

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

DEERE & COMPANY,
Petitioner,

v.

ESCO GROUP LLC,
Patent Owner.

IPR2022-00187
Patent 10,273,662 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 1–26 (“the challenged claims”) of U.S. Patent No. 10,273,662 B2 (Ex. 1001, “the ’662 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 15, “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 16, “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 ’662 patent.

A. *Real Parties in Interest*

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

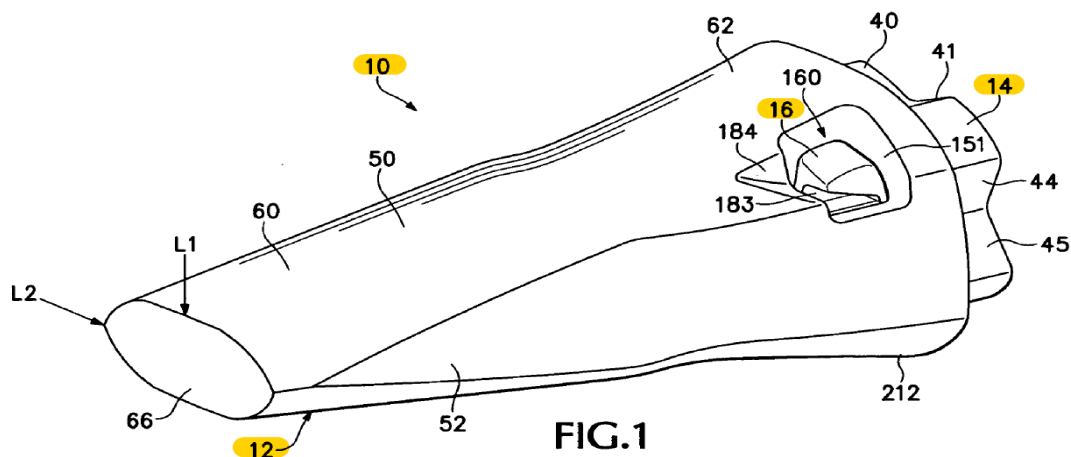
B. Related Matters

The parties indicate that the '662 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. 8,844,175 B2, which Petitioner challenges in the Petition concurrently filed in IPR2022-00186. Pet. 2.

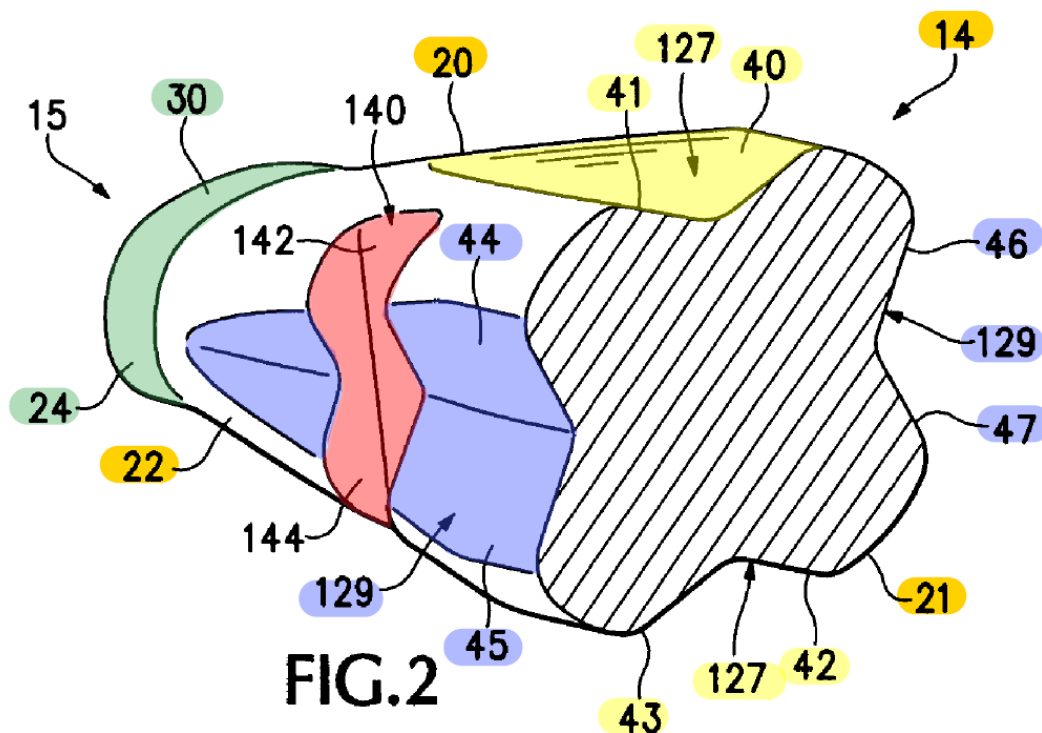
C. The '662 Patent

The '662 patent, 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. 1001, 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.* at 1:34–40. The '662 patent 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, the '662 patent 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.* at 2:25–30.

An illustration of this wear assembly 10 is shown in Figure 1 of the '662 patent, reproduced below.



In Figure 1, highlights are added to identify the wear member 12 (also referred to as a “point”) and nose 14, which are secured together by a lock 16. *Id.* at 3:4–19. The nose 14 is illustrated in Figures 2 and 3 below with highlights and shading added by the Board for ease of identification.



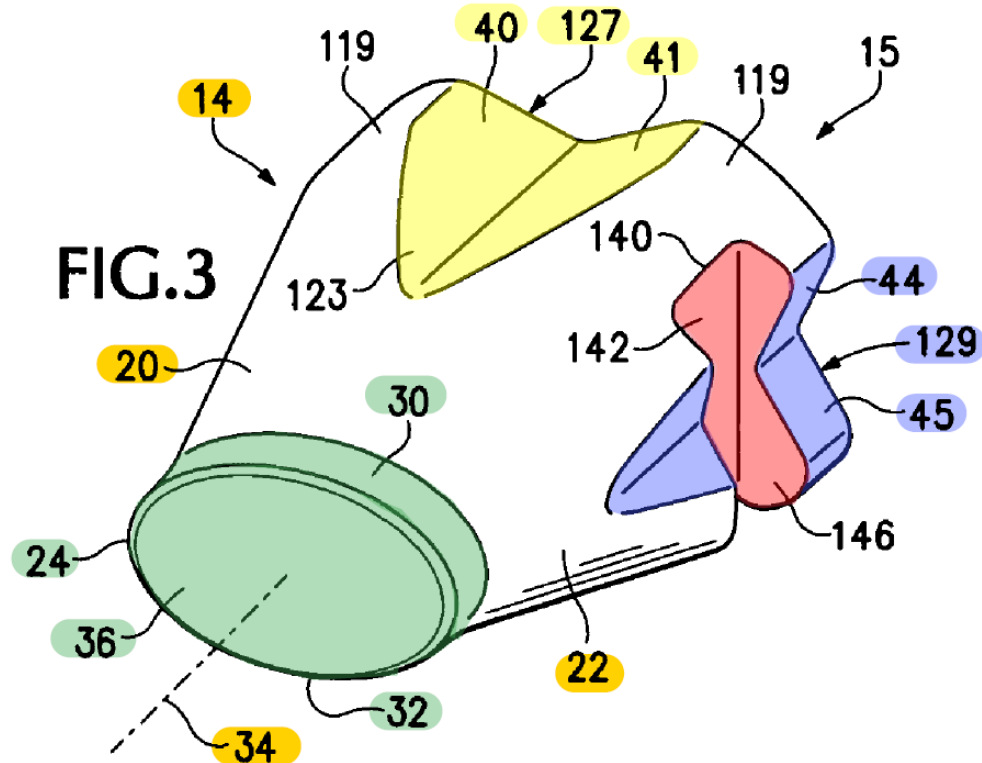


Figure 2 is a rear perspective of the nose, and Figure 3 is a front perspective of the same. *Id.* at 2:36–38. The ’662 patent describes the nose as having a body “with top and bottom walls 20, 21 that converge toward a front end 24, and opposite sidewalls 22, 23.” Ex. 1001 at 3:20–23. Additionally, the nose has several “stabilizing surfaces” located both at the front end and the rear end of the body. *Id.* at 3:20–4:3. The ’662 patent 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.* at 3:66–4:3.

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.” *Id.* at 3:39–42. The ’662 patent 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.* at 3:44–48. In addition, although “the front end and body of the nose could have other shapes,” the ’662 patent 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.* at 3:48–53.

Front end 24 is described in the ’662 patent 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. *Id.* at 3:25–33. 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 the nose 14. *Id.* at 3:33–35. The ’662 patent teaches, however, that “other configurations are possible.” *Id.* at 3:37–38

The ’662 patent describes the top, bottom, and side walls 20–23 of the nose body as “each includ[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. 1001, 3:60–66. “As seen [in] FIGS. 2 and 3, rear stabilizing surfaces . . . are preferably planar and oriented to form V-shaped recesses 127[, 129] in the nose.” *Id.* at 5:60–62. “However, these rear stabilizing surfaces could have a myriad of different shapes and orientations.” *Id.* at 5:62–64.

The '662 patent 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. 1001, 4:38–40, 6:20–21. The '662 patent 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.* at 4:41–44. The '662 patent 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.* at 4:45–48, 4:53–55.

The '662 patent 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. 1001, 4:4–5. “The mounting end 62 is formed with a socket 70 that receives nose 14 for supporting the point on the excavating equipment.” *Id.* at 4:10–12. The '662 patent teaches that, “[p]referably, socket 70 has a shape that is complementary to nose 14, though some variations could be included.” *Id.* at 4:14–15.

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.

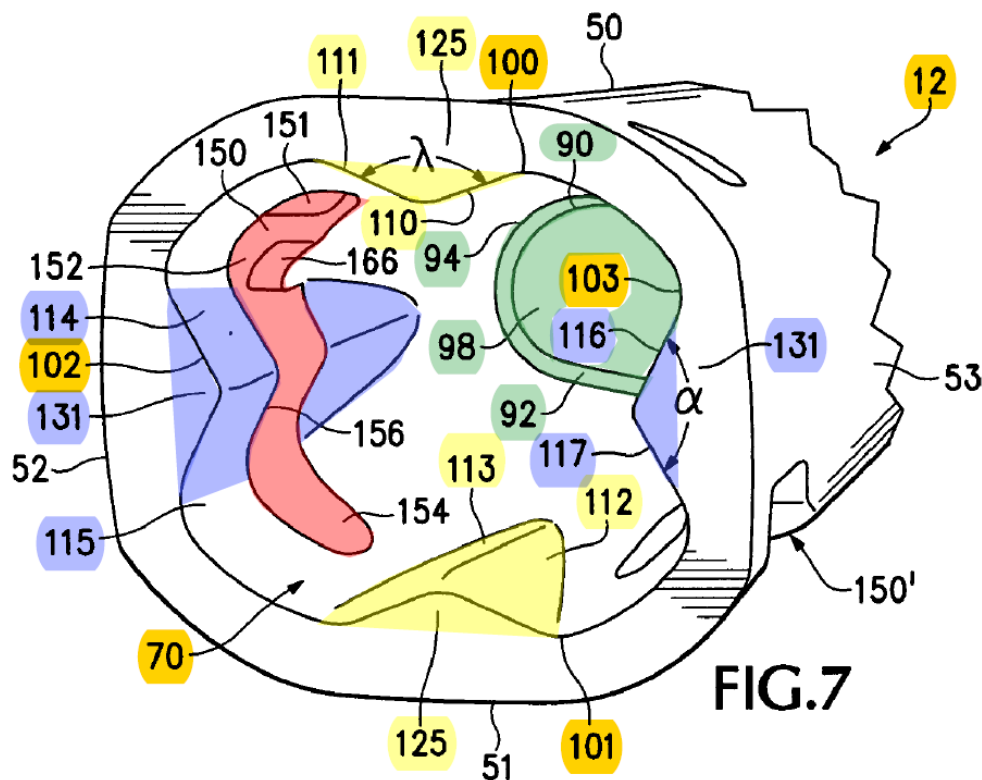


Figure 7 is a partial, rear perspective view of the wear member 12 and shows the configuration of socket 70. Ex. 1001, 2:42–43. The '662 patent describes socket 70 as including “a front end 94 with top and bottom stabilizing surfaces 90, 92 and a generally elliptical front surface 98 to match front end 24 of the nose.” *Id.* at 4:16–19. 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 4:19–21. Additionally, the '662 patent 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.* at 4:26–28. The '662 patent teaches that 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.* at 5:26–36. The ’662 patent 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.* at 7:64–67.

D. Illustrative Claims

Claims 1, 8, 14, and 21 are independent; claims 2–7 depend from claim 1; claims 9–13 depend from claim 8; claims 15–20 depend from claim 14; and claims 22–26 depend from claim 21. Claims 1 and 8 are reproduced below with emphasis added to the claim elements that are the focus of this decision:

1. A wear assembly for excavating equipment comprising:
a base secured to the excavating equipment, the base including
a front end with a front wall and a pair of front bearing
surfaces, a rear end with at least one recess defining a pair of
rear bearing surfaces, and a lock bearing surface;
a wear member including a rearward-opening socket for
receiving the base, and an opening, the socket having a
longitudinal axis and including (i) a front end with a front
surface transverse to the longitudinal axis to bear against the
front wall on the base, and a top stabilizing surface and a
bottom stabilizing surface to bear against the front bearing
surfaces on the base, and (ii) **a rear end with a top wall, a
bottom wall and side walls extending rearward from the
front end, at least one of the top and bottom walls
including a pair of rear stabilizing surfaces inclined
relative to each other in different transverse directions so
as to laterally converge inward toward a central location
along the respective top or bottom wall to define an
inward projection and positioned to bear against the
rear bearing surfaces in the at least one recess in the base
to resist both vertical and horizontal loads during
excavating**, said top stabilizing surface, said bottom
stabilizing surface, and each said rear stabilizing surface

axially extending substantially parallel to the longitudinal axis; and

a lock received into the opening of the wear member and in contact with the lock bearing surface on the base to hold the wear member to the excavating equipment.

8. A wear assembly for excavating equipment comprising:

a base secured to the excavating equipment, the base including a front end with a front wall and front bearing surfaces, a rear end having opposite sides with a side recess in each of the sides, and a lock bearing surface;

a wear member including a rearward-opening socket for receiving the base, and an opening, the socket having a longitudinal axis and including (i) a front end with a front surface transverse to the longitudinal axis to bear against the front wall on the base, and a top stabilizing surface and a bottom stabilizing surface to bear against the front bearing surfaces on the base, and (ii) **a rear end with a top wall, a bottom wall and side walls extending rearward from the front end, the side walls each including a pair of side stabilizing surfaces inclined relative to each other in different transverse directions so as to laterally converge inward toward a central location along the respective side wall and positioned to bear against complementary surfaces in respective side recesses in the base to resist both vertical and horizontal loads during excavating,** said top stabilizing surface, said bottom stabilizing surface, and each said side stabilizing surface axially extending substantially parallel to the longitudinal axis; and

a lock received into the opening of the wear member and in contact with the lock bearing surface on the base to hold the wear member to the excavating equipment.

Ex. 1001, 10:30–58, 11:24–50. Independent claim 14 includes substantially similar limitations to those highlighted above in claim 1 and independent claim 21 includes substantially similar limitations to those highlighted above in claim 8. *Id.* at 12:9–17, 12:55–61.

E. Prior Art Relied Upon

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

Name	Reference	Date	Exhibit No.
Jones	US 5,709,043	Jan. 20, 1998	1013
Liess	US 3,624,827	Nov. 30, 1971	1014
Livesay	US 5,561,925	Oct. 8, 1996	1015

F. Asserted Grounds of Unpatentability

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

Claims Challenged	35 U.S.C. §¹	Reference(s)
1–26	103(a)	Jones, Liess
8–13, 21–26	103(a)	Livesay

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 '662 patent because claims 1–26 would have been obvious in view of Jones and Liess (see Pet. 8–44) and because claims 8–13 and 21–26 would have been obvious in view of Livesay (see Pet. 44–72). Patent Owner

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 '662 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.

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. 20–31. 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 31–57.

After studying the contentions and evidence submitted by both parties, we agree with Patent Owner that the Petition does not demonstrate sufficiently that the asserted prior art discloses or suggests 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 ’662 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 suggests.” *Bradium Techs. LLC v. Iancu*, 923 F.3d 1032, 1049 (Fed. Cir. 2019) (citation omitted). And because a prior art reference can provide

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

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) (2021). 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. 20). 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).

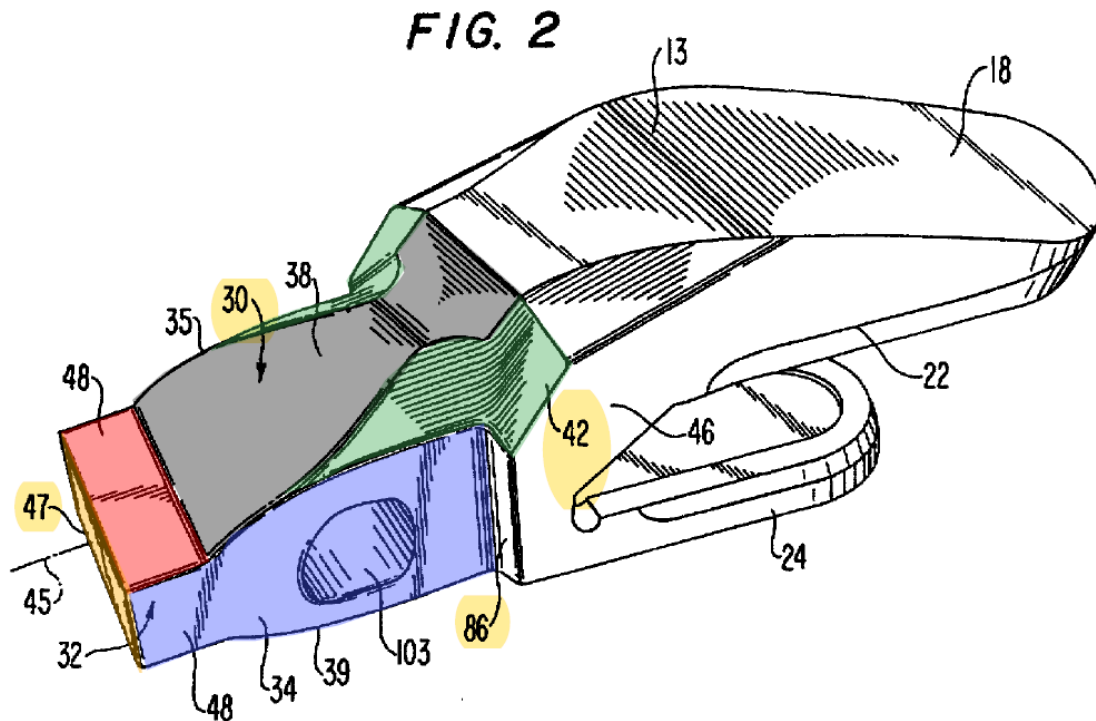
Petitioner asserts, with the support of Dr. Stern, that a person of ordinary skill in the art of the ’662 patent “would have had at least a bachelor’s degree in mechanical engineering or a related discipline, or have at least three years of experience working with wear assemblies for excavating equipment.” 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. 17–18 (citing Ex. 2003 ¶¶ 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. Jones (Exhibit 1013)

Jones, titled “Excavating Tooth,” describes an “excavating tooth for attachment to the digging edge of excavating equipment [that] includes a wear member provided with bearing faces in a socket which extend substantially parallel to the longitudinal axis of the tooth.” Ex. 1013, codes (54), (57). The nose and wear member that Jones discloses to illustrate the excavating tooth are illustrated in Figures 2 and 3 are below with shading added by the Board for ease of identification.



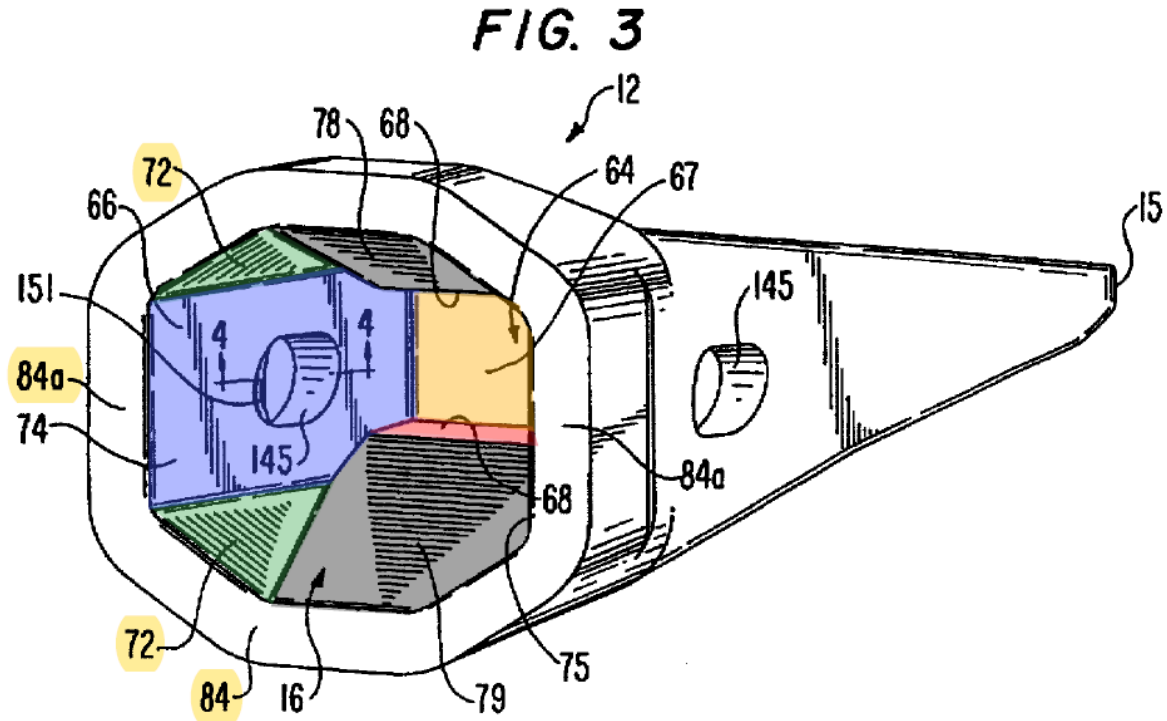


Figure 2 is a perspective view of the nose in the wear assembly Jones discloses, and Figure 3 is a perspective view of the wear member in the wear assembly Jones discloses. Ex. 1013, 3:27–30.

Referring to the nose illustrated in Figure 2, front portion 32 includes front 47 (orange), top 48 (red), and bottom 48 bearing faces, which form a box shaped apex the adjacent portion of sidewalls 34, 35 (blue). *Id.* at 5:44–46. Jones describes the top and bottom bearing faces 48 as being “substantially planar and lie substantially parallel to axis 45” of the assembly to “provide a stable frame work for supporting the [wear member (Figure 30)] under loading in vertical directions.” *Id.* at 5:47–48, 5:52–55. “Front

bearing face 47 extends generally orthogonally between top and bottom bearing faces 48 to resist thrust forces.” *Id.* at 5:48–50.

Jones describes rear body portion 30 as being defined by a pair of generally planar and parallel side walls 34, 35 (blue), top and bottom walls 38, 39 (gray) are tapered to define a body portion that has a generally wedge-shaped configuration, and bearing faces 42 (green) provided at each juncture of the side walls with the top and bottom walls. Ex. 1013, 5:13–23. “Bearing faces 42 are substantially planar surfaces which extend longitudinally along the rear portions of nose 20 so as to be substantially parallel to the longitudinal axis 45.” *Id.* at 5:24–26. Jones teaches that because of tapering of top and bottom walls 38, 39 bearing faces 42 widen considerably as they extend rear ward, which is beneficial in providing a firm and stable resistance to the applied moment forces. *Id.* at 5:28–32. Jones describes bearing faces 42 as being inclined to form four bevel corners for body 30 and form broad obtuse angles with walls 34-35, 38-39. *Id.* at 5:33–35. Jones teaches that “[a]lthough the inclination of bearing faces 42 could be varied, they should have a greater horizontal orientation than vertical” to “provide a very stable mount for the [wear member] while creating less stress concentration at the corners than a conventional tapered bearing tooth with 90 corners.” *Id.* at 5:37–43.

Referring to the wear member Figure 3 illustrates, Jones teaches that “socket 16 has basically the same configuration as nose 20.” Ex. 1013, 5:66–67. Jones describes socket 16 as having front portion 64 that includes front 67 (orange), top and bottom 68 (red) bearing faces that are “adapted to abut bearing faces 47, 48 of nose 20.” *Id.* at 6:2–4. Jones describes cavity 66 as also including bearing faces 72 (green) that are “adapted to abut

bearing faces 42” in nose 20. *Id.* at 6:5–6. Jones describes top and bottom walls 78, 79 (gray) of cavity 66 as being “tapered to extend generally parallel to or slightly divergent (in a rearward direction) from top and bottom walls 38, 39 of nose 20” and “spaced from walls 38, 39 to ensure that the bearing engagement occurs along the engagement of bearing faces 42, 72.” *Id.* at 6:6–12. Sidewalls 74, 75 (blue) are described as being generally parallel to and “slightly spaced” from sidewalls 34, 35. *Id.* at 6:12–14.

2. *Liess (Exhibit 1014)*

Liess, titled “Earthworking Tooth and Supporting Adapter,” describes an earthworking tip suitable for mounting on an adapter that is wedge-shaped using a rearwardly facing V-shaped projection formed in the tip to mate with a V-shaped opening in the adapter to transfer loads from the tip to the adapter. Ex. 1014, code (54), Abstract.

3. *Livesay (Exhibit 1015)*

Livesay, titled “Tooth Assembly and Retaining Mechanism,” describes a wear member and nose arrangement with a retaining mechanism that utilizes a double flex pin to eliminate the need for supplemental devices or components to retain such retaining pin. Ex. 1015 codes (54), (57). Livesay describes that the pin is provided with a pair of protrusions defining a detent valley therebetween on one surface to receive a detent protrusion. *Id.* code (57). The retaining pin is caused to flex in one direction by insertion through a curved passage defined by the wear member and nose to snugly secure the tip to the nose and is also caused to flex perpendicular to the first direction to locate the detent protrusion of the wear member in the

detent valley of the pin. *Id.* Livesay teaches that the force necessary to flex the pin sufficiently to allow the detent to be separate from the detent valley prevents the pin from being lost during use. *Id.*

E. Unpatentability Contentions in View of Jones and Liess

Petitioner contends that the challenged claims would have been obvious to a skilled artisan at the time of the invention in view of Jones and Liess. Pet. 8–44. After studying Petitioner’s arguments and supporting evidence, however, we are not persuaded Jones and Liess, individually or in combination, disclose or suggest, in either the top, bottom, or side walls at the rear of the wear member, a pair of rear stabilizing surfaces inclined relative to each other in different transverse directions so as to laterally converge inward toward a central location along the respective wall to define an inward projection and positioned to bear against the rear bearing surfaces in a recess in the base to resist both vertical and horizontal loads during excavating, as recited by the independent claims challenged. Our discussion, therefore, focuses on this deficiency because it is dispositive of Petitioner’s contention that claims 1–26 are unpatentable in view of Jones and Liess.

Independent claims 1 and 14 recite, in relevant part, “a wear member” including “a rearward-opening socket for receiving the base” that includes a rear end with . . . at least one of the top and bottom walls including a pair of rear stabilizing surfaces inclined relative to each other in different transverse directions so as to laterally converge inward toward a central location . . . to define an inward projection and positioned to bear against the rear bearing surfaces in the at least one recess in the base to resist both vertical and horizontal loads during excavating.

Ex. 1001, 10:36–37, 10:42–52, 11:66–67, 12:7–16. Petitioner contends “Jones discloses that its nose 20 includes a projection defining the pair of bearing surfaces 42,” and provides as support an annotated version of Figures 3 and 6, reproduced below. Pet. 25 (citing Ex. 1002 ¶ 56).

Jones

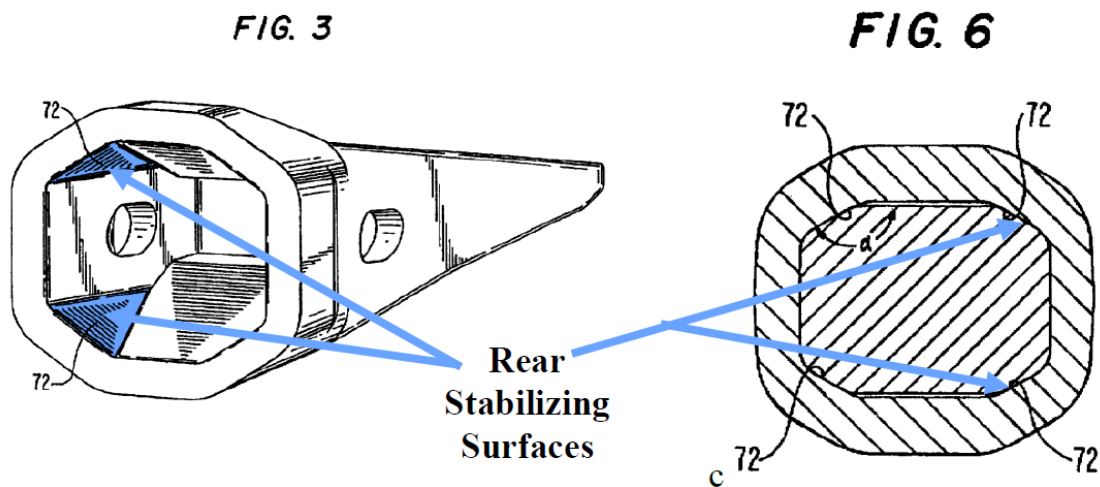
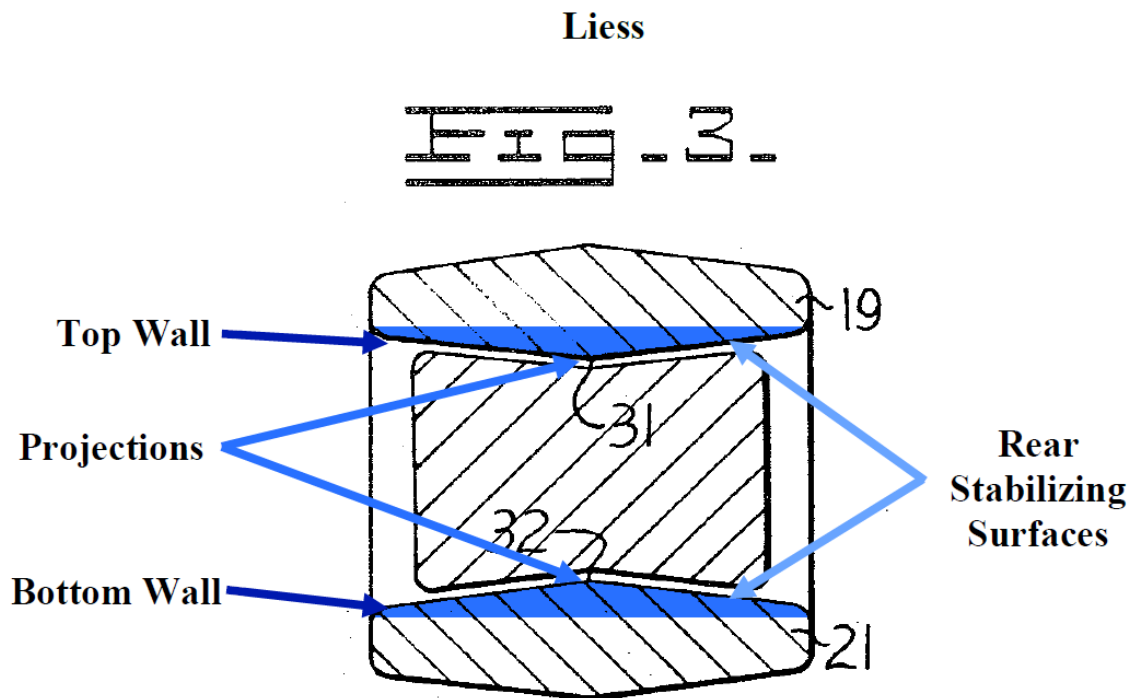


Figure 3 shows the socket of the wear member that Jones discloses with bearing surfaces 72 shaded in blue and arrows identifying them as “rear stabilizing surfaces,” and Figure 6 shows a cross-sectional view of the wear member and nose assembled with arrows identifying as “rear stabilizing surfaces” where the nose contacts the wear member at bearing surfaces 72. Petitioner contends that, in Figure 3 and 6, “Jones depicts ‘cavity 66 includes bearing faces 72 [the claimed pair of rear stabilizing surfaces] which are adapted to abut bearing faces 42’” and that bearing faces 72 are configured in a manner that satisfies this limitation. *Id.* (citing Ex. 1013, 6:5–6; Figs. 2, 3, 5, 6). Petitioner states, “[i]t would have been obvious to a [skilled artisan] to invert the recess of Jones’s cavity 66 to the claimed projection as it would have been a known and predictable solution to

improve a similar device to solve a known problem (e.g., withstanding ‘laterally directed forces’).” *Id.* (citing Ex. 1002 ¶ 56).

Petitioner additionally relies on an annotated version of Figure 3 from Liess, reproduced below. Pet. 26.



Petitioner contends Figure 3 “shows each of top and bottom walls 19, 21 of nose portion 16 includes a pair of stabilizing surfaces configured in a manner that satisfies this limitation (i.e., V-shaped projections 31, 32).” *Id.* (citing Ex. 1002 ¶ 56).

Because “Jones and Liess acknowledge the known problems of vertical and horizontal loading on the tooth and adapter, and Liess teaches V-shaped projections on its tooth mating with V-shaped recesses on its nose as a solution to resist horizontal pivoting of the tooth upon the adaptor,” Petitioner states that “it would have been obvious to a [skilled artisan] to modify at least one of the projections of Jones to be V-shaped as taught by

Liess.” *Id.* (citing Ex. 1002 ¶ 56). Petitioner contends that “[s]uch a modification would solve a known problem by using a known and predictable solution to improve a similar device and would have been ‘obvious to try.’” *Id.* Such a modification, Petitioner adds, is consistent with the common understanding by skilled artisans that “increased contact between surfaces with inward projections . . . distribute stress and transmit loads more effectively.” *Id.* at 26–27(citing Ex. 1002 ¶ 56).

Patent Owner argues that there are several deficiencies with Petitioner’s contentions. *See* Prelim. Resp. 36–49. In particular, Patent Owner first asserts that Petitioner’s reliance on Jones disclosing projections is misplaced because the evidence from Jones describes bearing surfaces 42 in the nose as “inclined surfaces” that form “beveled corners” between a sidewall (34, 35) and a top or bottom wall (38, 39) of the nose; correspondingly, Jones describes bearing surfaces 72 in the socket as having basically the same configurations so that it is “adapted to abut bearing faces 42” of the nose, as shown by annotated Figure 6 below. *Id.* at 36–38 (citing Ex. 1013, 5:22–35, 6:5–6, Fig. 6; Ex. 2003 ¶¶ 67–68).

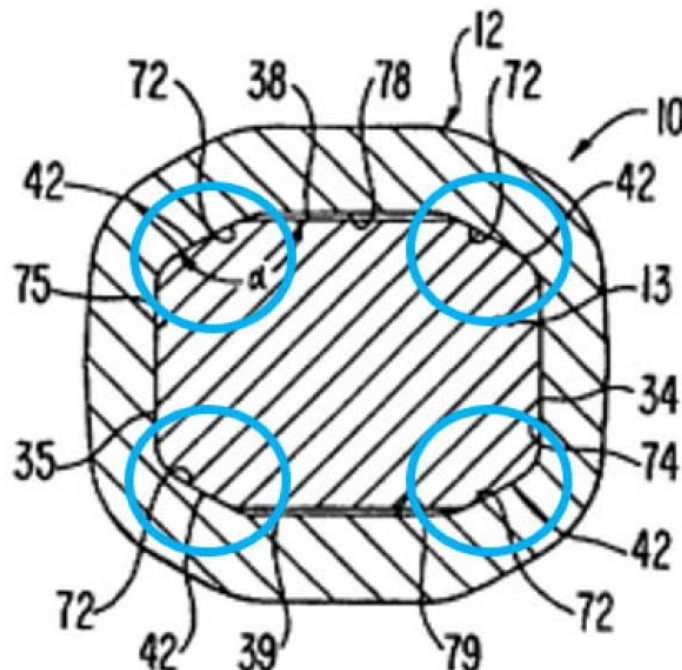


Figure 6 is a cross-sectional view of a rear section of the wear assembly that Jones discloses with blue circles around the contacting bearing surfaces 42, 72. *Id.* A skilled artisan would recognize, according to Patent Owner, that bearing surfaces 42, 72 are simply inclined surfaces and do not disclose either a “projection” or a “recess” in any of the top, bottom, or side walls of the wear assembly that Jones discloses. *Id.* at 38.

Patent Owner also asserts Petitioner’s evidence from Jones falls short for disclosing a rear stabilizing surface in either a top, bottom, or side wall. Prelim. Resp. 48–49. As support, Patent Owner points out that that “Petitioner identifies the **very same** bearing surfaces 72 of Jones as **both** ‘top and bottom’ stabilizing surfaces **and** ‘side stabilizing surfaces,’” and asserts the same surface cannot be included in the distinctly separate top, bottom, and side walls, respectively. *Id.* at 49 (citing Pet. 25, 36; Ex. 2003 ¶¶ 93–94).

Lastly, Patent Owner asserts Petitioner's reliance on Liess to modify the socket and nose of the wear assembly Jones discloses "fails" because "Jones **explicitly teaches away** from Petitioner's proposed modification." Prelim. Resp. 39. Patent Owner asserts the suggested modification by Petitioner to "invert" bearing surfaces 42, 72 in Jones to form the "V-shaped" projections that Liess discloses would create sharp corners of "even **less than 90°**" between the top or bottom wall and the side walls of the nose, as annotated Figure 3 of Liess below exemplifies. *Id.* at 40.

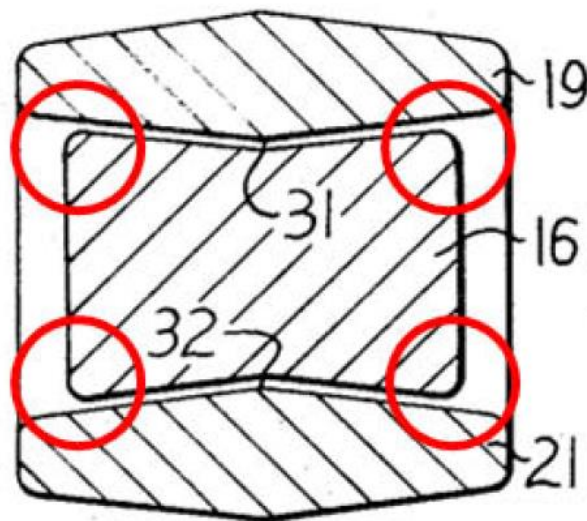


Figure 3 in Liess is a cross-sectional view of a front section of the wear assembly that Liess discloses with red circles around the corners of the nose. *Id.* Such a result, Patent Owner asserts, is expressly discouraged by the teachings of Jones. *Id.* at 39.

Patent Owner asserts that Jones teaches to configure the nose of a wear assembly to have "a structure that minimizes concentration of stresses by eliminating or reducing the effect of corners in its wear member and base." Prelim. Resp. 39. Patent Owner highlights that "Jones teaches [specifically] that every 'bearing face is provided between the side and

converging walls at **obtuse angles** thereto.’ With this construction, the formation of sharp corners with their attendant high stress concentrations, as in the prior art, are avoided” and asserts that “Jones even goes so far as to describe that angles ‘90°’ or less are specifically avoided by its obtuse-angled bearing faces,” which “Jones explicitly illustrates . . . in Fig[ure] 6” (reproduced above). *Id.* (citing Ex. 1013, 2:55–59, 5:40–43, Fig. 6). Additionally, Patent Owner notes the configuration taught by Jones deliberately keeps the top, bottom and side walls of the socket and nose spaced apart when assembled “to ensure that the bearing engagement [between the socket and nose] occurs along bearing faces 42, 72 (FIG. 6)” between those walls. *Id.* at 41 (citing Ex. 1013, 6:9–14; Ex. 2003 ¶ 74).

Having studied the cited portions of Jones and Liess, along with the relevant portions of Dr. Stern’s declaration, we are not persuaded Petitioner has shown sufficiently Jones or Liess disclose or suggest a pair of rear stabilizing surfaces in any of the rear top, bottom, or side walls of the wear assembly nose or socket that are inclined relative to each other in different transverse directions so as to laterally converge inward toward a central location to define an inward projection to bear against the recessed rear bearing surfaces in the nose to resist both vertical and horizontal loads during excavating, as called for in the independent claims.

First, Petitioner has not shown sufficiently that Jones discloses a pair of projections or recesses defining a bearing surface in any of the top, bottom, or side walls at the rear of the nose or socket of a wear assembly. As an initial matter, we note that Petitioner identifies top wall 78, bottom wall 79, side walls 74, 75 in Jones as disclosing the recited “top wall, bottom wall and side walls extending rearward from the front end” of the “rear end”

of the wear member. Pet. 24 (citing Ex. 1013, 5:67–6:2, 6:6–9, 6:12–14, Fig. 3; Ex. 1002 ¶ 55). Petitioner, however, misplaces its reliance on (1) bearing faces 42 to define a projection *formed by* any of the top, bottom, or side walls at the rear of the nose, and (2) bearing surfaces 72 defining recesses *formed by* any of the top, bottom, or side walls at the rear of the nose. This is so because, in the wear assembly taught by Jones, rear bearing surfaces 42, 72 are wholly separate and distinct from the rear top, bottom, and side walls in nose and socket. Jones describes the rear bearing surfaces as being “located along the corners of the nose (i.e., *at the junctures* of the top and bottom walls with the sidewalls” and as being located “*between* the side and converging walls at obtuse angles thereto.” Ex. 1013, 2:41–42, 2:55–57 (emphases added). Jones further identifies the rear top, bottom, side walls, and bearing surfaces as a separate and distinct parts defining the rear body portion 30 of nose 20, as follows.

The rear body portion 30 is defined by a pair of side walls 34, 35, top and bottom walls 38, 39, and bearing faces 42. The side walls 34, 35 are generally planar surfaces which are substantially parallel to one another; although a slight taper is usually provided for manufacturing purposes. The top and bottom walls 38, 39 are tapered to define a body portion which has a generally wedge-shaped configuration. A bearing face 42 is provided at each juncture of the side walls 34, 35 with the top and bottom walls 38,39. Bearing faces 42 are substantially planar surfaces which extend longitudinally along the rear portions of nose 20 so as to be substantially parallel to the longitudinal axis 45 of the tooth.

Ex. 1013, 5:15–27. Similarly, Jones identifies the rear top, bottom, side walls, and bearing surfaces as a separate and distinct parts that define cavity 66 of socket 16, as follows.

As can be appreciated, socket 16 has basically the same configuration as nose 20 (FIG. 3). In particular, socket 16 comprises . . . cavity 66 includes bearing faces 72 which are adapted to abut bearing faces 42. Top and bottom walls 78, 79 of cavity 66 are tapered to extend generally parallel to or slightly divergent (in a rearward direction) from top and bottom walls 38, 39 of nose 20 . . . Cavity 66 further includes sidewalls 74, 75 which are generally parallel to sidewalls 34, 35 (FIG. 3).

Id. at 6:5–14; *see also id.* at 2:34–37 (“the nose and socket *are each defined* by a pair of top and bottom converging wall, a pair of side walls, *and two sets of bearing surfaces*”) (emphases added). And consistent with this understanding that the rear bearing surfaces are separate and distinct parts from the rear top, bottom, and side walls, Jones describes the top and bottom walls 78, 79 of socket 16 as being “spaced from walls 38, 39” of nose 20 “to ensure that the bearing engagement occurs along the engagement of bearing faces 42, 72 (FIG. 6)”; likewise, rear sidewalls 74, 75 of socket 16 are described as being “generally parallel to” and “slightly spaced” from sidewalls 34, 35 of nose 20. *Id.* at 6:9–14. Therefore, Jones does not support Petitioner’s reliance on bearing faces 42, 72 to demonstrate that a rear top, bottom, or side wall of either the socket or nose includes a projection or recess.

Second, Jones teaches against Petitioner’s proposed modification of nose 20 by “inverting” its bearing faces 42 to form a recess, such as the one Liess discloses. As Patent Owner correctly identifies, similar to the configuration shown in Figure 3 of Liess, by inverting bearing faces 42, the adjacent walls would form an acute angle creating a sharp corner. But Jones teaches that it is important for there to be “obtuse angles” between adjacent walls at the rear of the nose portion so that the formation of “high stress

concentrations . . . are avoided.” Ex. 1013, 2:55–59; *see also id.* at 5:33–43. Jones teaches that having a 90° angle between adjacent walls at the rear portion of the nose creates corners that “cause greater stress concentrations at [those] points under load, which in turn, weakens the overall strength of the [wear member].” *Id.* at 1:66–2:8. Jones teaches further, we note, that “sets of bearing faces along the top and bottom wall of the nose,” which lay “parallel to the axis of the [wear member],” are undesirable for use along the rear end of the nose because it “disrupts the formation of smooth transition between the nose the legs [(i.e., the base of the nose)]” and, “[a]s a result, the transition structure is susceptible to high stress concentrations and an increased risk of failure.” *Id.* at 2:9–16.

After considering the disclosures of Jones and Liess in their entirety, for the above reasons, we do not find Petitioner has carried its burden of showing Jones and Liess, individually or combined, discloses or suggests “a wear member” including “a rearward-opening socket for receiving the base” that includes

a rear end with . . . at least one of the top and bottom walls including a pair of rear stabilizing surfaces inclined relative to each other in different transverse directions so as to laterally converge inward toward a central location . . . to define an inward projection and positioned to bear against the rear bearing surfaces in the at least one recess in the base to resist both vertical and horizontal loads during excavating.

Ex. 1001, 10:36–37, 11:42–52, 11:66–67. 12:7–16. 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 and 14, as well as claims 2–7 and 15–20 depending therefrom, are unpatentable as being obvious in view of Jones and Liess.

Independent claims 8 and 21 recite, in relevant part, “a wear member including a rearward-opening socket for receiving the base” that includes

a rear end with . . . side walls each including a pair of side stabilizing surfaces inclined relative to each other in different transverse directions so as to laterally converge inward toward a central location along the respective side wall and positioned to bear against complementary surfaces in respective side recesses in the base to resist both vertical and horizontal loads during excavating.

Ex. 1001, 11:29–30, 11:42–52, 12:45–46. 12:53–61. Petitioner contends Jones and Liess disclose or suggest these limitations based on substantially the same evidence and reasons provided for claims 1 and 14. *See* Pet. 36–38, 43. Therefore, for the same reasons we provided for claims 1 and 14, we are not persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing in showing that claims 8 and 21, as well as claims 9–13 and 22–26 depending therefrom, are unpatentable as being obvious in view of Jones and Liess.

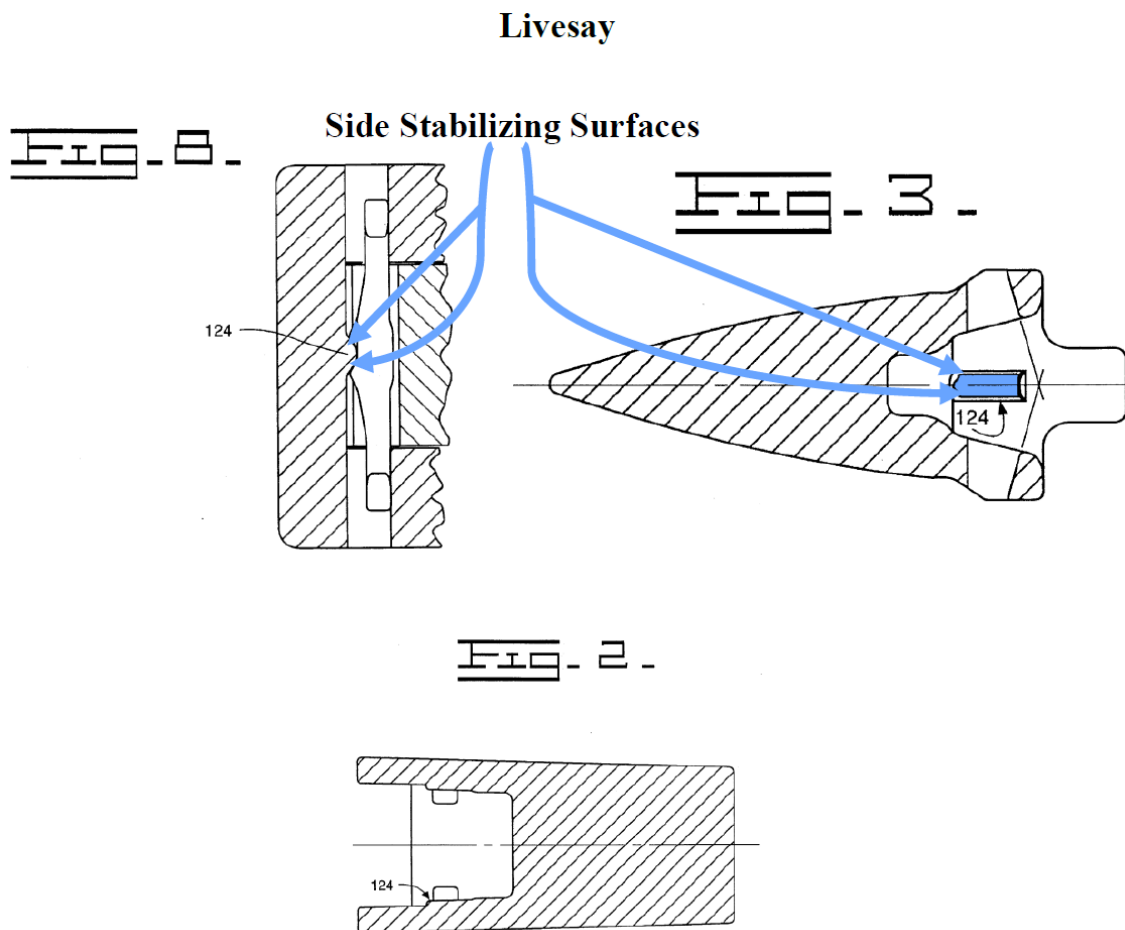
F. Unpatentability Contentions in View of Livesay

Petitioner contends that claims 8–13 and 21–26 would have been obvious to a skilled artisan at the time of the invention in view of Livesay. Pet. 44–72. After studying Petitioner’s arguments and supporting evidence, however, we are not persuaded Livesay discloses or suggests a wear member with a socket that includes

a rear end with . . . side walls each including a pair of side stabilizing surfaces inclined relative to each other in different transverse directions so as to laterally converge inward toward a central location along the respective side wall and positioned to bear against complementary surfaces in respective side recesses in the base to resist both vertical and horizontal loads during excavating.

Ex. 1001, 11:29–30, 11:42–52, 12:45–46. 12:53–61. This limitation is recited in both independent claims 8 and 21 challenged in this ground. *Id.* Our discussion, therefore, focuses on this deficiency because it is dispositive of Petitioner’s contention that claims 8–13 and 21–26 are unpatentable in view of Livesay.

Petitioner contends that the “detent projection 124” in Livesay discloses the recited “pair of side stabilizing surfaces” and provides as support an annotated version of Figures 2, 3 and 8, reproduced below. Pet. 56 (citing Ex. 1015, 3:66–67, Figs. 2, 3, 8).



Figures 2, 3, and 8 are cross-sectional views of the wear assembly Livesay discloses with blue arrows and shading identifying detent projection 124 in Figures 8 and 3. Ex. 1015, 2:14–18, 2:30–31. In addition to these figures, Petitioner contends Livesay’s description of detent projection 124 as being “preferably provided by a longitudinally extending rib 126 formed on and projecting inwardly from the side wall 32 of the socket” discloses a stabilizing surface that is “inclined relative to each other in different transverse directions so as to laterally converge inward toward a central location along the respective side wall.” Pet. 56–57 (citing Ex. 1015, 3:67–4:3, Figs. 2, 3, 8). Petitioner notes further that “Livesay discloses ‘[t]he clearance groove 100 in the adapter nose portion 70 is constructed to receive the detent projection 124 when the tip 12 is mounted onto the adapter 14.’” *Id.* (citing Ex. 1015, 4:31–34, Figs. 1, 4, 6).

In addition, Petitioner contends Livesay discloses that detent projection 124 is positioned to bear against complementary surfaces in respective side recesses in the base to resist both vertical and horizontal loads during excavating because Livesay describes the nose as having groove 100 to receive the detent projection and “it follows that under certain loads, the pair of side stabilizing surfaces of the projection will bear against complementary surfaces in respective side recesses in the base.” Pet. 58–59 (citing Ex. 1015, 4:31–34; Figs. 1, 4, 6; Ex. 1002 ¶ 108). Petitioner reasons that a skilled artisan “would understand Livesay to disclose side stabilizing surfaces being positioned to bear against complementary surfaces in respective side recesses in the base as claimed because this engagement between such surfaces limits the forces placed on the pin” and that “[b]ecause Livesay discloses that such side stabilizing surfaces bear against

such complementary surfaces, these surfaces, to at least some degree, ***resist both vertical and horizontal loads during excavating.***” *Id.* at 59 (citing Ex. 1015, 4:53–56; Ex. 1002 ¶ 108).

In the alternative, Petitioner contends that “it would have been obvious to a [skilled artisan] to modify the projection 124 and/or the groove 100 of Livesay such that surfaces of the projection 124 would be positioned to bear against complementary surfaces in the groove 100 to provide such resistance to limit the force on the pin 102.” Pet. 59–60 (citing Ex. 1015, 4:53–56; Ex. 1002 ¶ 108). Because Livesay teaches to rely solely on pin 102, which detect projection bears against, to securely retain the connection between the wear member and nose, Petitioner contends that a skilled artisan “would also understand that the stability afforded to the pin 102 by the projection 124 results from stability of the detent itself, and thus, configuring the projection 124 and/or groove 100 to increase the amount of contact therebetween to enhance such stability would have been obvious.” *Id.* at 60 (citing Ex. 1002 ¶ 108). This is because “it was well known in the art to use complementary recesses and projections on corresponding sides of wear members, bases, and other related portions of wear assemblies to provide resistance against loads applied from different directions.” *Id.* (citing Ex. 1002 ¶ 108).

Patent Owner argues that Petitioner fails to support sufficiently that Livesay discloses or suggests detent projection 124 is a recited “stabilizing surface” that is “positioned to bear against complementary surfaces in respective side recesses in the base to resist both vertical and horizontal loads during excavating.” Prelim. Resp. 51–56. In particular, Patent Owner asserts detent projection 124 in Livesay cannot be the recited stabilizing

surface because it only bears against pin 102, rather than against any surface in nose. *Id.* at 51 (citing Ex. 1015, 4:28–35; Ex. 2003 ¶ 102). Moreover, “clearance groove 100,” as the name suggests, provides space between detent projection 124 and the side wall of the nose so that the projection in the wear member “can clear the side 78 of Livesay during assembly.” *Id.* (citing Ex. 2003 ¶ 102). Furthermore, Livesay states expressly which parts in its wear assembly are the stabilizing surfaces bearing loads during normal operation, which Patent Owner notes does not include “detent projection 124” and “clearance grooves 100.” *Id.* at 53 (citing Ex. 1015, 4:10–18; Ex. 2003 ¶ 105).

Patent Owner argues there is likewise “no merit” to Petitioner’s contention that it would have been obvious to a skilled artisan to adapt one, or both, of “detent projection 124” and “clearance grooves 100” to have load bearing contact. Prelim. Resp. 53–54. Patent Owner asserts there is no evidence that a skilled artisan would have had a reasonable expectation of success in adapting the detent projection 124 and clearance groove 100 to act as both a locking mechanism and load bearing surfaces. *Id.* at 54–55 (citing Ex. 2003 ¶ 111). Patent Owner asserts that, in such an arrangement, “loads imposed on the wear member during excavation would be transferred from Livesay’s detent protrusion to the locking pin,” and the “vertical loads imposed would drive the pin of Livesay **out** of its wear member . . . creating the risk for the locking pin to be driven out of the wear assembly” and, ultimately, a premature failure. *Id.* at 55 (citing Ex. 1015, 1:21–33, 4:28–34, Fig. 8; Ex. 2003, ¶¶ 112–113). Finally, Patent Owner asserts that Petitioner prior fails to provide evidentiary support that it was well known to skilled

artisan at the time of the invention that detent projections could serve dual load bearing and locking functions. *Id.* at 56.

Having studied the cited portions of Livesay, along with the relevant portions of Dr. Stern’s declaration, we are not persuaded Petitioner has shown sufficiently Livesay discloses or suggests a rear end with side walls each including a pair of side stabilizing surfaces inclined relative to each other in different transverse directions so as to laterally converge inward toward a central location and positioned to bear against complementary surfaces in respective side recesses in the base to resist both vertical and horizontal loads during excavating.

The evidence from Livesay cited by Petitioner does not support sufficiently that “detent projection 124” in the wear member of Livesay is a stabilizing surface that bears against any surface of the nose to resist both vertical and horizontal loads during excavating. In particular, the fact that Livesay states that clearance groove 100 “is constructed to receive detent projection 124” is insufficient, even at this stage of the proceeding, to establish a load bearing contact exists between those parts. This is especially to true given the name Livesay gives groove 100, i.e. “clearance groove,” which itself suggests that the groove defines a space in the nose wherein there is no significant contact between the detent projection 124 and nose to give an unobstructed path for the wear member to travel when being mounted onto the adapter. *See* Ex. 1015, 4:31–34. We agree with Patent Owner that probative of the fact that detent projection 124 and clearance groove 100 are, in fact, not stabilizing surfaces is that Livesay identifies expressly those surfaces on the nose and wear member that are in “load

bearing contact” without mentioning either the detent projection or the clearance groove.

Additionally, we note that rib 126, which Livesay identifies to be the inwardly projecting portion of detent projection 124 (*see* Ex. 1015, 3:66–4:3, Figure 3), is described as having a “height to place its distal end 128 (FIG. 8) at a position inboard of the aligned outside surfaces 62 and outboard of the inside surfaces 60 of the first and second pin openings 56, 58.” *Id.* at 4:3–7. In other words, Livesay teaches that spacing between the inboard and outboard walls of pin openings 56, 58 is a defining condition for the height that detent projection 124 may protrude towards the nose. That height is also defined by the size of pin 102 that is disposed in pin opening 56, 58 because Livesay teaches that, when pin 102 is installed, detent projection 124 “is nested within the detent valley 120 of the pin 102.” *Id.* at 4:28–31. As a result, detent projection 124 may not protrude towards the nose more or less than is suitable to enable detent projection 124 to fit within the detent valley 120 of the pin 102. These teachings by Livesay are also probative of the fact that detent projection 124 and clearance groove 100 are, in fact, not stabilizing surfaces because Livesay does not even suggest the height of its distal end 128 should extend to and contact the surface of clearance groove 100 (and, of course, extending the distal end in this manner would be counter productive to the groove providing a path for the distal end to travel).

These teaching by Livesay regarding the height of the distal end of detent projection 124 also undermine Petitioner contention that it would have been obvious to modify detent projection 124 and clearance groove 100 to function both as part of the locking mechanism *and* as stabilizing surfaces

to resist both vertical and horizontal loads during excavating. On the one hand, to perform the locking function, (1) the clearance groove must provide a path for the detent projection to pass; (2) the inward projection of detent projection 124 is limited by the spacing between the inboard and outboard walls of pin openings 56, 58, as well as, the ability of the projection to be nested within the detent valley 120 of the pin 102. On the other hand, to perform as stabilizing surfaces, (1) the clearance groove must form recess surfaces in the base to bear against the detent projection when assembled; (2) the detent projection must protrude toward the base to bear sufficiently against the complementary recess surface in the base to resist both vertical and horizontal loads during excavating. These functions appear to directly contradict each other.

Notably, as Patent Owner correctly points out, Petitioner does not “does not articulate any ***actual modification*** of the clearance groove and detent protrusion of Livesay in order for these features to be load bearing.” Prelim. Resp. 54; *see* Pet. 56–66. Although Petitioner contends that the proposed modification would have been a known and predictable solution, none of the numerous prior art references Petitioner identifies to demonstrate what was known by skilled artisans in the art (*see* Pet. 60–65) disclose a detent projection/clearance groove that performs both a locking and stabilizing, contact-bearing function. *See generally* Ex. 1018; Ex. 1019; Ex. 1020; Ex. 1021; Ex. 1015. And Dr. Stern does not add anything substantive about how detent projection 124 and clearance groove 100 in Livesay could be actually modified successfully to perform both functions. *See* Ex. 1002 ¶¶ 107–108. Furthermore, the Petition does not address anywhere why a skilled artisan would have had a reasonable expectation of success

modifying the detent projection/clearance groove that Livesay discloses to perform as both a locking mechanism and a stabilizing, contact-bearing surface. *See generally* Pet. 44–72.

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 Livesay’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”). As discussed above, considering Livesay 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 Livesay in the manner proposed by Petitioner; questions Petitioner, and its expert, do not answer. Therefore, Petitioner’s obviousness rationale is deficient.

For the above reasons, we do not find Petitioner has carried its burden of showing Livesay discloses or suggests a wear member with a rear end having side walls each including a pair of side stabilizing surfaces inclined relative to each other in different transverse directions so as to laterally converge inward toward a central location along the respective side wall and positioned to bear against complementary surfaces in respective side recesses in the base to resist both vertical and horizontal loads during

excavating. 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 8–13 and 21–26 are unpatentable as being obvious in view of Livesay.

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 '662 patent are unpatentable.

IV. ORDER

Accordingly, it is:

ORDERED that the Petition is *denied* as to the challenged claims of the '662 patent; and

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

IPR2022-00187
Patent 10,273,662 B2

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