

through head 40. *Id.* at 5:1–3. Pin button 61 is accessible "such that it can be *depressed*" to allow head 40, bracket 30, and faceguard 20 to be disconnected from washer 70 and shell 15. *Id.* at 5:39–42 (emphasis added). Inwardly directed force F displaces pin 60 within sleeve 50 and towards the washer 70. *Id.* at 6:14–16. This displacement allows sleeve 50, pin 60, head 40, and spring 80 to be disconnected from washer 70. *Id.* at 6:25–29. Once these components are disconnected, bracket 30 can be removed to allow for removal of faceguard 20, as shown in Figure 6. *Id.* at 6:34–37.

C. Representative Claim

Claims 1 and 13 are independent claims. Claim 1, reproduced below, is representative of the claimed invention:

> 1. A sports helmet comprising:
>
> a shell;
>
> a faceguard;
>
> a faceguard connector assembly having a bracket with at least one channel that receives an extent of the faceguard, the faceguard connector assembly further having a releasable coupler mechanism that extends through both the bracket and an opening in the shell to secure the faceguard to the shell in a use position, the releasable coupler mechanism including:
>
> a washer having a main body that extends substantially perpendicular from a flange of the washer, the main body having a central opening and extending into and positioned within the shell opening;
>
> a cylindrical body that extends through the bracket and the shell opening, wherein an extent of the cylindrical body is received by the central opening of the washer in the use position; and,
>
> a head positioned within the bracket, the head configured to receive a tool that applies an actuation force; and,
>
> wherein the actuation force is applied to the coupler mechanism to move the coupler mechanism from the use position to a

> disconnected position that allows for removal of the bracket from the shell to permit the faceguard to be displaced with respect to the shell.

Claim 13 is substantially the same as claim 1 but recites in the preamble a "quick release connector for securing a faceguard to a football helmet." *See* Ex. 1001, 10:16–39.

II. ANALYSIS

A. Claim Construction

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 40.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016). Under that standard, and absent any special definitions, we give claim terms their ordinary and customary meaning, as would be understood by one of ordinary skill in the art at the time of the invention. *In re Translogic Tech., Inc*., 504 F.3d 1249, 1257 (Fed. Cir. 2007). "There are only two exceptions to this general rule: 1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution." *Starhome GmbH v. AT & T Mobility LLC*, 743 F.3d 849, 856 (Fed. Cir. 2014) (citations omitted).

The correct inquiry in giving a claim term its broadest reasonable interpretation in light of the specification is "an interpretation that corresponds with what and how the inventor describes his invention in the specification, *i.e.*, an interpretation that is 'consistent with the specification.'" *In re Smith Int'l, Inc.*, 871 F.3d 1375, 1382–83 (Fed. Cir. 2017) (citations omitted). The broadest *reasonable* interpretation differs from the "broadest *possible* interpretation." *Id.*

Only terms that are in controversy need to be construed expressly, and then only to the extent necessary to resolve the controversy. *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc*., 200 F.3d 795, 803 (Fed. Cir. 1999).

Petitioner does not propose any specific claim constructions. Pet. 20.

In its Preliminary Response, Patent Owner proposed a specific construction for the phrase "releasable coupler mechanism" (Prelim. Resp. 7–10) and for the phrase "actuation force" (*id.* at 10–11). Patent Owner proposed that the broadest reasonable construction of the phrase "releasable coupler mechanism" is "a coupling mechanism that provides for *rapid* attachment and detachment of a faceguard." Prelim. Resp. 7 (emphasis added). Patent Owner proposed that the broadest reasonable construction of the phrase "actuation force" is "a force applied to the coupler mechanism that includes at least an inward component." Prelim. Resp. 10.

In our Decision to institute a trial, we construed the two terms proposed by Patent Owner in its Preliminary Response. Dec. Inst. 7–16. We determined that the phrase "releasable coupler mechanism," as used in the challenged claims, is a coupler mechanism that does not employ a threaded connector, such as a screw, that is rotated to attach or detach a component, such as a faceguard. *Id.* at 13. We determined that an "actuation force" is a force that lacks a rotational component. *Id.* at 16.

Patent Owner now states, "the Board need not construe either 'releasable coupler mechanism' or 'actuation force' in order to complete its review on the instituted grounds." PO Resp. 7. Patent Owner also states, however, that "[s]hould the Board determine that it needs to construe 'releasable coupler mechanism' or 'actuation force' to complete its review" (*id.*), Patent Owner agrees with the Board's construction of "releasable coupler mechanism" adopted in the

Decision to Institute (*id.* at 10). *See also id.* at 13 (following its own analysis of the evidence, Patent Owner states "Patent Owner therefore agrees with the Board's proposed construction of 'releasable coupler mechanism'").

Patent Owner does not agree, however, with the Board's construction of "actuation force." *Id.* at 14. Patent Owner reaches this conclusion notwithstanding its statement that the Board's construction of "actuation force" is "[c]onsistent with [the Board's] construction of 'releasable coupler mechanism,'" with which Patent Owner agrees. *Id.* While Patent Owner agrees with the Board that "the claimed 'actuation force' does not include unscrewing a threaded screw," it asserts that "the 'actuation force' does not exclude **all** rotational forces." *Id.*

Because claim terms generally 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, we consider the level of ordinary skill in the art as part of claim construction. Thus, before addressing the merits of claim construction, we first determine the level of skill of a person having ordinary skill in the art.

1. Level of Ordinary Skill

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) ("the level of skill in the art is a prism or lens through which a judge, jury, or the Board views the prior art and the claimed invention"). Factors pertinent to a determination of the level of ordinary skill in the art include: (1) educational level of the inventor; (2) type of problems encountered in the art: (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology, and (6) educational level of workers active in the field. *Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 696–697 (Fed. Cir. 1983) (citing *Orthopedic Equip. Co. v. All Orthopedic Appliances, Inc.*,

707 F.2d 1376, 1381–82 (Fed.Cir.1983)). Not all such factors may be present in every case, and one or more of these or other factors may predominate in a particular case. *Id.* Moreover, these factors are not exhaustive but are merely a guide to determining the level of ordinary skill in the art. *Daiichi Sankyo Co. Ltd, Inc. v. Apotex, Inc*., 501 F.3d 1254, 1256 (Fed. Cir. 2007).

In determining a level of ordinary skill, we also may look to the prior art, which may reflect an appropriate skill level. *Okajima,* 261 F.3d at 1355. Additionally, the Supreme Court informs us that "[a] person of ordinary skill is also a person of ordinary creativity, not an automaton." *KSR Int'l v. Teleflex Inc.,* 550 U.S. 398, 421 (2007).

Petitioner does not present an evidence-based analysis of factors typically considered in determining the level of ordinary skill. Petitioner merely states a conclusion without any analysis or persuasive evidence to support that conclusion. Petitioner's entire assertion concerning the level of ordinary skill is the following sentence:

> It is contemplated that a person of skill in the art ("POSITA") in the field of coupling and release mechanisms at the time of the invention of the '269 patent would have a bachelor's degree in engineering *or* more than three years of experience in product design, with specific experience in attachment and release mechanism design.

Pet. 50 (emphasis added). Petitioner does not cite any evidence in the Petition to support this assertion.[5]

[5] Petitioner cites to the Declaration of Mr. Float in its Reply. Pet. Reply 9 (citing Ex. 1028 ¶ 65). Mr. Float's declaration testimony merely restates Petitioner's conclusion without any analysis, facts, or data to support that conclusion. As such, his testimony on this issue is entitled to little if any probative weight. 37 C.F.R. § 42.65. We further note that Petitioner did not provide this evidence with the Petition and consequently Patent Owner did not have notice or an opportunity to respond.

Patent Owner proposes a higher level of ordinary skill than that asserted by Petitioner. According to Patent Owner, a person of ordinary skill would have had "a degree in a relevant technical, physics or engineering field *and* at least two years of experience in designing and engineering sports helmets. Alternatively, a POSITA could have at least five years of experience designing sports helmets, even without the relevant technical degree." PO Resp. 21–22 (citing Ex. 2001 ¶ 21) (emphasis added). Mr. Shewchenko testifies that he is aware of "the factors that may be considered in determining the level of ordinary skill in the art." Ex. 2001 ¶ 16. These factors include: (1) the education level of the inventor; (2) the types of problems encountered in the art; (3) the prior art solutions to those problems; (4) the rapidity with which innovations are made; (5) the sophistication of the technology; and (6) the education level of active workers in the field. *Id.* Mr. Shewchenko also testifies that "[g]iven the potential for significant injury, football (and other contact sports) has instituted rigid safety standards for helmets." *Id.* at 20 (citing the National Operating Committee on Standards for Athletic Equipment ("NOCSAE") safety guidelines for athletic equipment (Exhibit 2003)). Mr. Shewchenko concludes "[i]n view of these potential safety hazards and stringent performance requirements associated specifically with the design of helmets for contact sports," it is his opinion that:

> a person of ordinary skill in the art with respect to the '269 patent would have [had] a degree in a relevant technical, physics, or engineering field and at least two years of experience designing and engineering sports helmets. Alternatively, one could be considered a person of ordinary skill in the art without the relevant technical degree with at least five years of experience designing sports helmets."

Id. at 21.

We have not been directed to any evidence in the record concerning the educational level of the inventors of the '269 patent; the rapidity with which

innovations in the relevant technology are made; or the educational level of workers active in the field.

The type of problems discussed in the '269 patent suggest skill involving strength of materials, attachment systems, durability, and safety performance requirements. *See* Ex. 2001 ¶ 20. The prior art also suggests these same areas of skill.

Based on the evidence before us, we adopt the level of skill proposed by Patent Owner and determine that a person of ordinary skill would have had a degree in a relevant technical, physics or engineering field and at least two years of experience in designing and engineering sports helmets. Alternatively, a person of ordinary skill in the art without the relevant technical degree would have had at least five years of experience designing sports helmets.

2. "releasable coupler mechanism"

As stated above, Patent Owner agrees with the construction of the phrase "releasable coupler mechanism" in the Decision to Institute. PO Resp. 10, 13. We reach the same construction in this Final Written Decision, which we explain below. Petitioner's Reply does not comment on the construction of this phrase.

a. Claims

"[T]he claims define the scope of the right to exclude; the claim construction inquiry, therefore, begins and ends in all cases with the actual words of the claim." *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1248 (Fed. Cir. 1998) (citations omitted). "[T]he resulting claim interpretation must, in the end, accord with the words chosen by the patentee to stake out the boundary of the claimed property." *Id.*

Independent claims 1 and 13 each recite specific elements of the "releasable coupler mechanism." The recited elements of the "releasable coupler mechanism"

include "a washer," "a cylindrical body," and "a head." The "head" in each claim is configured to "receive a tool that applies an actuation force." The direction of the actuation force is *not* recited in claims 1 and 13.

In construing the claim language, we also consider the patent law doctrine of claim differentiation. The doctrine of claim differentiation is "based on the common sense notion that different words or phrases used in separate claims are presumed to indicate that the claims have different meanings and scope." *Karlin Tech. Inc. v. Surgical Dynamics, Inc.*, 177 F.3d 968, 971–72 (Fed. Cir. 1999). The doctrine is "not a hard and fast rule, but instead 'a rule of thumb that does not trump the clear import of the specification.'" *Starhome v. AT & T Mobility*, 743 F.3d at 858 (quoting *Edwards Lifesciences LLC v. Cook Inc.*, 582 F.3d 1322, 1332 (Fed. Cir. 2009)); *see also Netcraft Corp. v. eBay, Inc.*, 549 F.3d 1394, 1400 n.1 (Fed. Cir. 2008) ("While claim differentiation may be helpful in some cases, it is just one of many tools used by courts in the analysis of claim terms.").

Dependent claim 2 addresses the direction of the actuation force applied to the coupler mechanism. It recites the negative limitation that "the actuation force lacks a rotational component." Dependent claims 7 and 18 each recite that a component of the "releasable coupler mechanism," the "cylindrical body," "lacks threads." As dependent claims, these claims further limit the claims from which they depend. As such, as an initial premise, these *dependent* claims suggest that, under the doctrine of claim differentiation, the construction of the phrase "releasable coupler mechanism" in *independent* claims 1 and 13 is broader than, and thus does not include, limitations on the direction of the actuation force ("lacks a rotational component," as recited in claim 2) or any exclusion of threads ("lacks threads," as recited in claims 7 and 18). As we explain below, however, the doctrine of claim differentiation does not control the outcome here.

b. Specification

The Abstract summarizes the "invention" by stating "[t]he present invention is directed to an improved sports helmet including a *quick release* connector assembly for the faceguard that allows for rapid disconnection of the faceguard from the helmet shell . . . [using] [a]n *inwardly directed actuation force that lacks a rotational component*." Ex. 1001, Abstract (emphasis added). This summary emphasizes that the quick-release feature of the "releasable coupler mechanism," and the rapid disconnection function, are dependent on an inwardly directed force that does not have a conventional rotational component.

In describing the "Technical Field" of the disclosed invention, the Specification states: "[t]he invention relates to a protective helmet, namely for contact sports, having a faceguard and a quick release connector that allows for rapid disconnection of the faceguard from the helmet shell *by the application of an inwardly directed force*, *without rotation* of the object applying the force." Ex. 1001, 1:19–24 (emphasis added). This description also emphasizes that the speed of connecting or disconnecting the faceguard using a "releasable coupler mechanism" depends on an inwardly directed force that does not have a conventional rotational component,

The Detailed Description of the disclosed invention describes a "*releasable coupler mechanism* 35 that provides for rapid attachment and detachment of the bracket 30 and the faceguard 20 from the shell 15 *without* the deliberate and time-consuming use of a *screwdriver* (or cutting tool for removal)." *Id.* at 4:42–46 (emphasis added). Again, the structure that provides for rapid attachment and detachment is based, in part, on lack of a rotational force exerted by a screwdriver.

c. Prosecution History

During prosecution, one of the named inventors, Mr. Ide, submitted a

Declaration in which he stated:

> *Conventional* protective sports helmets, for example football helmets, include faceguard connectors with components that preclude rapid attachment and detachment of the faceguard to the helmet. These components include a threaded fastener that is received by a retaining nut, wherein the *threaded fastener* is *rotatably actuated* by a *screwdriver* or Phillips screwdriver during both attachment and detachment of the faceguard.

Ex. 1002, 105 (emphases added). Mr. Ide emphasized that "the long felt need in the industry is two-fold: rapid attachment of the faceguard to the helmet and rapid detachment of the faceguard, both *without the time-consuming rotation of a threaded fastener*." *Id.* at 206 (emphases added). Mr. Ide's statements are consistent with similar statements in the Specification. *E.g.*, Ex. 1001, 1:48–2:7. Again, the distinction argued over prior conventional devices is lack of rotational movement of a threaded fastener.

Applicants also argued that "Ide's[6] *rotational fastener* engagement contradicts the quick-release connector assembly, including the releasable coupler mechanism, required by [then pending] independent Claims 1, 8 and 16." Ex. 1002, 283–84 (emphasis added). Again, the argued patentable distinction was based on lack of a rotational fastener. Then pending independent claims 1, 8, and 16, referred to in the Supplemental Reply each used the phrase "a releasable coupler mechanism." *Id.* at 277–279. We note, however, that pending application claim 1 also included a phrase that "an *inwardly directed actuation force* is applied to the coupler mechanism to move from the use position to the disconnected position." *Id.* at 277 (emphasis added). Pending application claim 8 also included a phrase that "the actuation force being applied substantially perpendicular to the

[6] This is the same Ide reference relied upon by Petitioner in this proceeding.

bracket [of the connector assembly]." *Id.* at 278. Thus, consistent with the Specification, discussed above, the argued distinction from a rotational fastener was based on the difference between a rotational force and an inward or perpendicular force.

d. Conclusion regarding "releasable coupler mechanism"

Based on the analysis above, we are persuaded that the evidence establishes that the phrase "releasable coupler mechanism," as used in the challenged claims, is a coupler mechanism that does *not* employ a threaded connector, such as a screw, that is rotated to attach or detach a component, such as a faceguard.

3. "Actuation Force

Independent claims 1 and 13 each recite that a "head" element of the "releasable coupler mechanism" is "configured to receive a tool that applies an actuation force." Consistent with this recitation, the claims also recite that "the actuation force" is applied to the "coupler mechanism" to move or displace the coupler mechanism from the use position to a disconnected position.

In our Decision to Institute, we construed the term "actuation force" to mean a force that lacks a rotational component. Dec. Inst. 16.[7] Petitioner agrees with this construction (Pet. Reply 3 ("The Board correctly construed the term 'actuation

[7] We note that the District Court presiding over the related litigation between Petitioner and Patent Owner, cited in Section I. A above, adopted the same construction for the term "actuation force" as did the Board in the Decision to Institute. *See* Ex. 1031, 38–39 ("The Court concludes that, during prosecution, the patentees narrowed the term 'actuation force' to cover only a force that lacks a rotational component. This construction is supported by the patentees' repeated references in the patent specification to a lack of rotational component. All told, there is evidence sufficient to overcome the presumption created by claim differentiation."). We are aware that the District Court is not bound to apply the broadest reasonable interpretation of a claim term, as is the Board.

force'")); Patent Owner does not (PO Reply 14 ("the 'actuation force' does not exclude **all** rotational forces")).

In its Preliminary Response, Patent Owner asserted that the broadest reasonable construction of the phrase "actuation force," recited in independent claims 1 and 13 is "a force applied to the coupler mechanism that includes at least an inward component." Prelim. Resp. 10. We disagreed. Dec. Inst. 13. Now, Patent Owner asserts a different construction of the term "actuation force." Patent Owner's revised position is that "a more appropriate construction" of the term "actuation force" is "a force that lacks the rotational component needed to disconnect a conventional threaded connector." PO Resp. 17. When viewed side-by-side, these two constructions appear to be similar:

Dec. Inst. Construction	Patent Owner's Construction
a force that lacks a rotational component	a force that lacks the rotational component needed to disconnect a conventional threaded connector

Thus, Patent Owner agrees that the term lacks a rotational component, but limits this to structures that use a conventional threaded connector. Again, we disagree. As explained below, the Specification and prosecution history do not support Patent Owner's position.

In support of its position, Patent Owner asserts that the Specification and prosecution history establish that the "actuation force" recited in the claims is limited to a "rotational force required to unscrew a threaded screw." PO Resp. 14. We disagree with Patent Owner's analysis.

To be sure, the Specification and prosecution history refer to threaded screws. The claimed "actuation force" is not so limited.

Patent Owner relies, for example, on the following passage in the Specification (PO Resp. 14–15 (citing Ex. 1001, 7:1–7)):

> Unlike conventional faceguard connectors that employ a threaded fastener (or screw) which requires rotation for loosening and removal, *the actuation force F does not include a rotational component*. Thus, *the actuation force F lacks the time-consuming rotational component* and provides a more efficient disconnection process.

Ex. 1001, 7:1–7 (our emphasis added). This passage clearly distinguishes the claimed "actuation force" from a conventional threaded fastener or screw. In characterizing the claimed "actuation force," the Specification makes clear that the claimed "*actuation force F does not include a rotational component*." *Id.* at 7:4–5. The Specification does not limit the lack of a rotational component to situations involving a threaded screw. The description of actuation force is absolute; it "*does not include a rotational component.*" *Id.* The next sentence of the Specification is consistent with, and confirms, the unqualified description of actuation force F. This next sentence states, "*the actuation force F lacks the time-consuming rotational component.*" *Id.* at 7:5–6. Again, there is nothing to suggest that this unqualified description of actuation force F is limited to situations involving a threaded screw.

Patent Owner asserts that "[t]he prosecution history also supports Patent Owner's position" on the construction of the term "actuation force." PO Resp. 16. Patent Owner points specifically to the Examiner's Reasons for Allowance. *Id.* at 16–17. We disagree.

In the Reasons for Allowance, the Examiner stated, as an additional reason for allowing the claims, that "the actuation force (F) is applied inwardly, i.e., pushing in the direction dictated by reference character F [*see* Figure 5], which causes the disengagement of the coupler from the shell." Ex. 1002, 23. The Reasons for Allowance were included in the Office Action mailed June 3, 2014

(*id.* at 18–24), which was responsive to the Applicant's response filed May 8, 2014 (*id.* at 22).

The May 8, 2014 Response (*id.* at 42–51) cancelled most of the then pending claims, including claims 1–7, 10–26, and 28–30. *Cancelled* claim 1 included a limitation that "an inwardly directed actuation force is applied to the coupler mechanism." *Id.* at 82. The Response also amended then pending independent claims 8 and 27, and added several new dependent claims. The amendment to then pending independent claim 27 *cancelled* claim language about the "inwardly directed actuation force." *Id.* at 46. Application claim 8 did not contain any limitation that referred to an actuation force applied inwardly. Application claim 8 became patent claim 1; application claim 27 became patent claim 13. *Id.* at 41. Thus, when the Examiner issued the Reasons for Allowance, none of the pending allowed claims contained any limitation that limited the claims to an inwardly directed actuation force. The Examiner's reference to this limitation in the Reasons for Allowance appears to have been based on language or claims that were cancelled. The cancelled claim language cannot serve as basis for patentably distinguishing the allowed and issued claims from the cited references.

Patent Owner provided a generic comment on the Reasons for Allowance (*id.* at 12–13), but did not point out or note that the Examiner referred to *cancelled* claim language as a reason for allowance.

Patent Owner now relies on the erroneous reference to an inwardly directed actuation force in the Reasons for Allowance as evidence in support of its proffered claim construction. PO Resp. 16–17. In essence, Patent Owner argues we should add to the claims, by way of our claim construction, language that the applicant specifically deleted from the claims. We find unpersuasive this argument and the evidence on which it relies. We may construe a claim, but we may not

redraft a claim. *Chef Am., Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1374 (Fed. Cir. 2004) ("This court, however, repeatedly and consistently has recognized that courts may not redraft claims.").

Patent Owner also asserts that Petitioner's expert, Mr. Float, testified on his cross-examination that the actuation force includes a rotational component. PO Resp. 17. Mr. Float's testimony is not as specific as Patent Owner suggests.

Mr. Float was asked, "do you have any basis for disagreeing with the [B]oard's proposed construction of actuation force [in the Decision to Institute]?" Ex. 2004, 74:16–18. His answer was an unambiguous "No." *Id.* at 74:19. He explained that initially he read this term to include a rotational component. *Id.* at 74:19–20. After reading the Decision to Institute, however, he testified that he had "[n]o" basis for disagreeing with the Board's construction of the term "actuation force." *Id.* at 74:19.

Based on the analysis above, we maintain the construction of the term "actuation force" from our Decision to Institute, which is that an "actuation force" is a force that lacks a rotational component.

B. Asserted Grounds of Unpatentability

1. Obviousness Based On Ide in View of Szendel Claims 1, 4, 5–8, 13, 15, and 16–19

Section 103(a) "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*, 550 U.S. at 406. 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 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); see *KSR*, 550 U.S. at 407 ("While the sequence of these questions might be reordered in any particular case, the [Graham] factors continue to define the inquiry that controls."). The Court in *Graham* explained that these factual inquiries promote "uniformity and definiteness," for "[w]hat is obvious is not a question upon which there is likely to be uniformity of thought in every given factual context." *Id.* at 18.

The Supreme Court made clear that we apply "an expansive and flexible approach" to the question of obviousness. *KSR*, 550 U.S. at 415. Whether a patent claiming the combination of prior art elements would have been obvious is determined by whether the improvement is more than the predictable use of prior art elements according to their established functions. *Id*. at 417. To reach this conclusion, however, it is not enough to show merely that the prior art includes separate references covering each separate limitation in a challenged claim. *Unigene Labs., Inc. v. Apotex, Inc*., 655 F.3d 1352, 1360 (Fed. Cir. 2011). Rather, obviousness additionally requires that a person of ordinary skill at the time of the invention "would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention." *Id*.

Moreover, in determining the differences between the prior art and the claims, the question under 35 U.S.C. § 103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious. *Litton Indus. Products, Inc. v. Solid State Systems Corp*., 755 F.2d 158 (Fed. Cir. 1985) ("It is elementary that the claimed invention must be considered as a whole in deciding the question of obviousness."); *see also Stratoflex, Inc. v. Aeroquip Corp*., 713 F.2d 1530, 1537

(Fed. Cir. 1983) ("[T]he question under 35 U.S.C. § 103 is not whether the differences themselves would have been obvious. Consideration of differences, like each of the findings set forth in Graham, is but an aid in reaching the ultimate determination of whether the claimed invention as a whole would have been obvious.").

"A reference must be considered for everything it teaches by way of technology and is not limited to the particular invention it is describing and attempting to protect." *EWP Corp. v. Reliance Universal Inc.*, 755 F.2d 898, 907 (Fed. Cir. 1985).

As a factfinder, we also must be aware "of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning." *KSR*, 550 U.S. at 421. This does not deny us, however, "recourse to common sense" or to that which the prior art teaches. *Id*.

Against this general background, we consider the references, other evidence, and arguments on which the parties rely.

a. Scope and Content of the Prior Art

i. Ide (Ex. 1020)

Ide is directed to a football helmet that includes a face guard connector. Ex. 1020, 2:52–55 ("Another feature of the present invention is that there may be a face guard connected to at least both sides of the helmet by the face guard connectors"). Figure 8 of Ide, as annotated by Petitioner, is reproduced below.

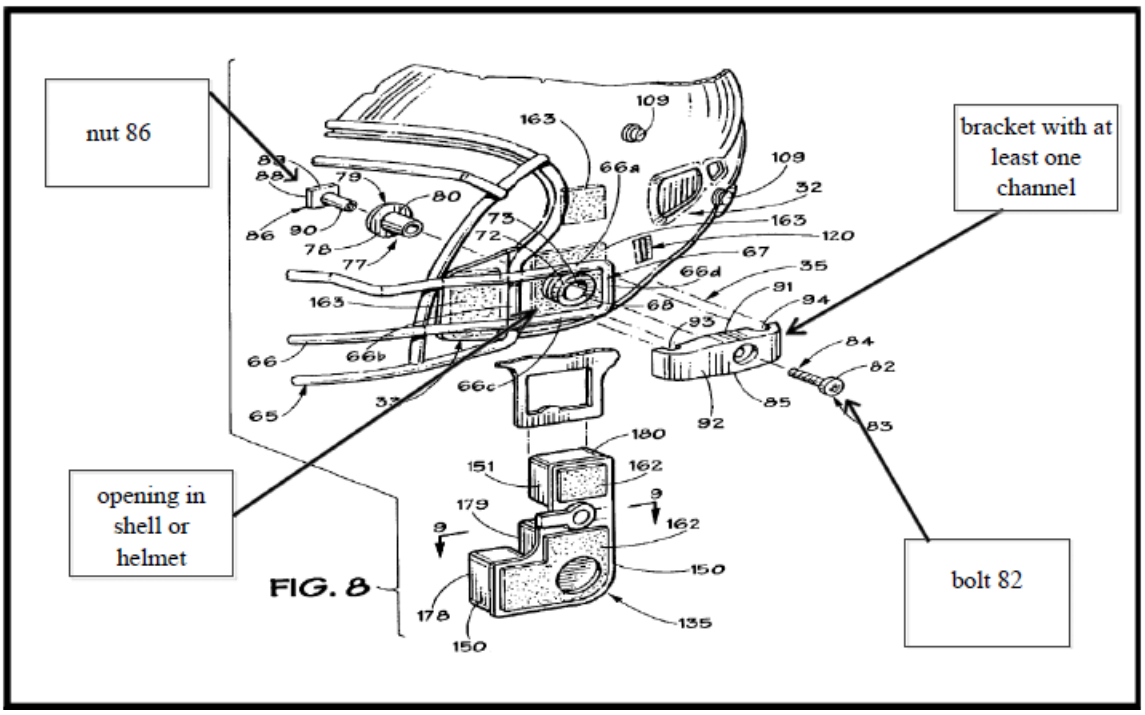


Figure 8 from Ide, annotated by Petitioner (Pet. 26) is a partial exploded perspective view of a portion of a football helmet

Ide discloses football helmet 30 (*see* Fig. 1A) with face guard connectors 35. Face guard connectors 35 are adapted to connect a portion of face guard 65 to helmet shell 31. Ex. 1020, 6:35–37. Face guard connector 35 is disposed on each side 43, 44 of shell 31. *Id.* at 6:37–38.

An important aspect of the Ide disclosure is that face guard connector 35 includes a shock absorber member 67 adapted to distribute an impact force exerted upon face guard 65, through shell 31. Preferably, each shock absorber member 67 includes grommet 68 disposed in opening 69 formed in sides 43, 44 of shell 31. *Id.* at 6:55–57. Grommet 68 is made from rubber, or any other suitable elastomeric material that will permit distribution of an impact force. *Id.* at 6:57–61.

Bolt 82, having first and second ends 83, 84, passes through bushing 77 and face guard connector body members, or clips, 85, 85' of each face guard connector 35. *Id.* at 7:38–41. Nut 86 receives second end 84 of bolt 82. *Id.* at 7:41. Bolt 82

is "*rotatably threaded and rotated*" with respect to nut 86, thereby securing face guard 65 to each side of shell 31. *Id.* at 7:42–44 (emphasis added). Thus, the nut and bolt connector disclosed in Ide is an example of the "conventional faceguard connectors" referred to in the '269 patent that employ a threaded fastener (or screw) which requires rotation for loosening and removal, and thus has a "rotational component." *See* Ex. 1001, 7:1–7.

We also note that the Ide reference asserted in the Petition is the same reference considered and applied by the Office during prosecution of the application that matured into the '269 patent. *See, e.g.*, Ex. 1002, 61 ("Claims 1–3, & 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ide (USPN 6,934,971) in view of Kitzis (USPN 6,722,711)."). During prosecution, the Examiner determined that Ide does not disclose the "releasable coupler mechanism" recited in the challenged claims. *E.g.*, Ex. 1002, 65 ("Ide does not disclose a releasable coupler mechanism with a head component, a washer, an elongated pin or a sleeve.").

ii. Szendel (Ex. 1022)

Szendel discloses a quick-release type axle system for in-line roller skates. Ex. 1022, Abstract. For context, we reproduce below Figure 1 from Szendel.

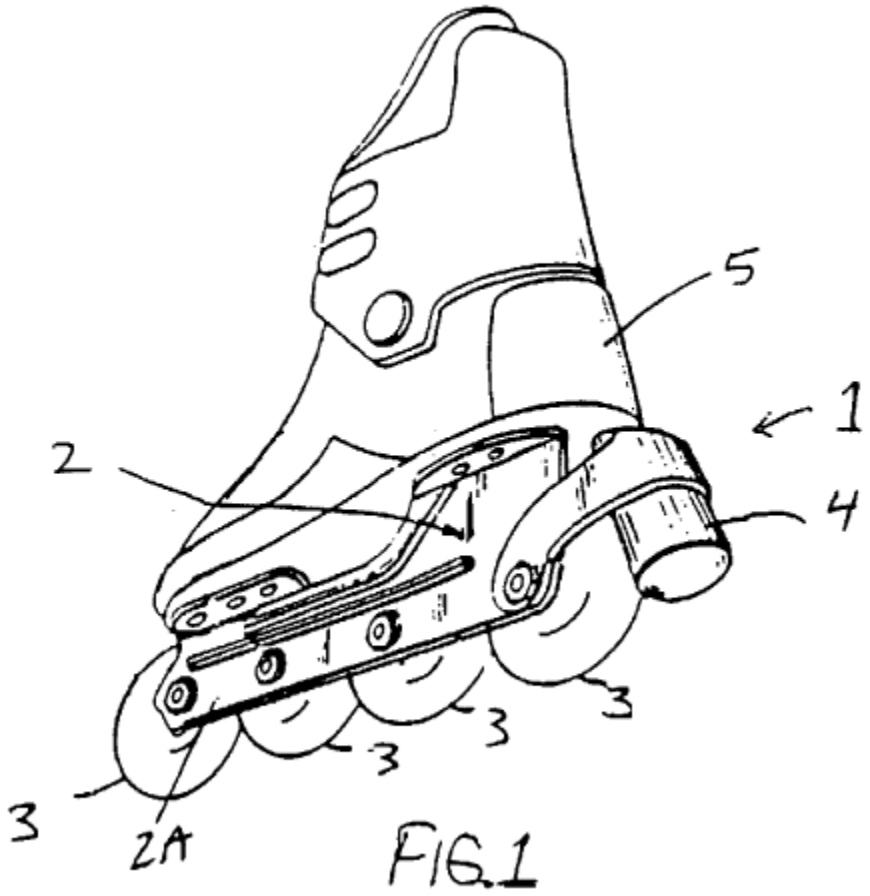


Figure 1 from Szendel is a perspective view of an in-line roller skate having a quick-release axel system

As shown in Figure 1, Szendel's in-line skate includes frame 1 having a pair of spaced apart frame rails 2A and 2B; wheels 3, supported between the frame rails by a quick-release axle system (unnumbered); brake structure 4; and boot portion 5 mounted to frame 1.

Figure 3 from Szendel, with coloring and annotations added by Patent Owner (PO Resp. 37), is reproduced below.

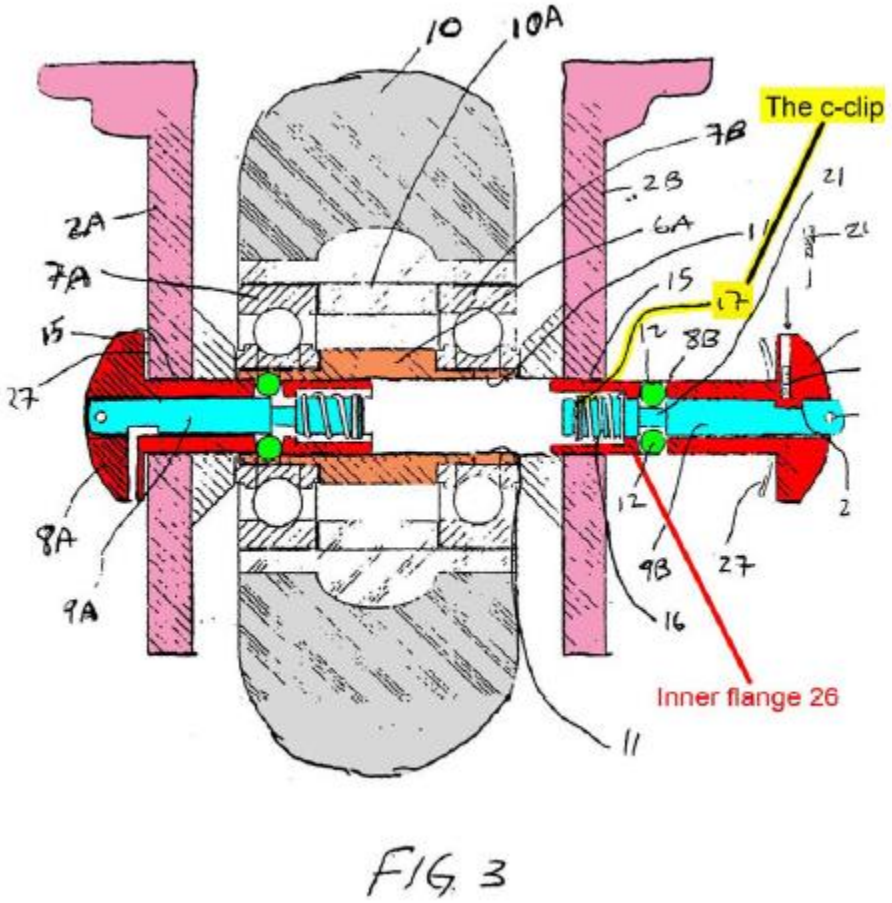


Figure 2 from Szendel, annotated by Patent Owner (PO Resp. 37), is a cross-sectional view of the disclosed quick-release axle system

As shown in Figure 3, Szendel's quick-release axle system comprises three basic subcomponents: (1) bearing spacer 6 (shown in orange) installed between bearing assemblies 7A and 7B; (2) first and second axle shafts 8A and 8B (shown in red); and first and second axle-shaft release pins 9A and 9B (shown in blue). Ex. 1022 ¶ 38.

Axle shaft 8A, shown on the left in Figure 3, is in its "locked and ready" position. *Id.* at ¶ 23. In this locked configuration, cylindrical portion 19 of release pin 9A "renders it impossible" for ball bearings 12 to move downward, or out of their corresponding detents, thus providing a locking mechanism. *Id.* at ¶ 45.

Axle shaft 8B, shown on the right in Figure 3, is in the "release position." *Id.* at ¶ 23. When the release pin 9A is pulled outwardly from axle shaft 6A, ball bearings 12 are permitted to fall within circumferential groove 21 formed in the release pin. *Id.* at ¶ 46. In this unlocked configuration, axle shaft 8 is released from the bearing spacer and can be withdrawn from the bearing spacer, wheel assembly, and skate frame. *Id.* When both release pins on a particular wheel have been "released" or arranged into their unlocked configuration, then the axle shaft can be withdrawn from the bearing spacer and the wheel assembly easily removed from the frame of the in-line skate. *Id.*

Szendel discloses that pulling the spring-biased release pin out from its corresponding axle shaft can be carried out using a small tool, (e.g., a paper clip or an accessory device). *Id.* at ¶ 47. The tool is slid through hole 22 formed in the end of the release pin and allows the release pin to be pulled out slightly (against the force of the return spring) so that the balls 12 retaining the axle shaft within the bearing spacer can be allowed to fall out of their corresponding holes. *Id.*

iii. Discussion

Petitioner relies on Ide for the disclosure of all the limitations in claims 1, 4, 13, and 15. Pet. 50, 52, 54, 55 (*e.g.*, Pet. 50, heading of Section V(C)(2)(a)(i), "Ide . . . Discloses All Of The Limitations Of Contested Claims 1, 4, 13, And 15"). Petitioner relies on Szendel for the disclosure of the elements recited in claims 5–8 and 16–19. *E.g., id.* at 50 ("Szendel Discloses . . . [the limitations in] [Claims 5 and 16]").

a) Claims 1, 4, 13, and 15

In its assertion that Ide anticipated independent claims 1, 4, 13, and 15, the Petition asserts an element-by-element comparison of each limitation in claims 1, 4, 13, and 15 with the disclosure of Ide. Pet. 24–36. In asserting why the

challenged claims would have been obvious based on Ide and Szendel, Petitioner identifies elements in Szendel that correspond to the elements and limitations in dependent claims 5–8, and 16–19. *Id.* at 50–55.

We determined in our Decision to Institute that Ide did not disclose the elements and limitations in claims 1, 4, 13, and 15 based on our construction of the terms "releasable coupler mechanism" and "actuation force." We have maintained these same constructions in this Final Decision. Thus, Petitioner must rely on Szendel to disclose these elements and limitations.

In its Reply, Petitioner misconstrues and thus mischaracterizes the determination in our Decision to Institute. Pet. Reply 10. Petitioner states the "Board agreed" that "the combination of Ide and Szendel discloses every limitation of instituted independent Claims 1 and 13." *Id.* Our Decision to Institute determined only that "it is reasonably likely that it would have been obvious for a person of ordinary skill and creativity to substitute the fastening mechanism of Szendel as an alternative for the screw and nut system of Ide." Dec. Inst. 25.

We also stated, however, that:

> Our review of the Petition under 35 U.S.C. § 314 is not to determine whether an individual asserted fact is indisputable or whether a preponderance of the evidence supports Petitioner. Our review is to determine whether the totality of the information presented in the Petition and Preliminary Response shows that there is a reasonable likelihood that Petitioner would prevail.

Id. at 26. In this Final Decision, we rely on the complete record before us, not just the information presented in the Petition and Preliminary Response. We also require a preponderance of evidence for Petitioner to meet its burden of proof. 35 U.S.C. § 316(e).

The Petition asserts that "Ide . . . Discloses All Of The Limitations Of Contested Claims 1, 4, 13, And 15." Pet. 50 (*see* heading V(C)(2)(a)(i)). In its

Reply, Petitioner concludes, without additional analysis, that "the combination of Ide and Szendel discloses every limitation of instituted independent Claims 1 and 13." Pet. Reply 10. Petitioner states this same conclusion for claims 4 and 15. *Id.*

Petitioner does not, however, specify persuasively what elements of Szendel disclose the releasable coupler mechanism or establish the lack of rotation. Petitioner also does not specify persuasively in the Petition or Reply where Szendel discloses the two segments of the cylindrical body with differing diameters, as required by claims 4 and 15.

Our rules require a petition to specify where each element of the claim is found in the prior art patents or printed publications relied upon. 37 C.F.R. § 42.104(b)(4), (5). It is unclear from Petitioner's argument where each element of challenged claims 1, 4, 13, and 15 is found in either Ide or Szendel and how and why the two references would have been combined.

For example, independent claims 1 and 13 each require a releasable coupler mechanism that requires a "washer," a "cylindrical body," and a "head." Dependent claims 4 and 15 require a cylindrical body with two segments of different diameters. Petitioner has not identified persuasively which elements of Ide or Szendel are being relied upon to meet these limitations, and why it would have been obvious to combine the selected elements.

We decline to speculate as to Petitioner's intentions. Accordingly, Petitioner has not met its burden to establish that claims 1, 4, 13, and 15 are unpatentable.

b) Claims 5, 6, 16, and 17

Claims 5 and 16 require a spring "operably connected to the first segment of the cylindrical body." The antecedent for "cylindrical body" in claims 5 and 16 is found in claims 1 and 4, or claims 13 and 15, from which claims 5 and 16 depend, respectively. Cylindrical body 50 depicted in Figure 3 of the '269 patent is

exemplary of the claimed "cylindrical body." Claims 4 and 15 recite that the cylindrical body has first and second segments with *different* diameters.

Claims 6 and 17 require that a notch formed between the first segment of the cylindrical body and the second segment of the cylindrical body retains the spring.

Petitioner relies on Szendel for the disclosure of spring 16 connected to the cylindrical body of the releasable coupler mechanism, as recited in claims 5, 6, 16, and 17. Pet. 50–51; 52–53.

Petitioner refers to paragraph 43 and Figures 3 and 7 in Szendel for the interaction of spring 16 with release pins 9A, B. *Id.* Petitioner's annotated Figure 7 from Szendel (Pet. 53), illustrating Petitioner's comparison of some claim limitations to the Szendel disclosure, is reproduced below, with coloring added by Patent Owner (PO Resp. 38).

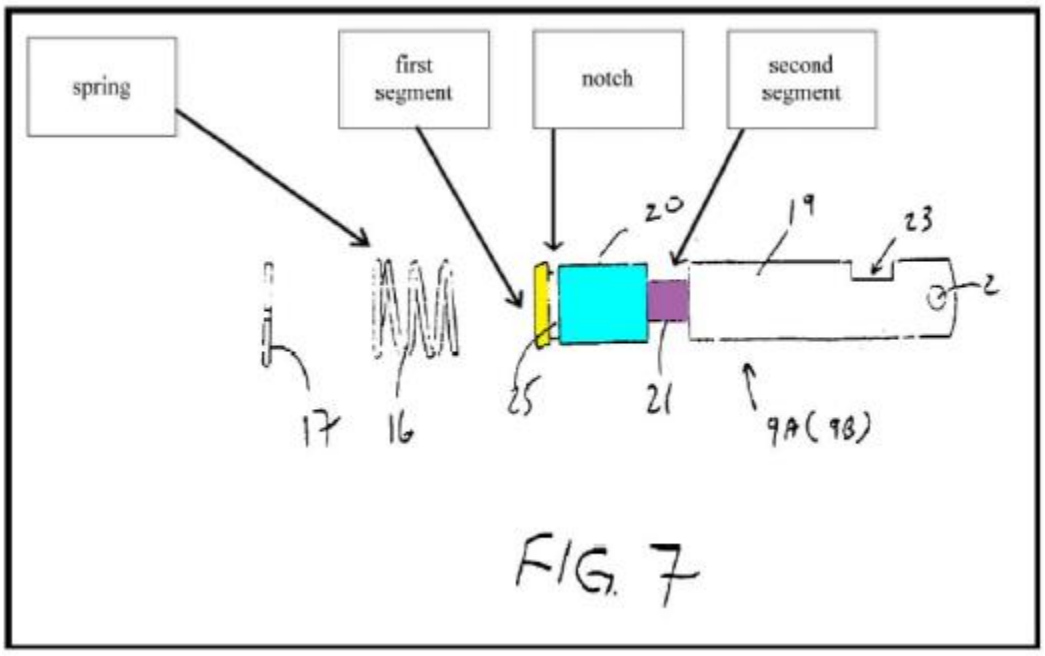


Figure 7 from Szendel, annotated by Petitioner, with color added by Patent Owner is side view of the release pin (9A), spring (16), and C-clip subassembly (17) of the quick-release axle system

As shown in Figure 7, each axle-shaft release pin 9A and 9B has first cylindrical body portion 19 and second cylindrical body portion 20, separated by tapered portion 21 of narrower diameter than the first and second cylindrical portions of the release pin. *Id.* at ¶ 41. Because claims 6 and 17 require a notch between the first and second segments, we agree with Patent Owner's colored version of Petitioner's annotated Figure 7. The "notch" identified by Petitioner is intended to separate the first segment identified by Petitioner (colored yellow by Patent Owner) and the second segment identified by Petitioner (colored purple by Patent Owner).

Thus, based on Petitioner's characterizations of Szendel, claims 5 and 16 require spring 16 of Szendel to be "operably connected to the first segment of the cylindrical body," which is colored yellow in the Figure 7 reproduced above.

Szendel discloses that return spring 16 *is installed over the end of second cylindrical body portion 20*." *Id.* at ¶¶ 41, 43. C-clip retainer 17 is pushed into groove 25[8] in the axle shaft in order to *retain the return spring on the end of body portion 20*. *Id.* at ¶ 43. The function of return spring 16 is to hold the release pin in the locked position within the axle shaft during the vibration encountered while skating. *Id.* With this arrangement, the return spring 16 is "trapped between" c-clip 17 and inner flange 26 machined within the bore of the axle shaft. *Id.*

Patent Owner provided the annotated, colored Figure 3 from Szendel, which is reproduced above. Inner flange 26 is identified correctly by Patent Owner in the annotated, colored Figure 3 from Szendel. Also as shown therein, Szendel's spring 16 is positioned on second body portion 20 of Szendel, *not* on the "first segment"

[8] Patent Owner quotes Paragraph 43 of Szendel, but refers in error to "groove 24." PO Resp.37. Reference numeral 24 in Szendel refers to a "retaining pin or screw." *See* Ex. 1022 ¶ 42.

identified by Petitioner in its annotated Figure 7, and colored yellow by Patent Owner.

As discussed above, Szendel's spring 16 is *not* retained by a notch formed between the first segment of the cylindrical body and the second segment of the cylindrical body. Spring 16 in Szendel is retained by c-clip assembly 17.

Based on the analysis above, Szendel does not disclose the additional limitations recited in claims 5, 6, 16, and 17.

c) Claims 7 and 18

Claim 7, dependent from claim 1, and claim 18, dependent from claim 13, require that the "cylindrical body" recited in claims 1 and 13 lacks threads. Petitioner states that it is relying on Ide for the disclosure of all the elements and limitations in claims 1 and 13 ("Ide . . . Discloses All Of The Limitations Of Contested Claims 1 And 13."). Pet. 54. Petitioner asserts that "Szendel discloses a cylindrical body that lacks threads." *Id.* (citing to the "axle release pins" in Szendel). Petitioner's argument does not remedy the identified defects in the arguments and evidence from which these claims depend.

d) Claims 8 and 19

Claim 8, dependent from claim 1, and claim 19, dependent from claim 13, require that the "washer lacks threads." Petitioner's argument for these claims merely states "*See* Sec. V(C)(2)(c)(ii)" of the Petition. *Id.* at 55. The cited section (*see* Pet. 54) is petitioner's discussion of claims 7 and 18. The cited section does not mention washers or washers without threads. It cites only to the "axle release pins" in Szendel (reference numerals 9A and 9B in Szendel), which Petitioner asserts corresponds to the "cylindrical body" recited in claims 1 and 13. The washer in claims 1 and 13 is recited as an element separate and distinct from the cylindrical body. The Petition states clearly that "*Szendel Discloses*" the

limitations in claims 8 and 19, not Ide. Pet. 55. The Petition fails, however, to identify an element in Szendel that corresponds to the washer recited in claims 8and 19. Thus, Petitioner has not established that Szendel discloses the limitations recited in claims 8 and 19.

e) Rationale

Petitioner's rationale for combining Ide and Szendel is based, in part, on "common sense." Pet. 56–57. Petitioner asserts "*integrating* the unthreaded and spring-biased coupling and release mechanism used in Szendel . . . *with* the coupling and release mechanism of Ide . . . to achieve the claimed invention of Contested Claims 5-8 and 16-19" is a "common sense" change that would have been within the skill of a person of ordinary skill in the relevant technology. *Id.* at 57 (citing Ex. 1028 ¶¶ 71–72) (emphasis added). Mr. Float's testimony in the cited paragraphs is similar to, and supportive of, Petitioner's assertions. Mr. Float also explains that "[t]he spring-biased, unthreaded coupling and release mechanism of Szendel is a known *alternative* to a threaded screw and nut coupling and release mechanism." Ex. 1028 ¶ 74 (emphasis added).

"Common sense" is a conclusory label. It is the final step in a reasoned analysis based on the evidence. References to "common sense"—whether to supply a motivation to combine or a missing limitation—cannot be used as a wholesale substitute for reasoned analysis and evidentiary support, especially when dealing with a limitation missing from the prior art references specified. *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1362 (Fed. Cir. 2016), *cert. denied sub nom. Google Inc. v. Arendi S. A. R. L.*, No. 16-626, 2017 WL 1040877 (U.S. Mar. 20, 2017). Petitioners' failure to explain the "common sense" on which it relies is problematic. *Id.*

As a reason "why" the change would be made, Petitioner asserts Szendel provides a coupling and release mechanism "that is explicitly referred to as an obvious alternative to the threaded screw and nut system of Ide." Pet. 57. We agree that Szendel states that its disclosed system is intended as an improvement to nut and bolt fasteners that use screwdrivers and wrenches, such as the fastener in Ide. Ex. 1022 ¶¶ 5–10. Szendel's disclosed system, however, is a dual-axle connector, that includes bearing spacer 6. Szendel's disclosed system also includes axle assemblies on each side of bearing spacer 6. The dual-axle system includes, among other things: two axle shafts 8A and 8B; two axle shaft release pins 9A and 9B; and multiple locking balls 12. Both the right and left axle shafts must be disengaged before the wheel can be removed. Ex. 1022 ¶ 46, 62.

> The "common sense changes" proposed by Petitioner are to
>
> adapt the structures of one coupler and release mechanism for another coupler and release mechanism, for example, integrating the unthreaded and spring-biased coupling and release mechanism used in Szendel . . . with the coupling and release mechanism or Ide . . . to achieve the claimed invention of Contested Claims 5–8 and 16–19.

Pet. 57.

Thus, Petitioner is proposing substituting the Szendel release mechanism for the Ide release mechanism. There is no persuasive evidence, however, as to why a football helmet would need a bearing spacer, because there are no bearings used in Ide. It is not enough "to merely demonstrate that elements of the claimed invention were independently known in the prior art. Often, every element of a claimed invention can be found in the prior art." *Metalcraft v. Toro*, 848 F.3d at 1367. For this reason, it is necessary to identify "why" a person of ordinary skill would have selectively gleaned some elements or structure from the references relied on to come up with the limitations in the challenged claims. Petitioner has

not provided persuasive evidence or argument as to why a person of ordinary skill would have substituted the entire dual-axle system of Szendel into the helmet of Ide. In addition, there is no persuasive evidence why a person of ordinary skill would have used selectively only certain elements of Szendel, such as using only one unthreaded axle from Szendel, rather than the entire dual-axle system.

"In determining whether there would have been a motivation to combine prior art references to arrive at the claimed invention, it is insufficient to simply conclude the combination would have been obvious without identifying any reason why a person of skill in the art would have made the combination." *Metalcraft v. Toro*, 848 F.3d at 1366. Here we find there is no persuasive evidence establishing why a person of ordinary skill would have substituted Szendel's dual-axle system for Ide's threaded connector, nor is there persuasive evidence why it would have been obvious to glean selectively only one or two components from Szendel's quick-release system to use in Ide's release system.

Also, "[a] factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of argument reliant upon *ex post* reasoning." *KSR*, 550 U.S. at 421 (citation omitted); *Metalcraft v. Toro*, 848 F.3d at 1367 ("[W]e cannot allow hindsight bias to be the thread that stitches together prior art patches into something that is the claimed invention.").

In general, taken out of a specific context, providing an unthreaded connector or washer in the Ide system may seem like a simple, common sense modification that would have been obvious to a person of ordinary skill and creativity. We do not abandon our common sense in considering obviousness of claimed inventions. *KSR*, 550 U.S. at 421. Our decision is based on the evidence and arguments before us. The evidence on which Petitioner relies does not disclose or suggest the elements and limitations recited in the challenged claims.

In the highly developed field of sports helmets and quick-release connectors, small differences may produce a nonobvious advance. *See Outside the Box Innovations, LLC v. Travel Caddy, Inc.*, 695 F.3d 1285, 1298 (Fed. Cir. 2012); *see also Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360–61 (Fed.Cir.2011) (providing that the inquiry under § 103 is not whether the claimed invention is "sufficiently simple to appear obvious to judges after the discovery is finally made"). "The emphasis on nonobviousness is one of inquiry, not quality" of the advance. *Graham*, 383 U.S. at 17.

While "the common sense of those skilled in the art demonstrates why some combinations would have been obvious where others would not," (*Leapfrog Enters., Inc. v. Fisher–Price, Inc*., 485 F.3d 1157, 1161 (Fed. Cir. 2007)), the determination is made not after observing what the inventor actually did, but in light of the state of the art before the invention was made. *Outside the Box Innovations*, 695 F.3d at 1298.

Based on the analysis above, we determine that Petitioner has not established that Ide and Szendel establish all the limitations in the challenged claims. As discussed above, there is no persuasive argument or evidence as to which reference Petitioner relies on for the "washer," "cylindrical body," and "head" elements of the "releasable coupler mechanism." There also is no persuasive argument or evidence as to which reference Petitioner relies on for disclosing a cylindrical body with two segments of different diameters. Petitioner has not identified persuasively which elements of Ide or Szendel are being relied upon to meet these limitations. Moreover, Petitioner has not provided a persuasive rationale for the proposed combination of features gleaned from the references. Accordingly, we determine Petitioner has not met its burden to prove by a

preponderance of the evidence the challenged claims unpatentable based on Ide and Szendel.[9]

2. Obviousness Based On Ide in View of Jadoul
Claims 1, 2, 4, 5–8, 13, 15, and 16–19

Petitioner relies on Ide for disclosure of all the limitations in claims 1, 4, 13, and 15. *E.g.*, Pet. 60 ((heading of Section V(D)(2)(b)(i) – "Ide . . . Disclose[s] All Of The Limitations Of Contested Claims 1, 4, 13, And 15"). Thus, Petitioner relies on Jadoul only for the disclosure of the elements recited in claims 2, 5–8 and 16–19.

Jadoul discloses a quick release mechanism for attaching and detaching one part to another. Jadoul discloses a connector that is intended to replace a screw and nut connector when assembly and disassembly of parts must be done quickly. Ex. 1023, 1:12–16. Figures 1, 5, and 6 from Jadoul are reproduced below.

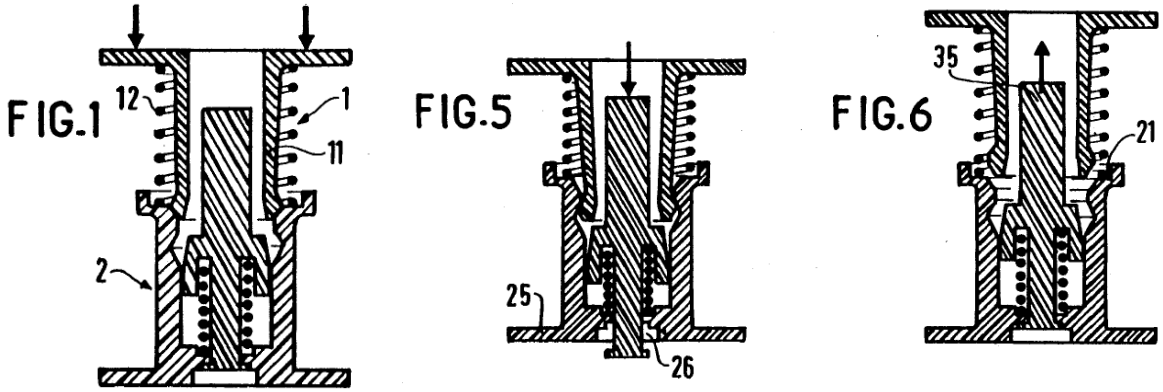


Figure 1 is a section view showing the device while it is being locked. *Id.* at 2:18–19. Figures 5 and 6 are section views showing the device while it is being unlocked. *Id.* at2:22–23.

The device comprises three elements: first fastener 1 fixed to a first part (not shown); second fastener 2 fixed to a second part (also not shown); and cylindrical

[9] Patent Owner also asserts Szendel is not analogous art. PO Resp. 22–30. Based on our determination on the merits of Szendel, we need not reach this issue.

sliding plug 3 (*see* Figure 7). *Id.* at 2:63–65; 3:31–33. First fastener 1 comprises tongues, such as tongues 11. *Id.* at 2:67–68. Cylindrical spring 12 is situated around the tubular portion of fastener 1. *Id.* at 3:1–2. A second spring, spring 4 (*see* Figure 2), is retained within recess 34 formed in shoulder 31 of sliding plug 3. *Id.* at 39–42. Spring 4 opposes insertion of the fastener 1. *Id.* at 3:57–62. One end of the stroke of spring 12 is limited by base 13 of the fastener 1. During locking, one end of spring 12 bears against shoulder 21 (*see* Figure. 7) at the inlet face of the fastener 2. *Id.* at 3:5–9. Sliding plug 3 is extended by rod 35. *Id.* at 3:43–45.

As shown in Figures 5 and 6, to unlock the device, a linear, downward force (Figure 5) of sufficient pressure is applied on the top of rod 35, which is part of sliding plug 3 (*see* Figure 7), to compress spring 4. The plug thus releases the pressure it was applying to the tongues. Under the effect of pressure from spring 12 and faces 17 and 27, the tongues deform, thereby enabling fastener 1 to move upwards. The user can then release the pressure exerted on the rod 35 and thus allow the plug to move up, thereby unlocking the device. *Id.* at 4:9–17.

a. Claims 1, 2, 4, 13, and 15

In its assertion that Ide anticipated independent claims 1 and 13, the Petition provides an element-by-element comparison of each limitation in claims 1 and 13 with the disclosure of Ide. Pet. 24–33. In asserting why the challenged claims would have been obvious based on Ide and Jadoul, Petitioner identifies elements in Jadoul that correspond to the elements and limitations in dependent claims 2, 4, 5–8, 15, and 16–19. *Id.* at 59–64.

We determined in our Decision to Institute that Ide did not disclose the elements and limitations in claims 1, 2, 4, 13 and 15 based on our construction of the terms "releasable coupler mechanism" and "actuation force." We have maintained these same constructions in this Final Decision. Thus, Petitioner must

rely on Jadoul to disclose these elements and limitations.

Petitioner asserts that Jadoul discloses the limitation in claim 2, that the actuation force lacks a rotational component. Petitioner does not, however, specify persuasively what elements of Jadoul disclose the releasable coupler mechanism. Petitioner also does not specify persuasively in the Petition or Reply where Jadoul discloses two segments of the cylindrical body with differing diameters, as required by claims 4 and 15.

Our rules require the petition to specify where each element of the claim is found in the prior art patents or printed publications relied upon. 37 C.F.R. § 42.104(b)(4), (5). As we explain in more detail below, it is unclear from Petitioner's argument where each element of challenged claims 1, 2, 4, 13, and 15 is found in either Ide or Jadoul. We decline to speculate as to Petitioner's intentions. Accordingly, Petitioner has not met its burden to establish that claims 1, 2, 4, 13, and 15 are unpatentable.

b. Claims 5, 6, 16, and 17

In discussing claims 5 and 16, which recite a spring operably connected to the first segment of the cylindrical body, Petitioner identifies spring 12 in Jadoul as corresponding to this claimed spring element. Spring 12 mounts on fastener 1 of Jadoul and abuts shoulder 21 of fastener 2 in Jadoul. Ex. 1023, 3:1–9; Fig. 7. Because spring 12 arguably is "operably connected" to both fastener 1 and fastener 2, one or both of these fasteners must correspond to the claimed "first segment of the cylindrical body." Petitioner, however, does *not* identify which element of Jadoul corresponds to the "first segment of the cylindrical body," as recited in claims 5 and 16.

Claims 6 and 17, which depend from claims 5 and 16[10], respectively, recite that the spring recited in claim 5 is retained in a notch between the first and second segments of the cylindrical body. In addressing these limitations, Petitioner shifts positions and asserts that spring 4 in Jadoul, not spring 12, as asserted in Petitioner's analysis of claims 5 and 16, corresponds to the claimed spring. Pet. 62–63. Petitioner's annotated Figure 7 from Jadoul, which is reproduced below, illustrates Petitioner's analysis and argument with respect to claims 6 and 17.

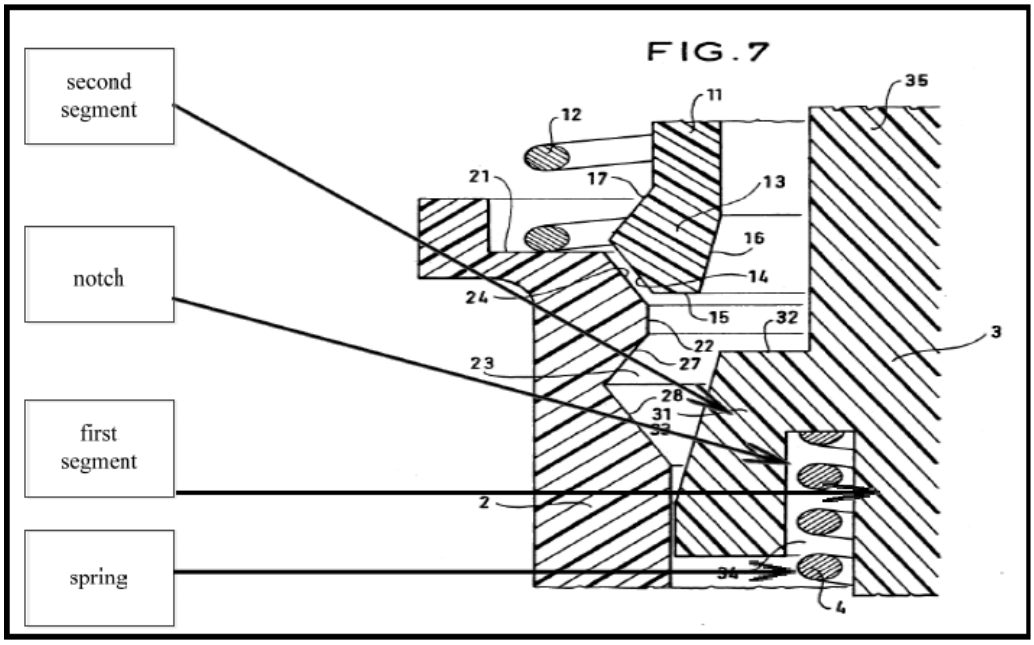


Figure 7 from Jadoul annotated by Petitioner (Pet. 63)

As shown in Petitioner's annotated Figure 7, the claimed spring is spring 4, and the claimed first and second segments of the claimed cylindrical body (*see* claims 4 and 15 from which claims 5 and 16 depend) are first and second portions of cylindrical sliding plug 3. This suggests that Petitioner is not relying on first fastener 1 or second fastener 2 of Jadoul for any structure corresponding to the

[10] The issued patent states that claim 17 depends from claim 5. This was corrected to change the dependency of claim 17 to claim 16. *See* Ex. 1001, 18 (Certificate of Correction).

helmet recited in the challenged claims. Thus, Petitioner's argument for claims 5 and 16, wherein spring 12 is asserted to engage first and second fasteners 1 and 2 of Jadoul, is inconsistent with Petitioner's argument for claims 6 and 17, which depend from claims 5 and 16, respectively, wherein spring 4 is asserted to engage first and second segments of cylindrical sliding plug 3.

Petitioner's arguments do not meet the requirements of our rules. Our rules require the petition to specify where each element of the claim is found in the prior art patents or printed publications relied upon. 37 C.F.R. § 42.104(b)(4), (5). It is unclear from Petitioner's argument where each element of challenged claims 5, 6, 16, and 17 is found in either Ide or Jadoul. We decline to speculate as to Petitioner's intentions. Accordingly, Petitioner has not met its burden to establish that claims 5, 6, 16, and 17 are unpatentable.

c. Claims 7 and 18

Claim 7, dependent from claim 1, and claim 18, dependent from claim 13, require that the "cylindrical body" recited in claims 1 and 13 lacks threads. Petitioner states that it is relying on Ide for the disclosure of all the elements and limitations in claims 1 and 13 ("Ide . . . Discloses All Of The Limitations Of Contested Claims 1, 4, 13, And 15."). Pet. 60. Petitioner asserts that "Jadoul discloses a cylindrical body that lacks threads." *Id.* at 63. Petitioner fails to specify, however, which element of Jadoul corresponds to the cylindrical body that lacks threads. Based on our analysis above of claims 5, 6, 16, and 17, Petitioner has not been consistent in identifying the cylindrical body.

Again, Petitioner's inconsistent arguments fail to specify where each element of claims 7 and 18 is found in Ide or Jadoul. 37 C.F.R. § 42.104(b)(4), (5). Accordingly, Petitioner has not met its burden to establish that claims 7 and 18 are unpatentable.

d. Claims 8 and 19

Claim 8, dependent from claim 1, and claim 19, dependent from claim 13, require that the "washer lacks threads." Petitioner's argument for these claims merely states "*See* Sec. V(D)(2)(c)(ii)" of the Petition. *Id.* at 64. The cited section (*see* Pet. 62) is Petitioner's discussion of claims 6 and 17. The cited section does not mention washers or washers without threads. It cites only to the asserted disclosure in Jadoul of a spring retained in a notch. Pet. 62. The Petition states clearly that "*Jadoul Discloses*" the limitations in claims 8 and 19, not Ide. Pet. 64. The Petition fails, however, to identify an element in Jadoul that corresponds to the washer recited in claims 8 and 19. Thus, Petitioner has not established that Jadoul discloses the limitations recited in claims 8 and 19.

Petitioner's arguments discussed above do not meet the requirement of our rules. Our rules require the petition to specify where each element of the claim is found in the prior art patents or printed publications relied upon. 37 C.F.R. § 42.104(b)(4), (5). It is unclear from Petitioner's argument where each element of the challenged claims is found in either Ide or Jadoul. We decline to speculate as to Petitioner's intentions. Accordingly, Petitioner has not met its burden to establish that the challenged claims are unpatentable.

e. Rationale

Similar to our analysis above regarding the challenge based on Ide and Szendel, we also find unpersuasive Petitioner's asserted rationale for combining Ide and Jadoul. Petitioner asserts "[c]ommon sense dictates" the proposed combination of references (Pet. 65); the "prior art" provides a motivation (*id.*); the claimed invention "is nothing more than the result of arranging old elements" (*id.* at 66); the challenged claims are "an obvious, common-sense solution" to a known problem (*id.*); and the combination of references "is a simple, uninspired

design choice" (*id.*). This is merely a list of conclusory labels, without a persuasive, fact-based analysis, supported by cited evidence, leading to these conclusions. Because Petitioner has not identified where each element of the claim is found in Ide or Jadoul, Petitioner also has not explained persuasively how or why the proposed combination of elements would have been obvious.

III. CONCLUSION

Upon review of the arguments and evidence, Petitioner has not established by a preponderance of the evidence that the challenged claims are unpatentable.

IV. ORDER

In consideration of the foregoing, it is hereby

ORDERED that Petitioner has not established that claims 1, 2, 4–8, 13, 15, and 16–19 are unpatentable; and

FURTHER ORDERED that this is a Final Written Decision under 35 U.S.C. § 318(a), and that parties to the proceeding seeking judicial review of the decision under 35 U.S.C. § 319 must comply with the notice and service requirements of 37 C.F.R. § 90.2.

PETITIONER:

James J. Lukas, Jr.
lukasj@gtlaw.com

Greenberg Traurig, LLP
77 West Wacker Drive, Suite 3100
Chicago, Illinois 60601

PATENT OWNER:

Ronald H. Spuhler
rspuhler@mcandrews-ip.com

McAndrews, Held, & Malloy, LTD
500 West Madison St. Suite 3400
Chicago, IL 60661