

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

DEERE & COMPANY,
Petitioner,

v.

ESCO GROUP LLC,
Patent Owner.

IPR2022-00186
Patent 8,844,175 B2

Before HYUN J. JUNG, SCOTT A. DANIELS, and
FREDERICK C. LANEY, *Administrative Patent Judges*.

LANEY, *Administrative Patent Judge*.

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

I. INTRODUCTION

Deere & Company (“Petitioner”) filed a Petition requesting an *inter partes* review (“IPR”) to challenge claims 1–21 (“the challenged claims”) of U.S. Patent No. 8,844,175 B2 (Ex. 1001, “the ’175 patent”). Paper 1 (“Pet.”), 1. ESCO Group LLC (“Patent Owner”) filed a Preliminary Response (Paper 11, “Prelim. Resp.”). Pursuant to our authorization, Petitioner filed a Reply (Paper 16, “Reply”) to address Patent Owner’s arguments in the Preliminary Response concerning discretionary denial under 35 U.S.C. §§ 314(a) and 325(d), and Patent Owner filed a Sur-reply (Paper 17, “Sur-reply”).

We have authority to determine whether to institute an *inter partes* review. 35 U.S.C. § 314 (2021); 37 C.F.R. § 42.4(a) (2021). The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted “unless. . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” For the reasons stated below, we determine that Petitioner has not established a reasonable likelihood that it would prevail with respect to at least one claim and, therefore, Patent Owner’s arguments for discretionary denial are moot. We hereby do not institute an *inter partes* review of the challenged claims of the ’175 patent.

A. Real Parties in Interest

Petitioner identifies itself and Black Cat Wear Parts, Ltd. as the real parties in interest. Pet. 1–2. Patent Owner identifies itself as the real party in interest. Paper 6, 1.

B. Related Matters

The parties indicate that the '175 patent is involved in *ESCO Group LLC v. Deere & Company*, No. 1:20-cv-01679 (D. Del.). Pet. 1–2; Paper 6, 1. That matter additionally involves U.S. Patent No. 10,273,662 B2, which Petitioner challenges in the Petition concurrently filed in IPR2022-00187. Pet. 2.

C. The '175 Patent

The '175 patent, titled "Wear Assembly for Excavating Equipment," describes a wear member that includes a socket including a front stabilizing end with top, bottom, and side surfaces that have a transverse, inward projection extending axially substantially parallel to the longitudinal axis of the socket. Ex. 1001, codes (54), (57). Figure 2 of the '175 patent provides an illustrative example of the wear member 104 described and is reproduced below.

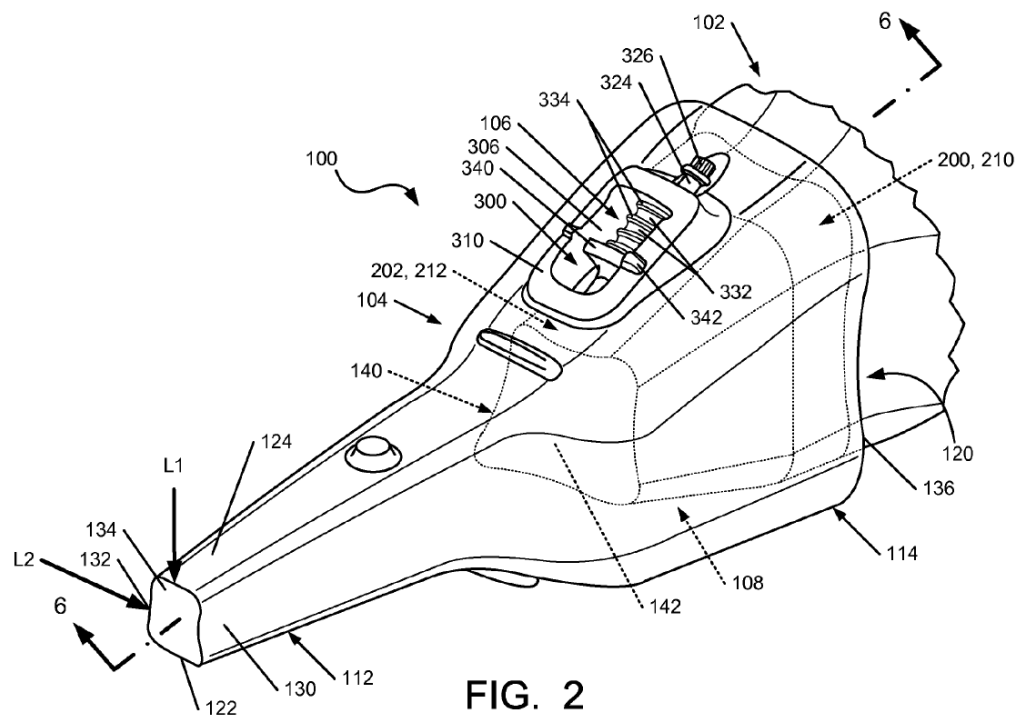


Figure 2 is a side perspective view of an example wear member. *Id.* at 4:59–60. Wear member 104 has a mounting section 114 that defines a socket 120 to receive nose 108 of the base member 102. *Id.* at 6:1–6.

As Figure 2 shows, wear member 104 is located on base 102, which is secured to the machinery providing the power that causes the wear member to penetrate the ground in an excavating operation. Ex. 1001, 5:48–51, 6:36–50. During such operations, the wear member is subjected to heavy loads and severe environments that necessitate a stable and secure interconnection between the wear member and base 102 because an undesired disengagement of the wear member causes increased time and expense for excavating operation. *See id.* at 1:58–64. The '175 patent describes a configuration of the socket in the wear member's mounting section that is intended to improve the interconnection between the wear member and the base.

The '175 patent describes a socket configuration that includes a front bearing or thrust face 152, front stabilizing surfaces 212, and rear stabilizing surfaces 210 on the interior of the wear member's mounting section 114. Ex. 1001, 8:1–4, 9:31–52, 10:18–42. Although contact between the various socket surfaces will likely occur during an excavating operation, the '175 patent teaches that the thrust face and stabilizing surfaces are “intended to provide primary resistance to the applied loads on the [wear member] and thereby provide the desired stability.” *Id.* at 10:64–11:3.

“The thrust face[] . . . 152 may be flat, recessed or have other shapes so long as they adequately resist the anticipated thrust loads for the intended use.” Ex. 1001, 8:18–21. Adjacent to the thrust surface 152 are front stabilizing surfaces 212 on the upper, lower, and side walls, which match

and contact corresponding stabilizing surfaces on the nose. *Id.* at 9:31–52. These stabilizing surfaces on the interior walls of the socket each have transverse, inward projections that correspond to transverse, inward recesses in the exterior walls of the nose. *Id.* at 10:1–10. Similarly, the interior upper, lower, and side walls at the rear of socket 120 include stabilizing surfaces that match with and contact corresponding stabilizing surfaces on the nose. *Id.* at 10:18–41.

The '175 patent teaches that the front stabilizing surfaces and rear stabilizing surfaces are provided to stabilize the wear member on the nose and to lessen stress in the components. Ex. 1001, 11:10–12. Additionally, the front stabilizing surfaces at the front end of the nose socket are able to stably resist axial and non-axial rearward forces in direct opposition to the loads irrespective of their applied directions and rear stabilizing surfaces complement the front stabilizing surfaces by reducing the rattle at the rear of the wear member and providing stable resistance to the rear portions of the wear member. *Id.* at 11:13–20.

D. Illustrative Claim

Claims 1, 4, 6, 9, 13, and 17 are independent; claims 2 and 3 depend from claim 1; claim 5 depends from claim 4; claims 7 and 8 depend from claim 6; claims 10–12 depend from claim 9; claims 14–16 depend from claim 13; and claims 18–21 depend from claim 17. Claim 1 is reproduced below with emphasis added to the claim elements that are the focus of this decision:

1. A wear member for excavating equipment comprising a working section and a mounting section extending generally along a longitudinal axis, ***the mounting section including a socket*** for receiving a base fixed to the excavating equipment,

and *the socket having a front stabilizing end* and a rear stabilizing end, the front stabilizing end is forward of the rear stabilizing end, the rear stabilizing end including a plurality of rear stabilizing surfaces, *the front stabilizing end including a front thrust surface extending generally transverse to the longitudinal axis, and a top surface, a bottom surface, a first side surface, and a second side surface*, each said top surface, bottom surface, first side surface, and second side surface extending rearwardly from the front thrust surface, *wherein* at least one of the top surface and the bottom surface and *each of the first side surface and the second side surface has a transverse, inward projection in the front stabilizing end defined by bearing surfaces that are adjacent to and extend from the front thrust surface substantially parallel to the longitudinal axis in an axial direction.*

Ex. 1001, 15:4–22. Independent claims 4, 6, 9, 13, and 17 include substantially similar limitations to those highlighted above in claim 1.

Claim 4 recites a wear member with a “mounting section including a socket having a front stabilizing end” that has “a front thrust surface extending generally transverse to the longitudinal axis, and a top surface, a bottom surface, a first side surface, and a second side surface,” wherein each of the side surfaces “has a transverse, inward projection” that is “defined by bearing surfaces that are adjacent to and extend from the front thrust surface substantially parallel to the longitudinal axis in an axial direction.”

Ex. 1001, 15:30–49.

Claim 6 recites a wear member having a “mounting section extending generally along a longitudinal axis” that has a socket including “a front thrust surface extending generally transverse to the longitudinal axis and a top surface, a bottom surface, a first side surface, and a second side surface,” wherein each of the side surfaces “has an inward projection in the front end axially extending from the front thrust surface” that includes “front bearing

surfaces in the front end adjacent to the front thrust surface.” Ex. 1001, 15:54–16:6.

Claim 9 recites a wear member having a “mounting section extending generally along a longitudinal axis of the wear member” that has a socket with a “front end including a front thrust surface extending generally transverse to the longitudinal axis, and a top surface, a bottom surface, a first side surface, and a second side surface,” wherein each of the side surfaces “has an inward projection in the front end axially extending from the front thrust surface” that includes “front bearing surfaces in the front end adjacent to the front thrust surface.” Ex. 1001, 15:54–16:6.

Claim 13 recites a wear member having a “mounting section including a socket” that has “a longitudinal axis” and a “front end including a front thrust surface, a top side, a bottom side and opposite lateral sides,” wherein each of the lateral sides include “an inward, axially extending projection defined by bearing surfaces” that are “adjacent to and extend rearward from the front thrust surface in an axial orientation that is substantially parallel to the longitudinal axis.” Ex. 1001, 16:50–64.

Lastly, claim 17 recites a wear member having a “mounting section including a socket” that has “a longitudinal axis” and a “front end including a front thrust surface, a top side, a bottom side and opposite lateral sides,” wherein each of the lateral sides include “an inward, axially extending projection defined by bearing surfaces” that are “adjacent to and extend rearward from the front thrust surface in an axial orientation that is substantially parallel to the longitudinal axis.” Ex. 1001, 17:15–18:6.

E. Prior Art Relied Upon

Petitioner relies upon the references listed below (Pet. 4):

Name	Reference	Date	Exhibit No.
Carpenter	US 2007/0193075 A1	Aug. 23, 2007	1006
Armstrong	US 2008/0201997 A1	Aug. 28, 2008	1007

F. Asserted Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability (Pet. 4):

Claims Challenged	35 U.S.C. §¹	References
1–21	103(a)	Carpenter
4–6, 13, 15, 17, 19, 20	103(a)	Armstrong
1–3, 7–12, 14, 16, 18, 21	103(a)	Armstrong, Carpenter

In support of its unpatentability contentions, Petitioner also relies on the Declaration of Dr. Elliot L. Stern. Ex. 1002.

II. ANALYSIS

Petitioner contends that we should institute an *inter partes* review of the '175 patent because claims 1–21 would have been obvious in view of Carpenter (*see* Pet. 8–34); because claims 4–6, 13, 15, 17, 19, and 20 would have been obvious in view of Armstrong (*see* Pet. 35–53); and because

¹ The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. § 103. Because the challenged claims of the '175 patent have an effective filing date before the effective date of the applicable AIA amendment, we refer to the pre-AIA version of 35 U.S.C. § 103.

claims 1–3, 7–12, 14, 16, 18, and 21 would have been obvious in view of Armstrong and Carpenter (*see* Pet. 53–64). Patent Owner contends that discretionary denial of *inter partes* review is appropriate in this case either (1) under 35 U.S.C. § 325(d), because the asserted prior art is “substantially the same” as the prior art considered during prosecution; or (2) under 35 U.S.C. § 314(a), because of the alleged inefficiencies created by this proceeding in view of the parallel litigation. *See* Prelim. Resp. 23–35. And even if discretionary denial is not appropriate, Patent Owner contends that we should deny *inter partes* review because Petitioner’s grounds of unpatentability are deficient. *See id.* at 35–67.

After studying the contentions and evidence submitted by both parties, we agree with Patent Owner that the Petition does not demonstrate sufficiently that Carpenter and Armstrong, either individually or in combination, disclose or suggest each and every limitation of the challenged claims. This deficiency is dispositive of the Petition, therefore, Patent Owner’s other arguments regarding the exercise of our discretion are moot.

A. Principles of Law

To prevail at this stage of the proceeding, Petitioner must demonstrate a reasonable likelihood that at least one of the challenged claims of the ’175 patent is unpatentable. 35 U.S.C. § 314 (a). “In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent [claim] it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016). This burden of persuasion never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015); *see also In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1376

(Fed. Cir. 2016) (“Where, as here, the only question presented is whether due consideration of the four *Graham* factors renders a claim or claims obvious, no burden shifts from the patent challenger to the patentee. This is especially true where the only issues to be considered are what the prior art discloses, whether there would have been a motivation to combine the prior art, and whether that combination would render the patented claims obvious.”).

A claim is unpatentable for obviousness if, to one of ordinary skill in the pertinent art, “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.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007) (quoting 35 U.S.C. § 103(a) (2006)). The question of obviousness is resolved on the basis of underlying factual determinations, including “the scope and content of the prior art”; “differences between the prior art and the claims at issue”; and “the level of ordinary skill in the pertinent art.” *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Additionally, secondary considerations, such as “commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy.”² *Id.*

When conducting an obviousness analysis, we consider a prior art reference “not only for what it expressly teaches, but also for what it fairly

² Neither party has presented evidence of secondary considerations in this proceeding.

suggests.” *Bradium Techs. LLC v. Iancu*, 923 F.3d 1032, 1049 (Fed. Cir. 2019) (citation omitted). And because a prior art reference can provide statements that may support a particular modification as well as other statements that may discourage the same, the Federal Circuit has “held that it is error to fail to consider the *entirety* of the art.” *Artic Cat Inc. v. Bombardier Recreational Prods., Inc.*, 876 F.3d 1350, 1359 (Fed. Cir. 2017).

A patent claim “is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR*, 550 U.S. at 418. An obviousness determination requires finding “both ‘that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.’” *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367–68 (Fed. Cir. 2016) (citation omitted); *see KSR*, 550 U.S. at 418 (for an obviousness analysis, “it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does”). “Although the *KSR* test is flexible, the Board ‘must still be careful not to allow hindsight reconstruction of references . . . without any explanation as to *how* or *why* the references would be combined to produce the claimed invention.’” *TriVascular, Inc. v. Samuels*, 812 F.3d 1056, 1066 (Fed. Cir. 2016) (citation omitted). Further, an assertion of obviousness “cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR*, 550 U.S. at 418 (quoting *In re Kahn*,

441 F.3d 977, 988 (Fed. Cir. 2006)); *accord In re NuVasive, Inc.*, 842 F.3d 1376, 1383 (Fed. Cir. 2016) (stating that “conclusory statements” amount to an “insufficient articulation[] of motivation to combine”; “instead, the finding must be supported by a ‘reasoned explanation’” (citation omitted)); *Magnum Oil*, 829 F.3d at 1380 (“To satisfy its burden of proving obviousness, a petitioner cannot employ mere conclusory statements. The petitioner must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness.”).

B. Claim Construction

In an *inter partes* review, we construe a patent claim “using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b).” 37 C.F.R. § 42.100(b) (2020). Under this standard, the words of a claim generally are given their “ordinary and customary meaning,” which is the meaning the term would have to a person of ordinary skill at the time of the invention, in the context of the entire patent including the specification. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc).

Petitioner contends that “[t]he Board need not construe any terms of the Challenged Claims” (Pet. 4), and Patent Owner agrees (Prelim. Resp. 22). We do as well. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms that . . . are in controversy, and only to the extent necessary to resolve the controversy.’”) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)). Accordingly, we do not expressly construe any terms in the challenged claims.

C. Level of Ordinary Skill in the Art

In determining the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (quotation marks omitted).

Petitioner asserts, with the support of Dr. Stern, that a person of ordinary skill in the art of the ’175 patent “would have had at least a bachelor’s degree in mechanical engineering or a related discipline, or have at least three years of experience working with wear assemblies for excavating equipment.” Pet. 8 (citing Ex. 1002 ¶¶ 13–14). “Patent Owner disputes Petitioner’s offered level of ordinary skill in the art” and counters, with the support of declarant Hezekiah Holland, that a skilled artisan “would have had at least an undergraduate degree in mechanical engineering and three years of professional experience working on wear assemblies.” Prelim. Resp. 19, 21 (citing Ex. 1003 ¶¶ 25, 30–31).

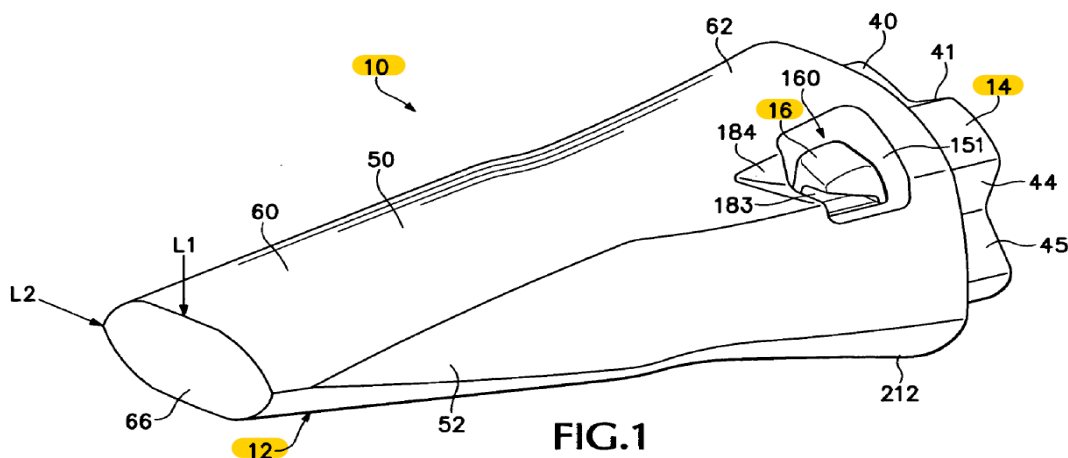
On this record, however, we decline to adopt a specific formulation regarding the level of ordinary skill in the art, and instead find that the cited references are representative of the level of ordinary skill in the art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (the level of ordinary skill in the art may be evidenced by the cited references themselves). However, our analysis of the issues below would have been the same regardless of whether we adopted Petitioner’s or Patent Owner’s proposed formulation.

D. Brief Summaries of the Asserted Prior Art References

1. Carpenter (Exhibit 1006)

Carpenter, titled “Wear Assembly,” describes “[a] wear assembly for securing a wear member to excavating equipment that includes a base having a nose and a wear member having a socket.” Ex. 1006, codes (54), (57). Because these wear parts are often subjected to harsh conditions and heavy loading, the wear members get worn out and need to be replaced. *Id.* ¶ 4. Carpenter notes that over the years there have been many designs developed “in an effort to enhance the strength, stability, durability, penetration, safety, and ease of replacement of such wear members with varying degrees of success.” *Id.* Adding to those efforts, Carpenter proposes a wear assembly in which “the front end and/or body of the nose and socket are formed with a generally oval configuration” to provide “high strength and a longer nose life, omit[] distinct corners to reduce concentrations of stress, and present[] a reduced thickness for enhanced penetration in the ground.” *Id.* ¶ 12.

An illustration of this wear assembly 10 is shown in Figure 1 of Carpenter, reproduced below.



In Figure 1, highlights are added to identify wear member 12 (also referred to as a “point”) and nose 14, which are secured together by lock 16. Ex. 1006 ¶ 26. Nose 14 is illustrated in Figures 2 and 3 below with highlights and shading added by the Board for ease of identification.

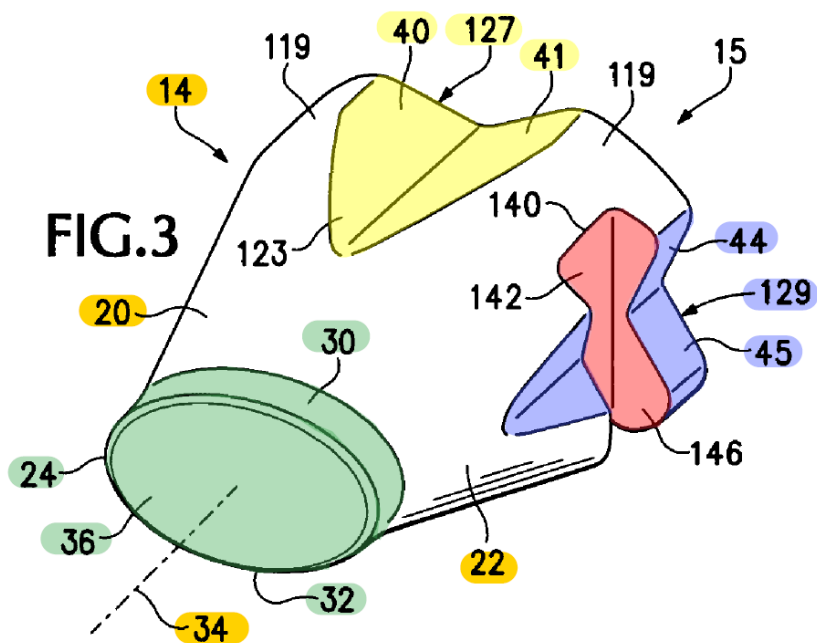
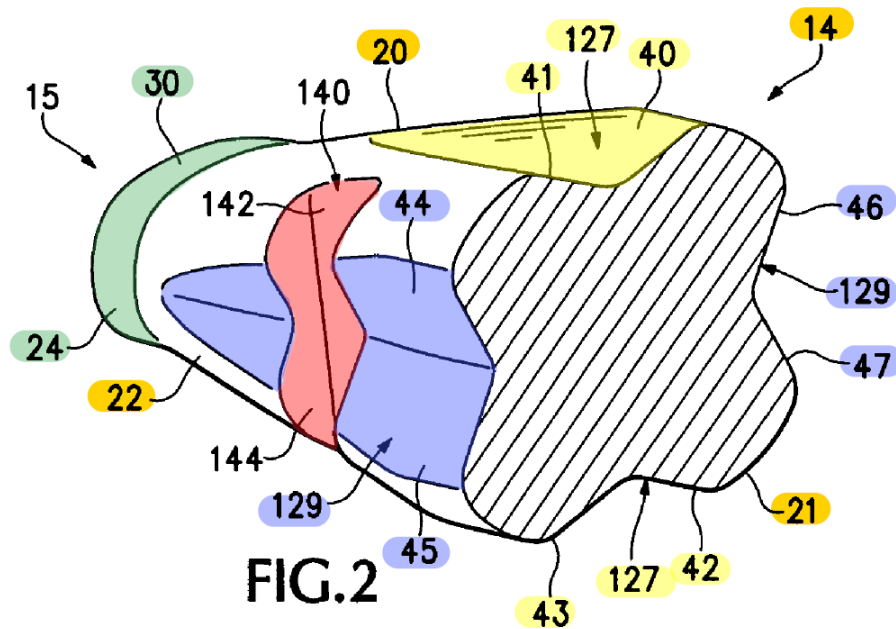


Figure 2 is a rear perspective of the nose, and Figure 3 is a front perspective of the same. *Id.* ¶¶ 14–15. Carpenter describes the nose as having a body “with top and bottom walls 20, 21 that converge toward a front end 24, and opposite sidewalls 22, 23.” *Id.* ¶ 27. Additionally, the nose has several “stabilizing surfaces” located both at the front end and the rear end of the body. *Id.* ¶¶ 27–29. Carpenter teaches that “[w]hile any portion of the nose may at times bear loads from the point, the stabilizing surfaces are intended to be primary surfaces for resisting loads that are applied to the nose by the point.” *Id.* ¶ 29.

The “front end 24 has generally an oval transverse shape with an oval front wall 36” and “the body [] of nose 14 also has a generally oval transverse shape except for stabilizing recesses 127, 129.” Ex. 1006 ¶ 28. Carpenter teaches that “[t]he use of an oval-shaped nose forms high strength nose sections that result in a longer nose life” because it “lessens the presence of corners and, thus, reduces stress concentrations along the outer edges of the nose.” *Id.* In addition, although “the front end and body of the nose could have other shapes,” Carpenter teaches that an oval shape provides “a streamlined profile that improves penetration into the ground during a digging operation; i.e., the wear member is formed with an oval-shaped socket for receiving the nose which, in turn, allows the wear member to have a slimmer profile for better penetration.” *Id.*

Front end 24 is described by Carpenter as being “formed with top and bottom stabilizing surfaces 30, 32 that are substantially parallel to the longitudinal axis 34,” but surfaces 30, 32 may diverge rearwardly from axis 34 up to about 5 degrees for manufacturing purposes. Ex. 1006 ¶ 27. And the “stabilizing surfaces 30, 32 are laterally curved so as to meet along

the sides of the nose,” which allows the stabilizing surfaces to be formed around the entire front end 24 of nose 14. *Id.* Carpenter teaches, however, that “other configurations are possible.” *Id.*

Carpenter describes the top, bottom, and side walls 20–23 of the nose body as “each include[ing] a pair of stabilizing surfaces 40–47 that are each substantially parallel to axis 34,” although these rear stabilizing surfaces 40–47 may also deviate by about 5 degrees relative to the longitudinal axis 34. Ex. 1006 ¶ 29. “As seen FIGS. 2 and 3, rear stabilizing surfaces . . . are preferably planar and oriented to form V-shaped recesses 127[, 129] in the nose.” *Id.* ¶ 37. “However, these rear stabilizing surfaces could have a myriad of different shapes and orientations.” *Id.*

Carpenter teaches that these rear stabilizing surfaces “are generally most effective when located at or near the rear end of the nose” and they “are each formed in a central portion of the nose so as to be located in the thickest, most robust portion of the nose.” Ex. 1006 ¶¶ 32, 38. Carpenter teaches that, by limiting the rear stabilizing surfaces “to the central portions rather than extending entirely across the nose,” the stabilizing surface can help ensure “loads are not primarily carried by the outer portions of the nose where the most bending occurs.” *Id.* ¶ 32. Carpenter teaches further that “keeping the stabilizing surfaces 40–43 away from the outer edges can also be used to reduce the creation of high stress concentrations,” although they could extend the entire width and depth of the nose. *Id.*

Carpenter describes wear member 12 as having “[a] top, bottom and side portions to define a front working end 60 and a rear mounting end 62.” Ex. 1006 ¶ 30. “The mounting end 62 is formed with a socket 70 that receives nose 14 for supporting the point on the excavating equipment.” *Id.*

Carpenter teaches that, “[p]referably, socket 70 has a shape that is complementary to nose 14, though some variations could be included.” *Id.*

The socket 70 is illustrated in Figure 7 below with highlights and shading added by the Board for ease of identification; the colors show the correlation between the respective socket parts and the nose parts.

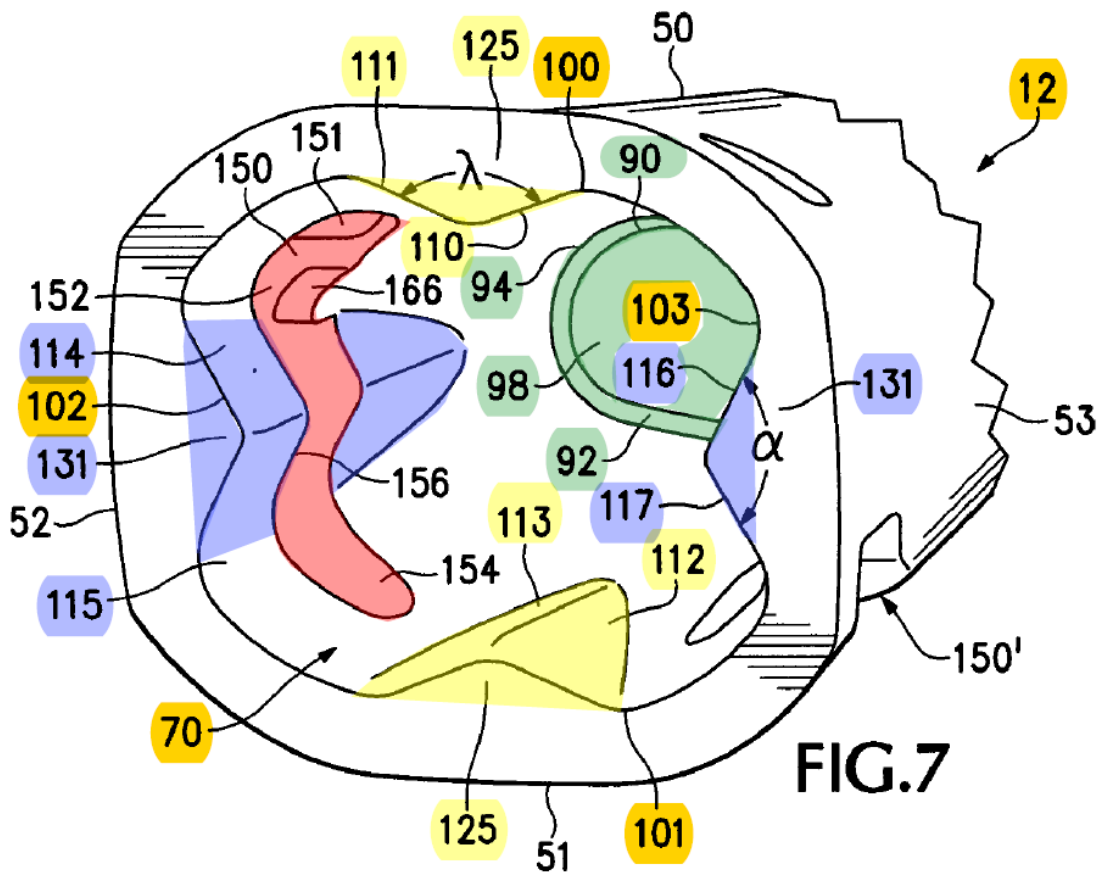


Figure 7 is a partial, rear perspective view of the wear member 12 and shows the configuration of socket 70. Ex. 1006 ¶ 19. Carpenter describes socket 70 as including “a front end 94 with top and bottom stabilizing surfaces 90, 92 and a generally elliptical front surface 98 to match front end 24 of the nose.” *Id.* ¶ 31. The “[t]op, bottom and side walls 100–103 of the socket extend rearward from front end 94 to complement top, bottom and side walls 20–23 of nose 14.” *Id.* Additionally, Carpenter states that each of

these walls 100–103 are preferably formed with stabilizing surfaces 110–117 that are “designed to match” and “bear against” stabilizing surfaces 40–47 on the nose. *Id.* Carpenter teaches that the stabilizing surfaces 110–117 in the rear of the socket are formed with transverse, inclined surfaces to enable them to engage the stabilizing surfaces at the rear of the nose to resist loads applied during operation. *Id.* ¶ 35. Carpenter teaches that having “stabilizing surfaces on each of the top, bottom and side walls of the nose and socket maximizes the area the stabilizing surfaces that can be used to support the point.” *Id.* ¶ 43.

2. *Armstrong (Exhibit 1007)*

Armstrong, titled “Tooth and Adaptor Assembly,” has an objective of providing “a tooth and adaptor assembly which incorporates a locking mechanism which can be removed from the assembly with minimal force.” Ex. 1007 ¶ 10, code (54). Armstrong describes a “locking mechanism [that] is fully enclosed, protecting it from the abrasive surroundings which could damage the mechanism and make removal extremely difficult.” *Id.* ¶ 18. By enclosing the locking mechanism, however, Armstrong teaches that “the forces required to retain the locking mechanism are greatly reduced than prior art configurations, and hence requires minimal force to remove the locking mechanism, enabling quick change out time, reducing the amount of downtime of the machinery.” *Id.* ¶ 19. This configuration is illustrated by Figures 5, 9, and 16 from Armstrong, reproduced below with shading added by the Board for ease of identification; the colors show the correlation between the respective wear member and the nose.

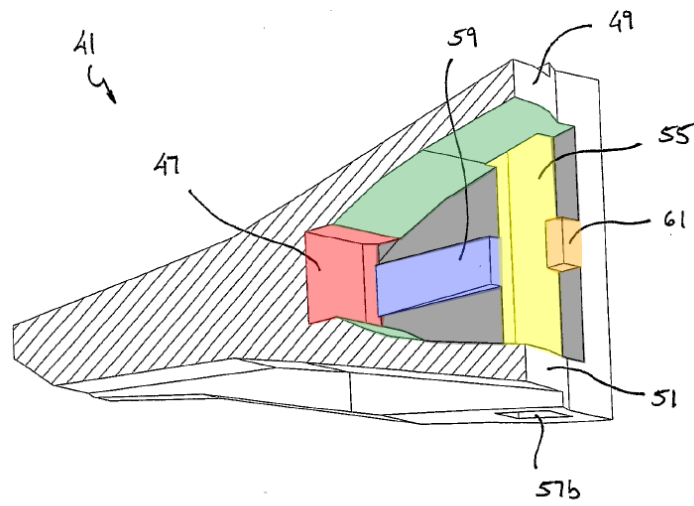


FIG 5

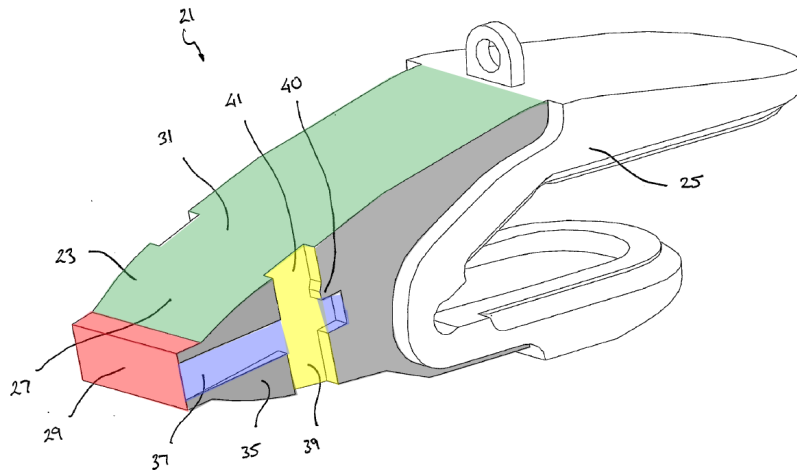


FIG 9

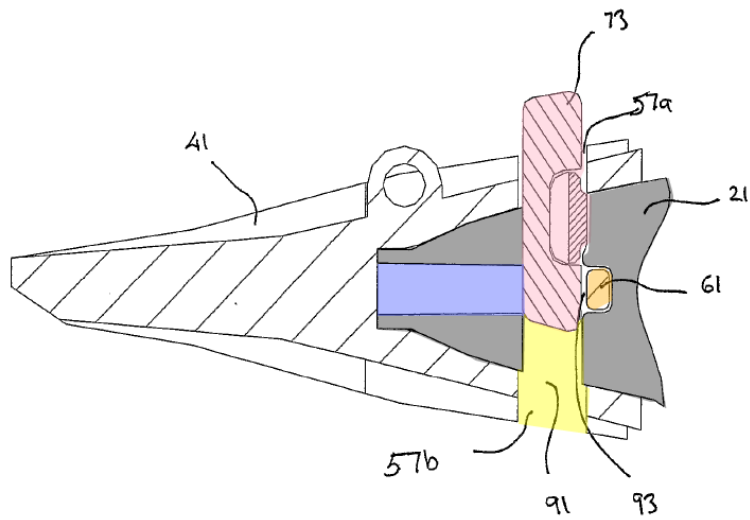


FIG 16

Figure 5 is a cross sectional perspective of the wear member from a forward position; Figure 9 is a front perspective view of the nose; and Figure 16 is a cross sectional view of the wear member received on the nose, with the locking mechanism partially inserted in the enclosure. Ex. 1007 ¶¶ 97, 101, 108. To create a tooth (i.e., wear member) and adaptor (i.e., nose) assembly that has an enclosed locking mechanism, Armstrong describes wear member 41 that includes horizontal projection 59 and channel 55 that perpendicularly bisects projection 59 in the side walls; nose 27 that includes horizontal channel 37 for slidably receiving wear member projection 59 as well as another channel 37 that perpendicularly bisects channel 37 and aligns with wear member channel 55 when assembled to form an enclosure; and a locking pin, which is secured within the enclosure formed by the assembled wear member and nose. Ex. 1007 ¶¶ 119, 122, 125, 132–133, 136.

E. Unpatentability Contentions in View of Carpenter

Petitioner contends that the challenged claims would have been obvious to a skilled artisan at the time of the invention in view of Carpenter. Pet. 11–34. After studying Petitioner’s arguments and supporting evidence, however, we are not persuaded Carpenter discloses or suggests a first and second side surfaces in the front stabilizing end of the wear member socket that each have a transverse, inward projection defined by a bearing surface extending from the front thrust surface, as recited by each of the independent claims challenged. Our discussion, therefore, focuses on this deficiency because it is dispositive of Petitioner’s contention that claims 1–21 are unpatentable in view of Carpenter.

Independent claim 1 recites a “wear member” that includes, in relevant part, a “first side surface” and a “second side surface” that each

“extend[] rearwardly from the front thrust surface” at the “front stabilizing end” of a wear member’s “mounting section” and have “a transverse, inward projection . . . defined by bearing surfaces that are adjacent to and extend from the front thrust surface substantially parallel to the longitudinal axis [of the wear member] in an axial direction.” Ex. 1001, 15:4–22. And as noted above (*see supra* § I.D), each of the other independent claims challenged (i.e., claims 4, 6, 9, 13, and 17) includes substantially similar limitations. *See id.* at 15:30–49, 15:54–16:6, 16:16–38, 16:50–64, 17:15–18:6.

Furthermore, in the Petition, Petitioner relies on the same arguments and evidence for each independent claim to contend that Carpenter renders obvious the recited side surfaces at the front stabilizing end of the mounting section of the wear member. *See* Pet. 17–22, 23, 29, 31, 33.

Petitioner contends Carpenter discloses a top surface, a bottom surface, a first side surface, and a second side surface at the front stabilizing end of the wear member’s mounting section. Pet. 17–18. As support, Petitioner refers to Carpenter’s teaching that “socket 70 includes a front end 94 with top and bottom stabilizing surfaces 90, 92 and a generally elliptical front surface 98 [(i.e., front thrust surface)] to match front end 24 of the nose” and that the “[t]op, bottom and side walls 100–103 of the socket extend rearward from front end 94 to complement top, bottom and side walls 20–23 of nose 14.” *Id.* at 17 (citing Ex. 1006 ¶ 31, Figs. 3, 7; Ex. 1002 ¶ 62). Petitioner also provides annotated Figures 3 and 7, which are reproduced below.

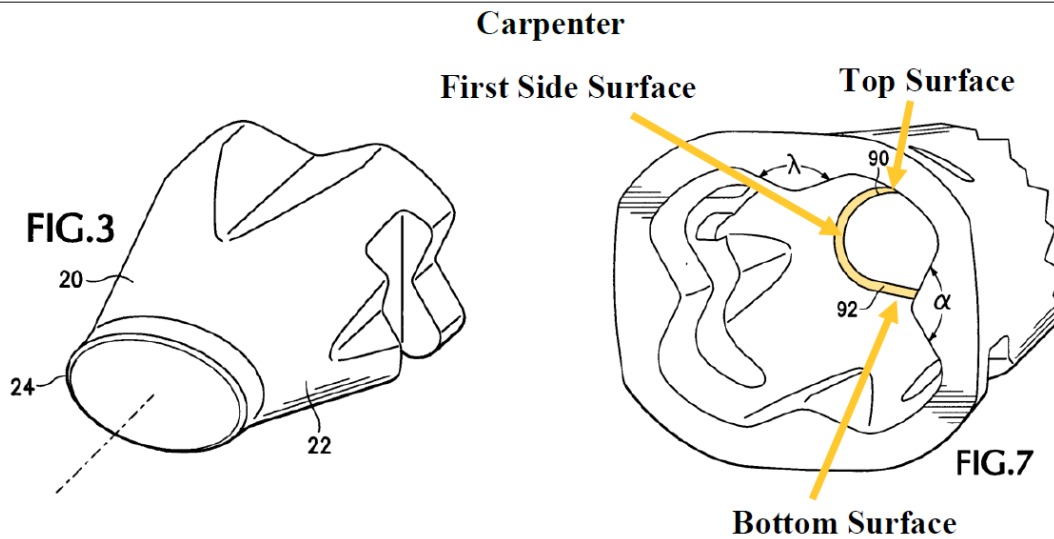


Figure 3 illustrates the nose of a wear assembly, and Figure 7 illustrates the socket of a wear member that fits over the nose, which has been modified to add yellow arrows and shading to identify the top and bottom surfaces (90, 92), as well as a first side surface, extending rearwardly from the front thrust surface (not numbered, but identified as 98 in unannotated Figure 7 (*see* Pet. 16; Ex. 1006, ¶¶ 27, 31, Figs. 3, 7)). *Id.*

Petitioner notes that Figures 3 and 7 “show top and bottom stabilizing surfaces 90, 92 and each side surface of the front end 94 extend rearwardly from the front surface 98,” and that Carpenter states, “the front end and body of the nose could have other shapes; for example, the nose and socket could be more angular and define a generally parallelepiped front end with generally rectangular stabilizing surfaces.” Pet. 17–18 (citing Ex. 1006 ¶ 63; Ex. 1002 ¶ 63). Petitioner contends that “each of the oval-shaped nose and corresponding socket [shown in Figures 3 and 7], includes top, bottom, and side walls; although unlabeled, Carpenter thus discloses a front end 94 with first and second side surfaces.” *Id.* at 17 (citing Ex. 1002 ¶ 63).

Regarding the first and second side surfaces each having a “transverse, inward projection in the front stabilizing end defined by bearing surfaces,” Petitioner contends that this limitation is disclosed by the projections “in the *rear* stabilizing end” of the socket of the wear member Carpenter describes. Pet. 18–21 (“The [Carpenter] disclosure and figures describe an embodiment in which each of the top, bottom, first side, and second side surfaces has a transverse, inward projection . . . in the *rear* stabilizing end.”). Petitioner provides another further annotated version of Figures 3 and 7 from Carpenter, which are reproduced below.

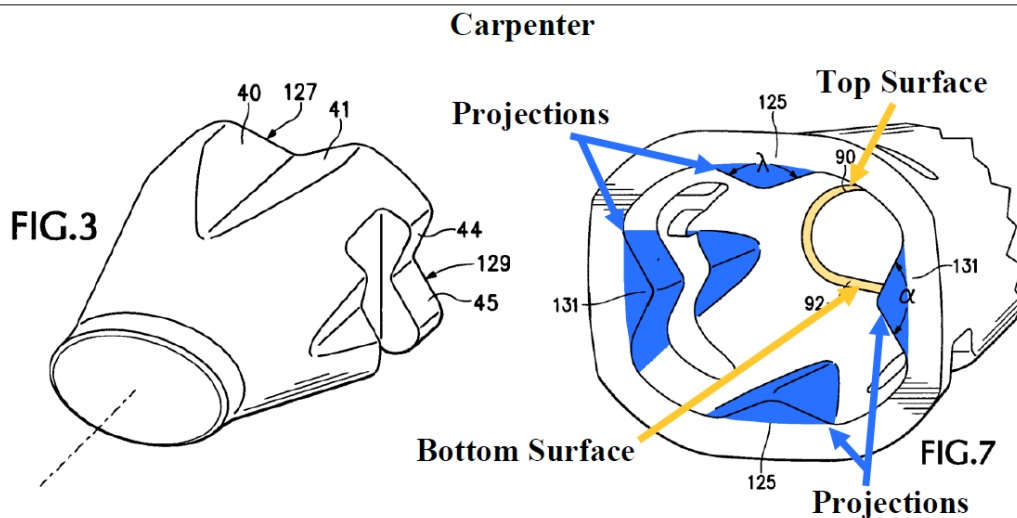


Figure 3 illustrates the nose of a wear assembly, and Figure 7 illustrates the socket of a wear member that fits over the nose, which has been modified to add yellow arrows and shading to identify the top and bottom surfaces (90, 92) at the front of the socket and add blue arrows and shading to identify projections (125, 131) at the rear of the socket. Pet. 18; *see also* Ex. 1006 ¶¶ 27, 31, Figs. 3, 7. Petitioner identifies that Carpenter describes the rear projections as being “preferably formed with stabilizing surfaces . . . that bear against stabilizing surfaces 40–47 on the nose” and that the stabilizing

surfaces “are set at a transverse angle to each other.” Pet. 18 (citing Ex. 1006 ¶¶ 31, 35, Figs. 3, 7). Petitioner further identifies the same projections as also being bearing surfaces. *Id.* at 21 (citing Ex. 1006 ¶ 39, Figs. 3, 7).

Petitioner notes that Carpenter describes several contemplated variations to the embodiment disclosed:

Carpenter describes variations on this embodiment, however, such as where: “front stabilizing surfaces 30, 32, 90, 92 could be omitted” (*id.*, ¶ 46); “front portions 123 could have other narrowing shapes, non-converging shapes, or be eliminated entirely” . . . ; and, significantly, “***stabilizing surfaces 40-43, 110-113 could extend the entire width and depth of the nose and socket.***”

Pet. 19 (citing Ex. 1006 ¶¶ 32, 38, 46). Petitioner further notes that “Carpenter adds, ‘the variations in shapes for stabilizing recesses 127 and stabilizing projections 125 discussed above are equally applicable for recesses 129 and projections 131.’” *Id.* (citing Ex. 1006 ¶ 41). Petitioner contends that, “[a]lthough the embodiment depicted in the figures of Carpenter may not show the transverse, inward projections (i.e., 125, 131) in the front stabilizing end, in view of the above-referenced disclosure, ***Carpenter indeed teaches and describes embodiments in which projections 125, 131 extend to the front end of the socket.***” *Id.* (citing Ex 1002 ¶ 67).

Alternatively, Petitioner contends that, because Carpenter teaches “[t]he provision of stabilizing surfaces on each of the top, bottom and side walls of the nose and socket maximizes the area the stabilizing surfaces that can be used to support the point,” it would also have been obvious to a skilled artisan “to modify projections 125, 131 of Carpenter to extend to the front end 94 to further maximize the area of the stabilizing surfaces to better

support the point as use of a known technique to solve a known problem.”
Pet. 20 (citing Ex. 1006 ¶ 43; Ex 1002 ¶ 67).

Patent Owner argues that “Petitioner misunderstands” the Carpenter disclosure because a skilled artisan “would readily understand that Carpenter does not disclose an embodiment with ‘inward projections’ in the front end [of the wear member’s socket].” Prelim. Resp. 44. Patent Owner asserts that Petitioner incorrectly contends Carpenter teaches and describes projections 125, 131 may extend to the front end of the wear member’s socket because Carpenter states “stabilizing surfaces 40–43, 110–113 could extend the entire width and depth of the nose and socket.” *Id.* (citing Pet. 18–19; Ex. 1006 ¶ 32). Patent Owner asserts that this “single sentence from the disclosure on which Petitioner relies merely teaches that its recesses and projections may extend at different depths and widths (*i.e.*, along the *z* and *x* axes) ***within the rear end.***” *Id.* at 48. Patent Owner asserts that a skilled artisan “would understand that ‘width’ and ‘depth’ dimensions differ from ‘length,’” and “Carpenter consistently refers to the dimension along the longitudinal axis of the wear member (*i.e.*, the *y* axis) as ‘length.’” *Id.* at 45–46. As support, Patent Owner highlights that “Carpenter describes that the ‘body 25 expands rearward from front end 24 over much of its ***length***’” and, when describing an embodiment of the recesses and projections, Carpenter states that “projections [125c] may have a shorter ***length*** than the recesses 127 and extend only partially along the ***length*** of the recess (FIG. 11) or have an interrupted ***length*** with gaps in between segments.” *Id.* (citing Ex. 1006 ¶¶ 28, 40).

Patent Owner argues that there are also flaws with Petitioner’s alternative contention that modifying projections 125 and 131 of Carpenter

by extending them to the front end of the wear member's socket would have been obvious to a skilled artisan at the time of the invention. Prelim. Resp. 49–52. Patent Owner argues that this modification is contrary to the teachings of Carpenter, which instructs to avoid or reduce stress concentrations. *Id.* at 49 (citing Ex. 1006 ¶ 12). Patent Owner argues that “[m]odifying Carpenter to have recesses and projections in the ‘front end,’ as Petitioner proposes, would introduce stress concentrations to the front end that Carpenter explicitly teaches to avoid.” *Id.* at 51 (citing Ex. 2003 ¶ 84).

As support, Patent Owner notes that Carpenter teaches an embodiment that “omits distinct corners” from the front end of a wear assembly’s nose “to reduce concentrations of stress” and “describes providing a front end with a ‘generally oval configuration’ to reduce stress concentrations, thus ‘provid[ing] higher strength and a longer nose life.’” *Id.* at 50 (citing Ex. 1006 ¶ 12; Ex. 2003 ¶ 80). Patent Owner asserts that “Carpenter provides stabilization in its front end by using ‘substantially parallel’ surfaces that ‘are formed around the entire front end 24,’ . . . ***rather than recesses and projections.***” *Id.* (citing Ex. 1006 ¶ 27, Figs. 3, 7; Ex. 2003 ¶ 81).

Patent Owner notes further that Carpenter specifically teaches locating the projections and recesses in the rear end of the nose and the wear member’s socket because there is “significantly more material at the rear end as compared to the front end, [which means the] rear end of Carpenter is therefore able to accept recesses and projections without significant concerns of inducing stress concentrations and damage under excavation operations.” Prelim. Resp. 51 (citing Ex. 2003 ¶ 82). Patent Owner notes that, even when the projections are located at the rear end, Carpenter still suggests that it is

best to have the projections in “a central portion of the nose so as to be located in the *thickest, most robust portion of the nose.*” *Id.* (citing Ex. 1006 ¶ 32). And given this teaching, “and the understanding that the front end is the thinner portion of the nose, [Patent Owner asserts that] a person

of ordinary skill in the art would not be motivated to extend the projections and recesses into the front end, a less robust portion of the nose than the rear end.” *Id.* (citing Ex. 2003 ¶ 83). Rather than improving the performance of the wear assembly by maximizing the area of the stabilizing surfaces, as Petitioner suggests is the reason a skilled artisan would have known to make the proposed modification, Patent Owner asserts Carpenter teaches that such a modification would “detrimentally impact” the performance of the disclosed wear assembly because the modification “would induce stress concentrations in [the] front end, which in turn would damage the nose . . . under normal excavation operations.” *Id.* at 52 (citing Ex. 2003 ¶ 85).

Having studied the cited portions of Carpenter, along with the relevant portions of Dr. Stern’s declaration, we are not persuaded Petitioner has shown sufficiently Carpenter either discloses, or renders obvious, a wear member that includes transverse, inward projections defined by bearing surfaces in the first and second side surfaces extending rearwardly from the front thrust surface at the front stabilizing end of the wear member’s mounting section.

First, Petitioner’s contention that Carpenter actually discloses “each of the first side surface and the second side surface has a transverse, inward projection in the front stabilizing end defined by bearing surfaces” lacks sufficient support from the evidence cited. Petitioner acknowledges that the

embodiments Carpenter discloses do not have transverse, inward projections in the first and second side surfaces at the front stabilizing end of the wear member's socket. Pet. 19. Petitioner nevertheless still contends Carpenter teaches and describes such a configuration because Carpenter states that the stabilizing surfaces (110–113) defining stabilizing projections (125) in the *top* and *bottom* walls at the *rear end* of the socket “***could extend the entire width and depth of the . . . socket***” and that “the variations in shapes for . . . stabilizing projections 125 discussed above are equally applicable for . . . projections 131 [located on the side surfaces at the rear end of the wear member's socket].” *Id.* (citing Ex. 1006 ¶¶ 32, 41). And, notably, Petitioner's expert, Dr. Stern, adds nothing to Petitioner's contention and fails to explain why a skilled artisan would understand “depth” in paragraph 32 of Carpenter as describing the distance a projection may extend along *the length* of the socket; instead, Dr. Stern simply provides a conclusory statement that has little, if any, evidentiary value. *See* Ex. 1002 ¶¶ 65–67.

The problem is, however, that the reference to “width and depth” in paragraph 32 of Carpenter does not support Petitioner's contention that “Carpenter indeed teaches and describes embodiments in which projections . . . 131 extend to the front end of the socket” (*Id.*, emphasis omitted).

Paragraph 32 of Carpenter states,

[0032] Stabilizing surfaces 40–43 in top and bottom walls 20, 21 are each ***formed in a central portion*** of the nose so as to be ***located in the thickest***, most robust portion of the nose. These stabilizing surfaces are ***preferably limited to the central portions rather than extending entirely across the nose***. In this way, the loads are not primarily carried by the outer portions of the nose where the most bending occurs. Moreover, keeping the stabilizing surfaces 40–43 away from the outer

edges can also be used to reduce the creation of high stress concentrations in the transition between nose 14 and the mounting portion of base 15. The side portions 119 of nose 14 to each side of stabilizing surfaces 40–43 preferably diverge relative to axis 34 at a steeper angle than stabilizing surfaces 40–43 to provide strength and at times a smoother transition between nose 14 and the rear mounting portion of base 15.

Nonetheless, stabilizing surfaces 40–43, 110–113 could extend the entire width and depth of the nose and socket.

Ex. 1006 ¶ 32 (emphases added). As the highlighted text above shows, paragraph 32 of Carpenter begins by describing that the stabilizing surfaces at the rear of the nose are preferably limited to the central portion of the nose where it is *thickest*, rather than extending entirely *across* the nose’s rear end. Carpenter teaches that this location avoids having the loads being primarily carried by the outer portions of the nose where most of the bending occurs. *Id.* Within the context of paragraph 32, “depth” refers to the different *thicknesses* of the nose *across* the rear end and, although *preferably* limited to the centrally located thickest portion of the nose’s rear end, Carpenter teaches that the stabilizing surfaces can be located at any of the depths found along the width of the nose’s rear end.

Consistent with this understanding, and as Patent Owner correctly notes (Prelim. Resp. 45–46), Carpenter refers to “length” to describe the configuration of recesses/projections along the longitudinal axis of the wear member. For example, Carpenter teaches that projections can be configured to “have a shorter *length* than the recesses 127 and extend only partially along the *length* of the recess (FIG. 11) or have an interrupted length with gaps in between segments.” Ex. 1006 ¶ 40, Fig. 11. As a result, we further agree with Patent Owner that a skilled artisan would understand that the “depth” dimension is different than the “length” dimension, and “depth” in

the context of paragraph 32 of Carpenter refers to a dimension along the “z axes” (i.e., the thickness) rather than a dimension along the y axes (i.e., the length). Therefore, we find deficiencies with the evidence cited in the Petition to support Petitioner’s contention that Carpenter actually discloses first and second side surfaces having a projection in the front stabilizing end of the socket that are defined by bearing surfaces.

Second, Petitioner’s obviousness contention is deficient because the Petition fails to demonstrate a skilled artisan would have had a reasonable expectation of success in modifying the side surfaces at the front end of Carpenter’s disclosed socket to have projections that better support the point. *See* Pet. 20. Instead, at most, Petitioner merely provides a conclusory statement that doing so would be a “known technique to solve a known problem,” without any supporting evidence from Carpenter or Dr. Stern demonstrating a skilled artisan would have known transverse, inward projections were a known “technique” that could be successfully added *to the sides of the front stabilizing end* of Carpenter’s socket to better support the point. *Id.*; *see also* Ex. 1002 ¶¶ 65–67.

Where a party argues a skilled artisan would have been motivated to modify a reference, in addition to providing a reason for why a skilled artisan would have known to make the modification, “it must [also] show the artisan would have had a reasonable expectation of success from doing so.” *Arctic Cat Inc. v. Bombardier Recreational Prod. Inc.*, 876 F.3d 1350, 1360–61 (Fed. Cir. 2017). In fact, it would be error for us to not to place a burden on Petitioner to establish in the Petition a reasonable expectation of success in modifying Carpenter’s socket in the manner claimed. *Keynetik, Inc. v. Samsung Electronics Co.*, 841 Fed. Appx. 219, 228 (Fed. Cir. 2021)

("[t]he Board erred in assigning no burden to [Petitioner] and making no finding as to reasonable expectation of success in combining the contested references").

Considering Carpenter for what it teaches in its entirety creates significant questions here about whether a skilled artisan would have had a reasonable expectation of success in modifying the side surfaces at the front end of Carpenter's socket in the manner claimed; questions Petitioner, and its expert, do not answer. *See* Pet. 20; Ex. 1002 ¶¶ 65–67. For example, Carpenter teaches that the disclosed recesses, and thereby the corresponding transverse, inward projections, "are generally most effective when located at or near the rear end of the nose"; are preferably "located in the thickest, most robust portion of the nose"; and are kept "away from the outer edges" of the nose walls to "reduce the creation of high stress concentrations." Ex. 1006 ¶¶ 32, 38. Regardless of whether these teachings by Carpenter amount to "teaching away" from the claimed invention, as Patent Owner argues (*see* Prelim. Resp. 49–51), they certainly demonstrate uncertainty about whether a skilled artisan would have had a reasonable expectation of success in adding to the side surfaces of the front stabilizing end of Carpenter's nose/socket to better support a point. This is because: (1) those side surfaces are located at the furthest possible portion of the nose away from its the rear end; (2) those side surfaces are located at the thinnest portion of the nose; and (3) those side surfaces are the outer most edges of the nose's front end. *See* Ex. 1006 Figs. 3, 7. As a result, in view of Carpenter's teachings, it is unclear whether the sides of the front stabilizing end of the wear assembly Carpenter discloses provides a sufficiently effective, robust location for the recess/projection bearing surfaces, and whether adding the recess/projection

to the sides could avoid sufficiently the creation of high stress concentrations.

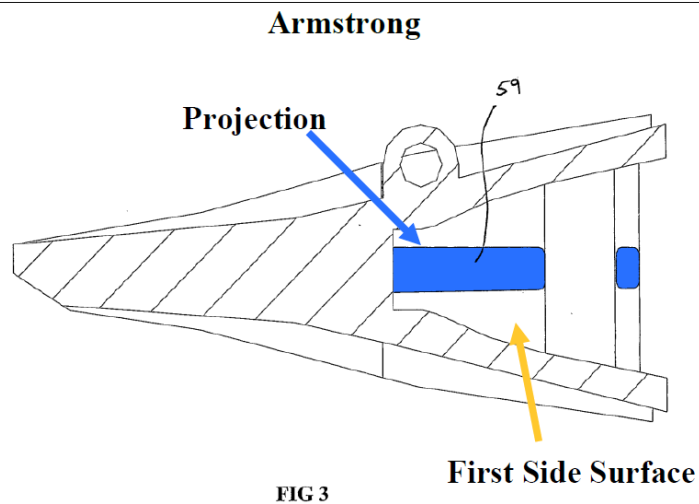
For the above reasons, we do not find Petitioner has carried its burden of showing Carpenter discloses or suggests a wear member that includes a first and second side surface at the front stabilizing end of a wear member's mounting section that each have a transverse, inward projection defined by bearing surfaces adjacent to and extending from the front thrust surface, as recited by the independent claims challenged. Therefore, based on the evidence in the Petition, we are not persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing in showing that claims 1–21 are unpatentable as being obvious in view of Carpenter.

F. Unpatentability Contentions in View of Armstrong

Petitioner contends that claims 4–6, 13, 15, 17, 19, and 20 would have been obvious to a skilled artisan at the time of the invention in view of Armstrong. Pet. 35–53. After studying Petitioner's arguments and supporting evidence, however, we are not persuaded Armstrong discloses or suggests a first and second side surfaces in the front stabilizing end of the wear member socket that each have a transverse, inward projection that is a bearing surface extending from the front thrust surface, as is necessary for each of the claims challenged here, either directly or indirectly. Our discussion, therefore, focuses on this deficiency because it is dispositive of Petitioner's contention that claims 4–6, 13, 15, 17, 19, and 20 are unpatentable in view of Armstrong.

Claims 4–6, 13, 15, 17, 19, and 20, either directly or through their dependence, recite a “wear member” that includes, in relevant part, first and second side surfaces that each “extend[] rearwardly from the front thrust

surface” of a wear member’s “mounting section” and have “a transverse, inward projection” that is a “bearing surface.” Ex. 1001, 15:30–49, 15:54–16:6, 16:16–38, 16:50–64, 17:15–18:6. And in the Petition, Petitioner relies on the same structure in Armstrong to disclose this recited structure for all of the independent claims. *See* Pet. 44–46, 47, 49–50, 51. Specifically, to show Armstrong discloses side walls at the front end of the wear member that have transverse, inward projections that are bearing surfaces, Petitioner identifies that Armstrong discloses a wear member with “inwardly projecting elongated protrusion[s] 59” that are incorporated into the member’s sidewalls, as illustrated by Petitioner annotated versions of Figure 3 reproduced below. *Id.* at 44–45 (citing Ex. 1007 ¶ 125, Figs. 1, 3; Ex. 1002 ¶ 115)



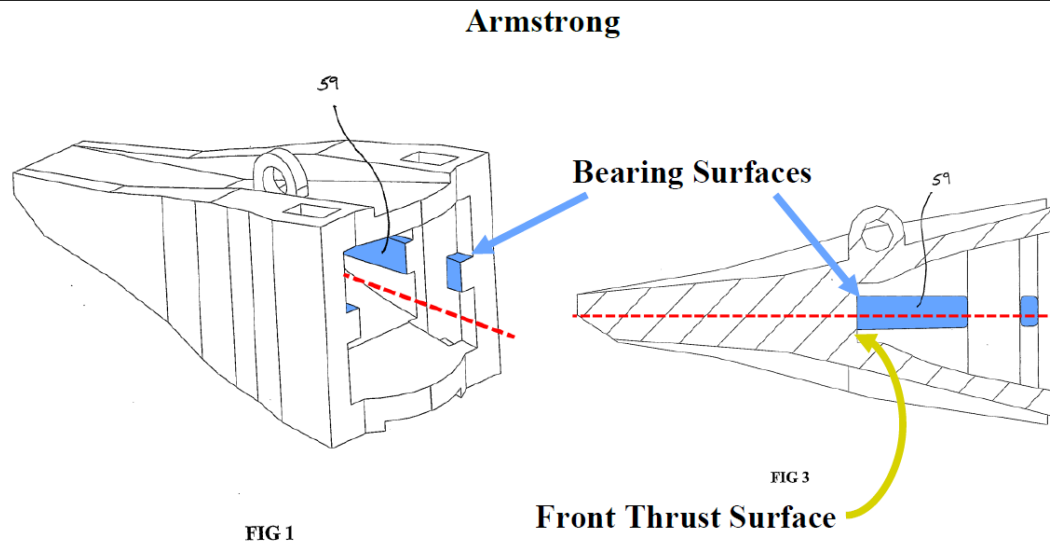


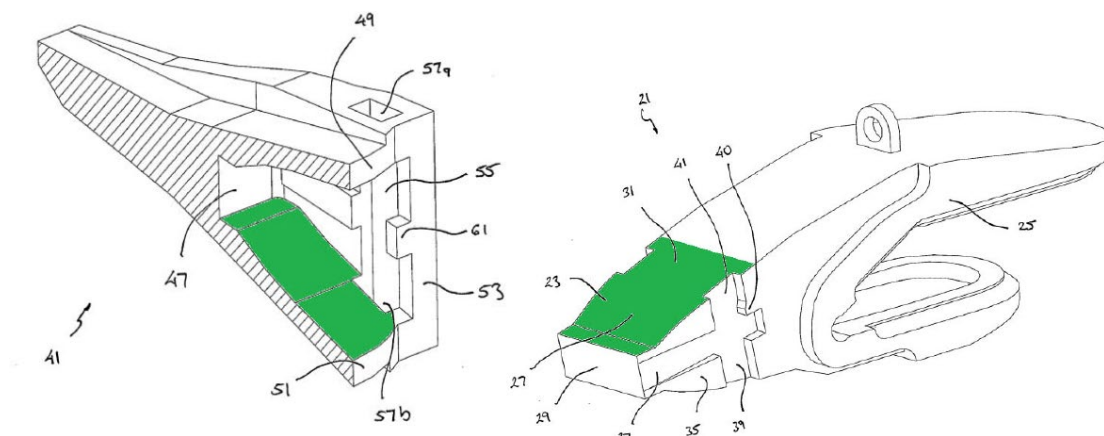
Figure 3 is a cross sectional side view of the wear member Armstrong discloses (Ex. 1007 ¶¶ 93, 95), which has been annotated with blue arrows and shading to identify side wall projections and bearing surfaces.

Patent Owner argues that the Petitioner’s reliance on sidewall protrusions 59 is misplaced because those protrusions are not bearing surfaces. Prelim. Resp. 59–62. Patent Owner asserts Armstrong’s protrusion 59 is not a bearing surfaces, as the claims require, but instead it is part of locking mechanism used to secure the wear member to the nose. *Id.* at 59. Patent Owner asserts that “the protrusion permits the wear member of Armstrong to be slid on to the nose and cooperate with a locking pin” and “has nothing to do with load bearing, nor does it include any ‘bearing surfaces.’” *Id.* at 60 (citing Ex. 2003 ¶¶ 100–102).

To support further that protrusion 59 is not a bearing surface, Patent Owner notes that “Armstrong explicitly details the surfaces that **actually provide load** bearing in its wear assembly, none of which include protrusion 59.” Prelim. Resp. 61 (citing Ex. 1007 ¶ 132, Figs. 6, 9; Ex. 2003 ¶ 104). In

particular, Patent Owner provides the following evidence from Armstrong and reasons for why it shows protrusion 59 is not a bearing surface:

Armstrong specifically describes that the protrusion and corresponding channel allows the wear member to “continue[] to slide along the nose 27 **until the internal surfaces of the upper wall 49 and bottom wall 41 of the socket engage** the upper surface 31 and lower surface 33 of the nose 27 respectively.” [Ex. 1007 ¶ 0132]. The fact that the protrusion and corresponding channel in Armstrong can “slidingly” cooperate “**until** internal surfaces of the upper wall 49 and bottom wall 41 of the socket **engage**” evidences that the protrusion and channel do not bear against one another, because sliding is possible only “until” the explicitly described bearing surfaces “engage” or mate with one another. A [skilled artisan] would understand that those surfaces which “engage” one another, as Armstrong describes, are the **actual** load bearing surfaces of its wear assembly. *See* Ex. 1007, Figs. 6, 9 (reproduced below with annotations). Indeed, in order to ensure that Armstrong’s load-bearing faces adequately engage, there must be some amount of clearance between the protrusion and first channel. “This is why Armstrong details that its wear member ‘slide[s] along the nose 27 **until**’ the load bearing faces ‘engage’ one another”. Ex. 2003 ¶ 104.



Id.

Having studied the cited portions of Armstrong, along with the relevant portions of Dr. Stern's declaration, we are not persuaded Petitioner has shown sufficiently Armstrong discloses or suggests that the transverse, inward projection in the sidewalls of the disclosed wear member includes a bearing surface.

At the time of the invention, skilled artisans understood that “[w]hile any portion of the nose may at times bear loads from the [wear member], the stabilizing surfaces are intended to be primary surfaces for resisting loads that are applied to the nose by the [wear member].” Ex. 1006 ¶ 29. Consistent with this understanding, the '175 patent teaches that, although contact between the various socket surfaces and the nose will likely occur during an excavating operation, contact between the thrust faces, the corresponding front stabilizing surfaces, and the corresponding rear stabilizing surfaces is intended to provide primary resistance to the applied loads on the tooth and thereby provide the desired stability. Ex. 1001, 10:64–11:3. Thus, because the recited transverse, inward projection that includes a bearing surface is part of a stabilizing surface in each of the independent claims challenged, the '175 patent claims and Specification provide context that demonstrates a skilled artisan understand the plain meaning of the recited “bearing surface” to be a surface through which applied loads are transferred.

To establish protrusion 59 includes a bearing surface, therefore, Petitioner had the burden of demonstrating that the protrusion includes a surface through which applied loads are transferred between the wear member and the nose during normal operation of the wear assembly. Petitioner, however, has failed to do so. In fact, Petitioner provides only a

conclusory statement that “protrusion 59 includes bearing surfaces” without including any supportive evidence from Armstrong that protrusion 59 is configured with surfaces that transfer applied loads between the wear member and the nose during normal operation. *See* Pet. 45. Notably, the Petition cites paragraph 115 of Dr Stern’s declaration, but Dr. Stern likewise provides no reasoning, or evidence from Armstrong, supporting the conclusion “protrusion 59 includes bearing surfaces.” *See* Ex. 1002 ¶ 115. Furthermore, as noted by Patent Owner, Armstrong only describes the *upper and bottom walls* in the wear member as “engaging” with the nose, which at least suggests the applied loads are transferred between the wear member and the nose through those upper and bottom walls during normal operation, and, moreover, Armstrong describes the nose as having a “channel” to “slidingly” receiving protrusion 59 until engagement between the top and bottom walls occurs without any suggestion protrusion 59 ever actually engages the side wall of the nose to allow for the transfer of loads applied during normal operation. Ex. 1007 ¶ 132.

For the above reasons, we do not find Petitioner has carried its burden of showing Armstrong discloses or suggests a transverse, inward projection in the sidewalls of the disclosed wear member that includes a bearing surface. Therefore, based on the evidence in the Petition, we are not persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing in showing that claims 4–6, 13, 15, 17, 19, and 20 are unpatentable as being obvious in view of Armstrong.

G. Unpatentability Contentions in View of Armstrong and Carpenter

Petitioner contends the combination of Armstrong and Carpenter renders claims 1–3, 7–12, 14, 16, 18, and 21 obvious. Pet. 53–64. Claims

1–3, 7–12, 14, 16, 18, and 21, either directly or through their dependence, recite a “wear member” that includes, in relevant part, first and second side surfaces that each “extend[] rearwardly from the front thrust surface” of a wear member’s “mounting section” and have “a transverse, inward projection” that is a “bearing surface.” Ex. 1001, 15:4–29, 15:54–16:67, 17:8–18:9, 18:22–28. In this ground, however, Petitioner relies on the same evidence and arguments from Armstrong to demonstrate the prior art discloses a transverse, inward projection in the front sidewalls of the disclosed wear member that includes a bearing surface. Pet. 54, 59, 62, 63. Therefore, for the same reasons discussed above (*supra* § II.F), we are not persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing in showing that claims 1–3, 7–12, 14, 16, 18, and 21 are unpatentable as being obvious in view of Armstrong and Carpenter.

III. CONCLUSION

For the foregoing reasons, we determine that the Petition and evidence in this record does not establish a reasonable likelihood that Petitioner would prevail in showing any of the challenged claims of the ’175 patent are unpatentable.

IV. ORDER

Accordingly, it is:

ORDERED that the Petition is *denied* as to the challenged claims of the ’175 patent; and

FURTHER ORDERED that no *inter partes* review is instituted.

IPR2022-00186
Patent 8,844,175 B2

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