

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

AL-KO KOBER, LLC,
Petitioner,

v.

LIPPERT COMPONENTS MANUFACTURING, INC.,
Patent Owner.

Case IPR2014-00313
Patent 8,573,666 B2

Before MICHAEL J. FITZPATRICK, BARRY L. GROSSMAN, and
CHRISTOPHER L. CRUMBLEY, *Administrative Patent Judges*.

GROSSMAN, *Administrative Patent Judge*.

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

I. INTRODUCTION

AL-KO Kober, LLC (“Petitioner”) filed a Corrected Petition requesting an *inter partes* review of claims 1–9 of U.S. Patent No. 8,573,666 B2 (“the ’666 patent”). Paper 8 (“Pet.”). We instituted an *inter partes* review of claims 1–5, 8, and 9 of the ’666 patent under 35 U.S.C. § 103(a) for obviousness based on Kunz (Ex. 1001)¹ and Nebel (Ex. 1005)² and claims 6 and 7 under 35 U.S.C. § 103(a) for obviousness based on Kunz, Nebel, and Huffman (Ex. 1003)³. Decision on Institution of *Inter Partes* Review, Paper 9 (“Decision”). Lippert Components Manufacturing, Inc. (“Patent Owner”) filed a Patent Owner Response. Paper 15 (“PO Resp.”). Petitioner filed a Reply. Paper 21 (“Reply”).

An oral hearing was held on March 4, 2015. A transcript of the hearing is included in the record. Paper 26 (“Tr.”).

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

For the reasons that follow, we determine Petitioner has shown, by a preponderance of the evidence, that claims 1–9 are unpatentable.

A. Related Proceedings

The ’666 patent is involved in a pending district court proceeding, *Lippert Components Manufacturing, Inc. v. AL-KO Kober LLC*, No. 3:13-cv-697 (N.D. Ind.), filed July 11, 2013. Pet. 1; Paper 5.

¹ U.S. Patent No. 7,229,123 B2.

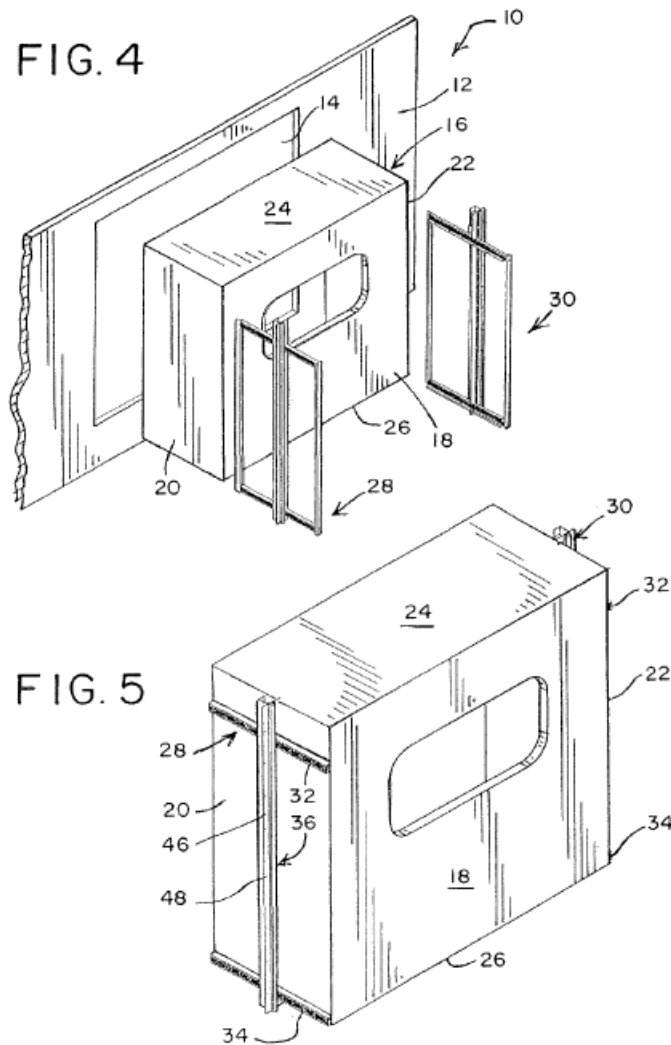
² U.S. Published Application US 2005/0230989 A1. Kunz and Nebel were cited in the prosecution of the ’666 patent. The Examiner, however, did not apply either Kunz or Nebel against the claims. Tr. 22, ll. 16–18.

³ U.S. Patent No. 6,948,754 B2

B. The '666 Patent

The invention claimed in the '666 patent relates, generally, to a slide-out or retractable room for mobile living quarters, such as a recreation vehicle. Ex. 1001, col. 1, ll. 19–20.

The general structure of the retractable room is shown in Figures 4 and 5 of the '666 patent, reproduced below.

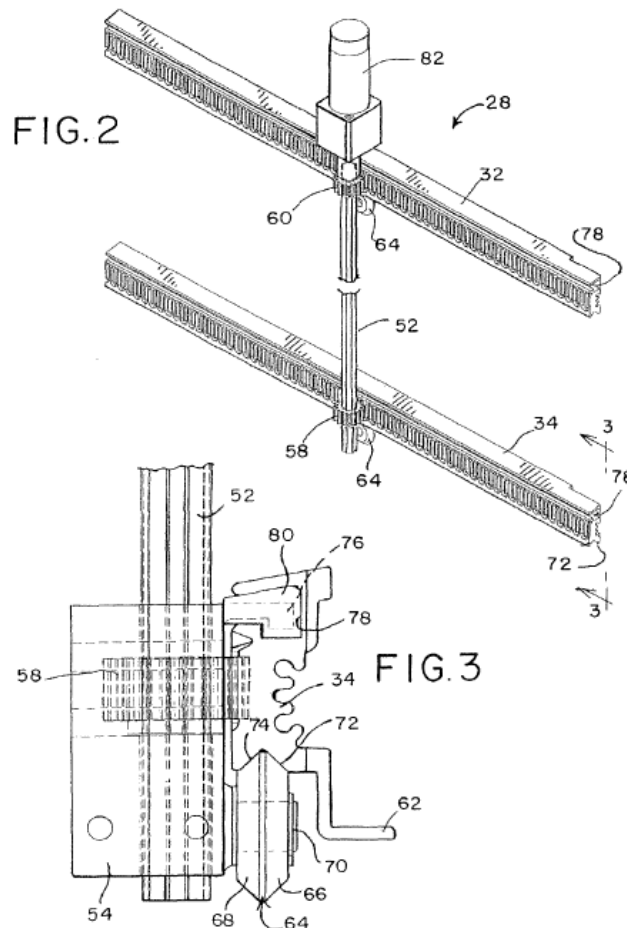


Figures 4 and 5 from the '666 patent.

Figures 4 and 5 show mobile living quarters, such as a recreational vehicle, indicated generally at 10, includes side wall 12. Side wall 12

defines aperture 14 through which slide-out room 16 extends and retracts. Ex. 1001, col. 3, ll. 26–31. Slide-out room 16 includes front wall 18, two side walls 20, 22 extending from front wall 18, ceiling 24, and floor 26. *Id.* at col. 3, ll. 31–33. Actuation assemblies 28, 30 are mounted on side walls 20, 22, respectively. *Id.* at col. 3, ll. 34–35. Each actuation assembly includes upper rack or engagement member 32, lower rack or engagement member 34, and cover 36 defining a column that covers the mechanism that drives rack 32, 34. *Id.* at col. 3, ll. 37–41.

Figures 2 and 3 of the '666 patent are reproduced below.



Figures 2 and 3 from the '666 patent show a drive member.

As shown in Figures 2 and 3, a drive member in the form of splined torque shaft 52 is defined by circumferentially spaced splines 56. Ex. 1001, col. 4, ll. 12–20. Splines 56 of shaft 52 are received in corresponding grooves in pinions 58, 60, which mesh with gear racks 32, 34, respectively. *Id.* at col. 4, ll. 20–23. Roller 64 has bearing faces 66, 68. *Id.* at col. 4, ll. 29–30. Racks 32, 34 have horizontally extending bearing surfaces defined by bearing faces 72, 74, shaped complementary to the cross-section of roller 64. *Id.* at col. 4, ll. 36–39. A retention member, in the form of hooked extension 76, extends into a longitudinally extending groove of rack 34. *Id.* at col. 4, ll. 39–41.

C. Illustrative Claim

Claim 1, the sole independent claim, is illustrative of the claimed invention:

1. An actuating assembly operable to extend and retract a retractable room between extended and retracted positions relative to an aperture, said actuating assembly comprising:
 - an engagement member mounted on a sidewall of said retractable room and movable with said retractable room between the extended and retracted positions;
 - a drive member, said drive member having engagement features engaging said engagement member to move said retractable room between the retracted and extended positions;
 - and
 - a retention member, said retention member connecting to said engagement member and maintaining engagement between said drive member and said engagement member regardless of changes in spacing between said retractable room and said aperture.

II. ANALYSIS

A. Claim Construction

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *In re Cuozzo Speed Techs. LLC*, 778 F.3d 1271, 1281–82 (Fed. Cir. 2015) (“Congress implicitly adopted the broadest reasonable interpretation standard in enacting the AIA,” and “the standard was properly adopted by PTO regulation.”). Claim terms are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

Petitioner does not propose a specific construction for the claims.

Patent Owner proposes that the claims be given their plain and ordinary meaning. Yet, for “clarification” and “avoidance of doubt,” Patent Owner asserts that the phrase “engagement member mounted on a sidewall” “requires that the component providing for engagement must, after mounting, be disposed on a sidewall of the slide out room rather than below the floor of the slide out room.” PO Resp. 13–14. Patent Owner cites no evidence to support this claim interpretation. We determine that, under the broadest reasonable interpretation, and giving the words their plain and ordinary meaning consistent with the Specification, the phrase “engagement

member mounted on a sidewall” means that the engagement member is fixed securely to a sidewall.⁴

B. Asserted Grounds of Unpatentability

1. Obviousness Based on Kunz and Nebel

Section 103(a) forbids issuance of a patent when “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” 35 U.S.C. § 103(a).⁵ In *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966), the Court set out a framework for applying the statutory language of § 103:

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined.

Id. at 17–18. “While the sequence of these questions might be reordered in any particular case, the factors continue to define the inquiry that controls.” *KSR Int’l. v. Teleflex Inc.*, 550 U.S. 398, 407 (2007).

⁴ “Mounted” is defined as “[t]o fix securely to a support.” *American Heritage® Dictionary of the English Language, Fifth Edition* (2011). Retrieved May 25, 2015, from <http://www.thefreedictionary.com/mounted>. See also *Chef America, Inc. v. Lamb-Weston, Inc.*, 358 F. 3d 1371, 1373 (Fed. Cir. 2004) (“These are ordinary, simple English words whose meaning is clear and unquestionable. There is no indication that their use in this particular conjunction changes their meaning. They mean exactly what they say.”).

⁵ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 296–07 (2011), took effect on September 16, 2012. Because the application for the patent at issue in this proceeding has an effective filing date before that date, we refer to the pre-AIA versions of § 103.

The Supreme Court made clear that we apply “an expansive and flexible approach” to the question of obviousness. *Id.* at 415. Whether a patent claiming the combination of prior art elements would have been obvious is determined by whether the improvement is more than the predictable use of prior art elements according to their established functions. *Id.* at 417. To reach this conclusion, however, it is not enough to show merely that the prior art includes separate references covering each separate limitation in a challenged claim. *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011). Rather, obviousness requires the additional showing that a person of ordinary skill at the time of the invention would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention. *Id.* “A reference must be considered for everything it teaches by way of technology and is not limited to the particular invention it is describing and attempting to protect.” *EWP Corp. v. Reliance Universal Inc.*, 755 F.2d 898, 907 (Fed. Cir. 1985).

Petitioner has the burden of proof to establish unpatentability by a preponderance of the evidence. 35 U.S.C. § 316(e).

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

a. Claim 1

Claim 1 requires an “engagement member” mounted on a sidewall of a retractable room and moveable with the retractable room. The Specification describes each of racks 32, 34 as an “engagement member.” Ex. 1001, col. 3, ll. 38–41.

Petitioner asserts that “slide plate 50 and gear rack 52 of the Kunz slide-out actuating system corresponds to the recited engagement member.” Pet. 28; *see also* Pet. 34 (“engagement member (slide plate 50 and gear rack 52)).”⁶ Slide plate 50 is bolted to the bottom or floor of the slide-out room in Kunz. Ex. 1002, col. 3, ll. 46-48. It is not mounted on a sidewall as required by claim 1. Gear rack 52 is welded or otherwise fastened to the bottom of the slide plate. *Id.* at col. 3, ll. 48–50. We find that Kunz discloses an “engagement member” mounted on the floor, not a side wall, of a retractable room.

The primary issue between the parties is whether it would have been obvious, based on the disclosure in Nebel, to reposition the “engagement member” of Kunz from the floor to a sidewall. Before addressing this issue, however, we discuss briefly the other elements of claim 1.

Claim 1 also requires a “drive member” engaging the “engagement member” to move the retractable room between the extended and retracted positions. The Specification describes the “drive member” as torque shaft 52 with splines 56 received in grooves of pinions 58, 60. Ex. 1001, col. 4, ll. 12–23.

Petitioner asserts that pinion 60 in Kunz corresponds to the required “drive member.” Pet. 21. Pinion 60 engages gear rack 52 to move the slide-out room between the extended and retracted positions. Ex. 1002, Fig 10;

⁶ Petitioner also refers, in some places in the Petition, to only “rack 52” as the “engagement member.” *E.g.*, Pet. 21, 34. Based on the totality of Petitioner’s assertions, however, we understand Petitioner’s position to be that slide plate 50 and gear rack 52 of Kunz each are components of the recited engagement member.

see id. at col. 3, ll. 44–50, col. 4, ll. 1–6. We find that Kunz discloses a “drive member,” as claimed.

Claim 1 further requires a “retention member” connecting to the engagement member to maintain engagement between the “drive member” and the “engagement member.” The Specification describes the “retention member” as hooked extension 76 extending into longitudinally extending groove 78 of rack 34. Ex. 1001, col. 4, ll. 39–41. As described in the Specification, the “retention member” maintains engagement between the gear rack and the pinion. *Id.* at col. 4, ll. 41–46.

Petitioner asserts “slide block 42 of Kunz . . . meets the retention member limitation of claim 1.” Pet. 21; *see also* Pet. 34 (“The slide block 42 of Kunz corresponds to the claimed retention member.”). Slide block 42 of Kunz is bolted to upper flange 40 of base 34. Ex. 1002, col. 3, ll. 26–29. Slide block 42 has dovetail portions 46 that are received in close sliding contact with track 48. *Id.* at col. 3, ll. 29–30. This provides a form fit between block 42 and track 48 so that track 48 is captured relative to slide block 42 laterally, vertically, and in all directions perpendicular to the direction of extension and retraction. *Id.* at col. 3, ll. 35–38. Track 48 is bolted, or otherwise fastened, to slide plate 50. *Id.*, col. 3, ll. 44–45. The relationship among slide block 42, track 48, base 34 and slide plate 50 is shown in Figure 10 of Kunz, reproduced below.

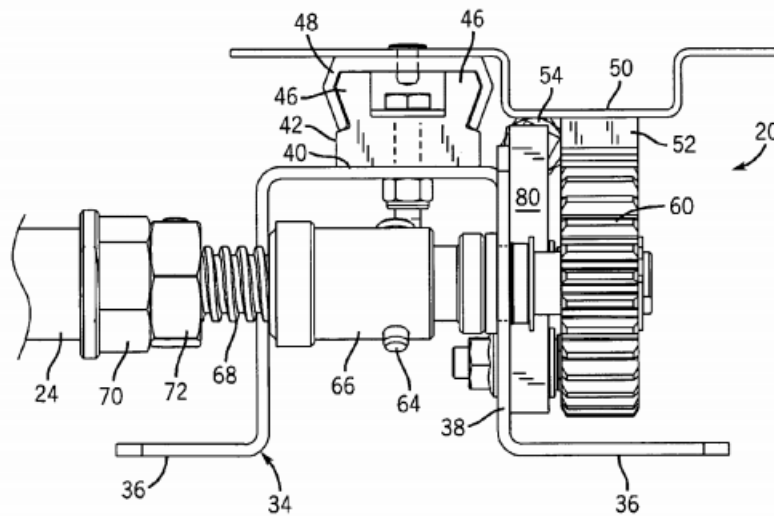


FIG. 10

Figure 10 from Kunz, U.S. Patent 7,229,123 (Ex. 1002).

As shown in Figure 10 of Kunz, the connection between slide block 42 and track 48 serves to restrain movement of base member 34 relative to slide plate 50. Track 48 establishes a connection between the asserted “retention member” (slide block 42) and the asserted “engagement member” (slide plate 50 and gear rack 52) to maintain engagement between the “drive member” (pinion 60) and the “engagement member” (slide plate 50 and gear rack 52). We find that Kunz discloses a “retention member” as required by claim 1.

We now turn to an analysis of Nebel.

Nebel discloses a slide-out mechanism for controllably moving a slide-out section of a recreational vehicle. Ex. 1005 ¶¶ 1, 2. As shown in annotated Figure 4, below, the mechanism includes upper track 210 and lower track 220 both mounted to side wall 120 of the slide-out section. *Id.* ¶ 29. Tracks 210 and 220 correspond to engagement members 32 and 34 in the '666 patent. Independent claim 1, and the claims dependent therefrom,

require only a single engagement member (“an engagement member”), and thus, the claims do not require both engagement member 32 *and* engagement member 34.

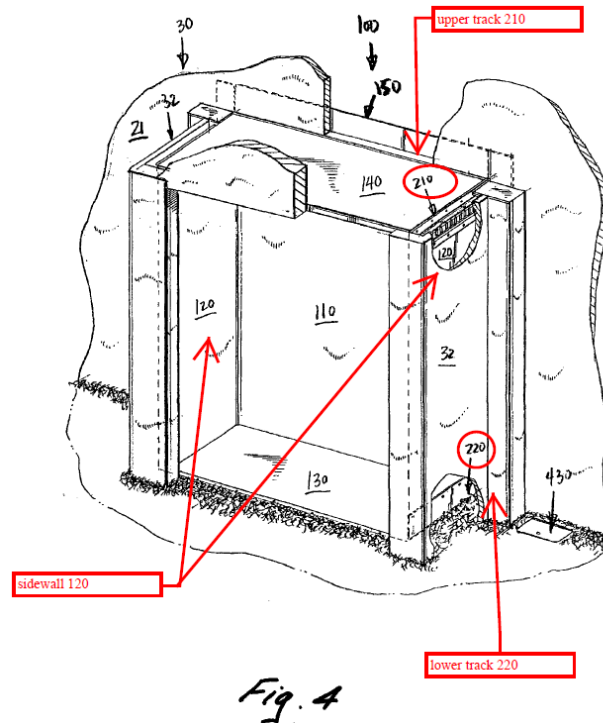


Figure 4 of Nebel (Ex. 1005), annotated.

Patent Owner concedes that upper track 210 of Nebel is mounted to the side wall 120. PO Resp. 13 (“In actuality, only the upper track 210 is mounted to the side wall 120.”). According to Patent Owner, however, the lower track 220 is mounted to the “***underside*** of a floor of the slide-out section.” *Id.* (citing Ex. 1005 ¶ 29) (emphasis added). We disagree, as we explain below. Whether one or both tracks in Nebel are mounted to the side wall, however, is not significant because the claims require only a single engagement member or track mounted to a side wall. Thus, even if Nebel is limited to one engagement member on the side wall and one engagement under the floor, it still supports Petitioner’s position.

As shown in annotated Figure 2 from Nebel, below, upper track 210 is fixed to sidewall 120.

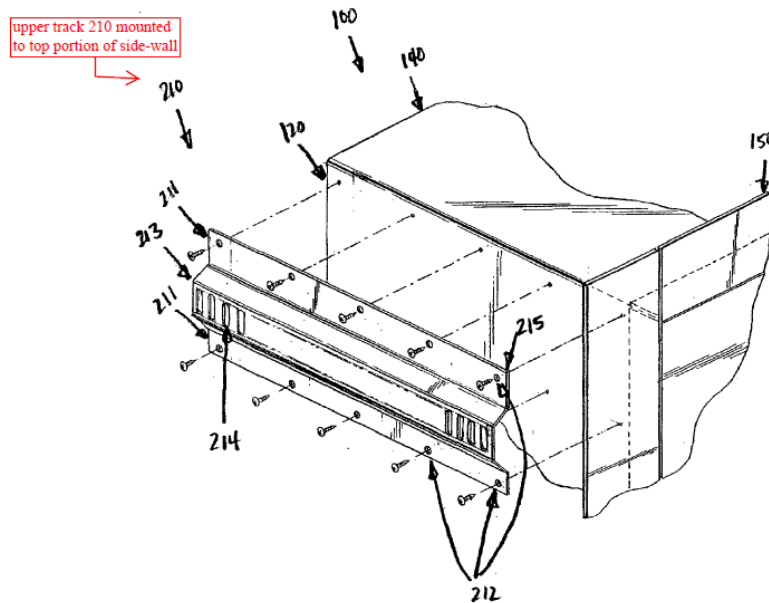


Fig. 2

Figure 2 from Nebel (Ex. 1005), annotated.

As stated in Nebel, upper track 210 is mounted along each of the top portions of side walls 120 of slide-out section 100. Ex. 1005 ¶ 29. Nebel illustrates the position of lower track 220 in Figure 3, reproduced below and annotated to identify lower track 220.

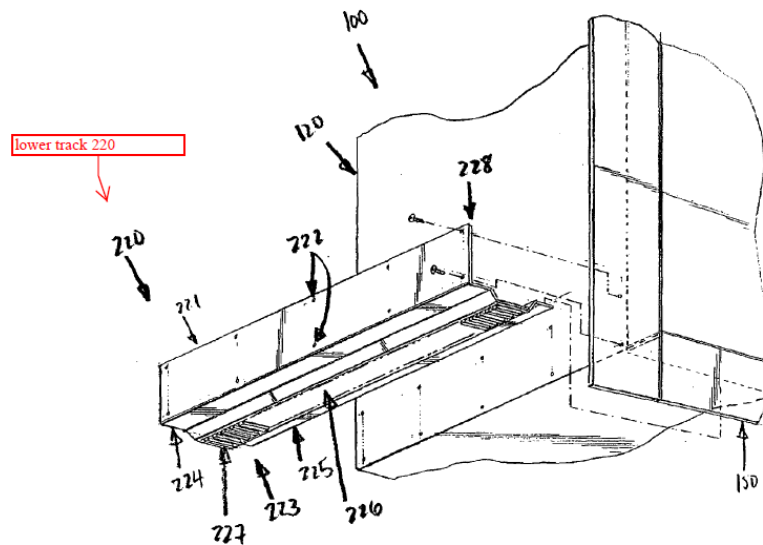


Fig. 3

Figure 3 from Nebel (Ex. 1005), annotated.

Nebel states that in addition to lower track 220 being mounted to an *underside of a floor* of the slide-out section 100, lower track 220 also is *mounted along each of the lower portions of the side walls 120* of the slide-out section 100 where the side walls intersect the floor. Ex. 1005 ¶ 29 (emphases added). Nebel also states that lower track 220 is formed roughly in an L-shape and also can be thought of as a bracket member. *Id.* ¶ 33. L-shaped lower track 220 includes vertical wall or surface 221 with mounting holes 222 *for fastening lower track 220 to the bottom portions of side walls 120 of the slide-out section 100.* *Id.* (emphasis added). Lower track 220 is fixed securely to side wall 120 by means of mounting holes 222, and, thus, “mounted on a side wall” within the meaning of the claim.

Petitioner asserts “it would have been obvious to a person of ordinary skill in the art . . . to move *one or both* of the Kunz slide units 18, 20

including slide plate 50 and gear rack 52 (engagement member) to a side wall of the slide-out room.” Pet. 21–22 (emphasis added). The rationale provided for the proposed modification is that it is a “simple rotation” of the Kunz actuating assembly that yields predictable results (Pet. 22 (citing Ex. 1006 ¶ 24)) and provides improved stability, as suggested by Nebel (*id.* at 23–24).

Petitioner’s Declarant, Dr. Frank Fronczak (Ex. 1006), states this same opinion: it “would have been obvious to move *one or both* of the Kunz slide units 18, 20 including the slide plate 50 and gear rack 52 (engagement member) to a sidewall of the slide-out room.” Ex. 1006 ¶ 24 (emphasis added). In Dr. Fronczak’s opinion, the proposed modification involves “little more than rotating the Kunz actuating assembly by 90 degrees.” *Id.* Dr. Fronczak concludes that such modification involves “nothing more than the application of well-known techniques within the common sense of a person skilled in the art and would yield a predictable result.” *Id.*

Petitioner also asserts that Kunz teaches a system that pushes the slide-out section only at the bottom, precisely the type of system that, according to Nebel, is improved by arranging a gear assembly on the side wall near the top of the slide-out section. Reply 4–5. According to Petitioner, “Nebel’s statements about improved support and stability are not made in the abstract, rather they are made in comparison to systems that push *only* at the bottom like Kunz.” *Id.* at 5 (emphasis added).

Nebel states that mounting the tracks on the side wall provides greater support and stability over systems where the tracks, or gear racks, are

mounted at the bottom, or floor, of the slide-out section. Ex. 1005 ¶ 5. Nebel also states that this arrangement prevents misalignment. *Id.*

b. Patent Owner's Position

Patent Owner argues that Petitioner's "entire obviousness challenge rests on the hindsight argument that it would have been obvious to move the Kunz slide units to the side wall of the slide out room." PO Resp. 2, *see also id.* at 27 (Petitioner "argues, with the aid of the '666 Patent, that it would have been obvious to modify Kunz in view of Nebel."). It is Patent Owner's position that Petitioner fails to provide a "plausible reason why a person of ordinary skill viewing the teaching of Kunz would ever move the Kunz slide units to a side wall." *Id.* In particular, Patent Owner argues that, because Kunz has addressed stability, a skilled person would not have used Nebel's stability features in Kunz. As discussed above, however, Nebel discloses that using a track on the side wall provides improved stability and performance over a system that uses only tracks under the floor. Ex. 1005 ¶ 5. Therefore, we conclude that, even if the Kunz system provides improved stability, a person of ordinary skill in the art would have had reason to apply the disclosure of Nebel to improve stability further.

According to Patent Owner, Petitioner has not addressed significant challenges of the proposed combination resulting from "pigeon toeing," "thick walls," and synchronization. PO Resp. 3. Patent Owner argues that the references "teach away" from the proposed modification because these challenges would discourage a person of ordinary skill from making them. *Id.*

A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the

path set out in the reference, or would be led in a direction divergent from the path that was taken by the claims. *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994). The alleged complexities — pigeon toeing (PO Resp. 32), substantial modification of the side wall (*id.* at 38)⁷, and synchronization (*id.* at 42) — are not discussed in the '666 patent as significant issues. Pigeon toeing is not mentioned in the '666 patent. Moreover, Dr. Massoud S. Tavakoli, Patent Owner's Declarant, acknowledged that "pigeon toeing is common in almost any slide out room." Ex. 2001 ¶ 64 (citing Ex. 2003, 196)). Thus, it is the kind of common engineering challenge that a person of ordinary skill and creativity confronts regularly in the technology of slide out rooms.

Patent Owner's alleged complexities are based on physically combining the references. The obviousness inquiry does not ask "whether the references could be physically combined but whether the claimed inventions are rendered obvious by the teachings of the prior art as a whole." *In re Etter*, 756 F.2d 852, 859 (Fed. Cir. 1985) (en banc); *see also In re Keller*, 642 F.2d 413, 425 (CCPA 1981) ("The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art."). Accordingly, Patent Owner's teaching away arguments are not persuasive.

⁷ When asked if the alleged sidewall complexity resulting from the proposed modification was excluded from the scope of the claims, counsel for Patent Owner stated "[t]here is no exclusion in the claim from that." Tr. 38, ll. 2–7.

c. Level of Ordinary Skill

Petitioner relies on the Declaration of Dr. Fronczak (Ex. 1006) to establish the level of ordinary skill in the relevant technology. Dr. Fronczak states that he “has been informed that the level of skill in the art is evidenced by the prior art references.” Ex. 1006 ¶ 14. Dr. Fronczak opines that the prior art “demonstrates” that a person of ordinary skill in the art “would have had a B.S. degree in Mechanical Engineering or a closely related field and at least three years of experience in mechanical design, or equivalent.” *Id.*

Patent Owner asserts a slightly different level of ordinary skill. It is Patent Owner’s position that a person of ordinary skill has at least two years of technical training in mechanical engineering or design, and at least two years of experience in mechanical engineering or design, or equivalent. PO Resp. 14 (citing Ex. 2001 ¶ 21).

Essentially, the difference in the parties’ positions is whether a bachelor of science degree is required. We determine that the asserted prior art reflects the level of skill, and patentability does not depend on whether Petitioner’s or Patent Owner’s asserted definition is used. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (specific findings on the level of skill in the art is not error where the prior art itself reflects an appropriate level and a need for testimony is not shown). Moreover, the differences in the parties’ positions are insignificant in resolving the issue of the patentability of the challenged claims.

Based on the analysis above, we conclude that the preponderance of the evidence establishes that invention claimed in claim 1 would have been obvious based on Kunz and Nebel. A person of ordinary skill in the art would have had reason to modify Kunz using the teachings of Nebel, and

such a modification would have been within the level of ordinary skill in the art.

d. Claims 2–5, 8, and 9

Claims 2–5, 8, and 9 depend, directly or indirectly, from claim 1, the sole independent claim.

Claim 2 requires the retention member (hooked extension 76 shown in Figures 2 and 7) to project from a bearing block and maintain engagement of the drive member with the engagement member. Petitioner asserts that base member 34 of Kunz corresponds to the claimed “bearing block” because it accommodates the bearings and supports shaft 22, 24. Pet. 35. Petitioner also asserts that engagement of slide block 42 in track 48 in the Kunz system links pinion 60 (drive member) to rack 52 (engagement member) so as to restrain movement of pinion 60 (drive member) away from rack 52 (engagement member). *Id.*

Claim 3 requires the engagement member to include a plurality of slots and the drive member to include engagement features to mesh with the plurality of slots. Petitioner asserts that gear rack 52 in Kunz includes a plurality of teeth that define a plurality of slots with each slot being arranged between an adjacent pair of teeth. Pet. 35. Petitioner also asserts that teeth of pinion 60 in Kunz (drive member) mesh with the teeth, and the slots between the teeth, of the corresponding rack 52 (engagement member). *Id.* at 36.

Claim 4 requires the retention member to extend over the engagement member. Petitioner asserts that slide block 42 (retention member) of Kunz includes dovetail portions 46, which extend over part of track 48, gear rack

52, and part of slide plate 50, all of which are part of the engagement member of Kunz. Pet. 36.

Claim 5 requires the retention member to include low friction plastic. Petitioner asserts that Kunz discloses that slide block 42 should be made of a highly lubricous material such as ultra-high molecular weight polyethylene. Pet. 36.

Claim 8 requires the drive member to include a pinion rotatable by a motor. Petitioner asserts that pinions 60 (drive members) of Kunz are rotatable by drive shafts 22, 24, which are connected through a gear box to a motor drive unit 26. Pet. 37.

Claim 9 requires the engagement member to include a rack having a plurality of slots for meshing with the pinion. Petitioner asserts that gear rack 52 of Kunz includes a plurality of teeth that define a plurality of slots with each slot between an adjacent pair of teeth. Pet. 37. Petitioner also asserts that each pinion 60 of Kunz includes gear teeth that mesh with the teeth, and the slots between the teeth, of the corresponding gear rack 52. *Id.*

Patent Owner states that “[b]ecause claims 2–9 depend from claim 1 and add further limitations, they are not obvious either.” PO Resp. 4. Patent Owner does not address further the merits of claims 2–5, 8, and 9 in its Response.

Based on the analysis above, the preponderance of the evidence establishes that claims 2–5, 8, and 9 would have been obvious based on Kunz and Nebel.

2. Claims 6 and 7 as Obvious Based on Kunz, Nebel, and Huffman

Claim 6, dependent from claim 1, requires that the claimed invention further include at least one roller to support “said compartment.” There is

no antecedent recitation of “compartment” in claim 1. The term “said compartment” appears to refer to the “retractable room” in claim 1, and we proceed on that basis. Claim 7, dependent from claim 6, further requires the roller to engage the engagement member.

As discussed above, the basic elements recited in claim 1 are an engagement member (racks 32, 34), a drive member (torque shaft 52), and a retention member (hooked extension 76). Claim 6 adds an additional element by “further including” at least one roller. The stated function of the roller is to support the retractable room.

As described in the Specification, rollers engage corresponding bearing surfaces defined on the racks to support the slide-out room as it extends and retracts and to assure that the pinions remain meshed with the racks. Ex. 1001, col. 2, ll. 45–48.

As shown in Figures 2 and 3 of the ’666 patent, roller 64, has a substantially V-shaped cross section to define bearing faces 66, 68. *Id.* at col. 4, ll. 29–30. The roller is shaped to maintain the relative positions of rack 34 to roller 64 and to permit the slide-out room to move relative to the unit. *Id.* at col. 4, ll. 33–35. Roller 64 and rack 34, along with other elements, maintain engagement of rack 34 with pinion 58. *Id.* at col. 4, ll. 45–46.

As shown in Figures 3–5 of Huffman, Huffman discloses an operating mechanism for selectively extending and retracting a slide-out section of a vehicle. Ex. 1003, col. 2, ll. 8–10. The operating mechanism includes support member 26 fixed to vehicle body 10. *Id.* at col. 3, ll. 27–36. Two pairs of rollers 28 are mounted to support member 26 and support rail member 30. *Id.* Toothed rack 32 is fixed to rail member 30. *Id.* Rotatably

driven pinion 34 engages rack 32 to drive rail member 30 and, thus, the slide-out section. *Id.* Rail member 30 is driven by pinion 34 that engages rack 32 fixed to the rail member 30. *Id.* at col. 4, ll. 59–60. Driven pinion 34 has radially outwardly extending teeth 76 that engage rack teeth 72 to drive rail member 30 between the extended position and the retracted position. *Id.* at col. 5, ll. 6–9.

Petitioner asserts that one skilled in the art would understand that the roller and rail system of Huffman could be used in the place of, *or in combination with*, slide block 42 and track 48 of Kunz because both arrangements restrain movement of the pinion away from the rack. Pet. 38. The rationale provided for the proposed modification is that “such a combination would simply re-arrange old elements, i.e. the roller and rail system of Huffman for the slide block 42 and track 48 of Kunz, with each performing the same function it had been known to perform.” *Id.* (citing Ex. 1006 ¶¶ 41, 43). Dr. Fronczak restates Petitioner’s position. Ex. 1006 ¶ 41. He also opines that “one skilled in the art would understand that the roller and rail system of Huffman could be used in the place of, *or in combination with*, the slide block 42 and track 48 of Kunz because both arrangements restrain movement of the pinion away from the rack.” *Id.* ¶ 43. Because claim 6 adds an additional element by “further including” at least one roller, we focus on Huffman in combination with Kunz.

Petitioner asserted that the reason a person of ordinary skill would use both the slide block (retention member) of Kunz and the roller of Huffman is to obtain the “additional advantage of reduction of binding.” Tr. 17, ll. 8–18. Dr. Fronczak testified at his deposition that:

Q. Where does the roller go with respect to the Kunz in that hypothetical?

A. The roller would go with the Kunz on the side wall.

Q. Does the roller replace the slide block?

A. No, it would -- there's different -- once again, as we talked about earlier, there's more than one way -- more than one way that this -- that a design can develop. And so the roller cannot just be a swapped out for the dovetailed block. What a roller -- could be done, you could have the two rollers that are crossed or you could put a roller positioned underneath the rail or an extension from the rail of the Kunz device. This is -- I said it's a rearrangement of known devices.

Ex. 2004, 142, ll. 1–17.⁸

Patent Owner argues that Petitioner “improperly adds Huffman to its proposed combination without articulating any reason for doing so and based entirely on hindsight.” PO Resp. 50. Patent Owner asserts that Petitioner’s asserted motivation for the combination — to “restrain movement of the pinion away from the rack” — would not be applicable. *Id.* at 51(citing Ex. 2001 ¶ 101.) Dr. Tavakoli opines in his Declaration (Ex. 2001) that a person of ordinary skill would have no reason to add the Huffman rollers because the Kunz slide units would already restrain movement of the pinion away from the rack for the same purpose.

Ex. 2001 ¶ 101.

In weighing the evidence, we conclude that combining the Huffman rollers with the Kunz slide is merely adding a well-known element, a roller, to improve performance (restraining movement of the pinion away from the rack) (Pet. 38) and obtaining the known benefits of a roller to facilitate

⁸ Citations are to pages of the deposition transcript.

slideable movement and support, as suggested by Huffman (Ex. 1003, col. 3, ll. 28–32. We determine that this is well within the skill and creativity of a person of ordinary skill. Accordingly, we are persuaded that claims 6 and 7 would have been obvious based on Kunz, Nebel, and Huffman.

III. CONCLUSION

Based on the evidence and arguments, Petitioner has demonstrated, by a preponderance of the evidence, that claims 1–5, 8, and 9 are unpatentable under 35 U.S.C. § 103(a) based on Kunz and Nebel, and that claims 6 and 7 are unpatentable under 35 U.S.C. § 103(a) for obviousness over Kunz, Nebel, and Huffman.

IV. ORDER

In consideration of the foregoing, it is hereby

ORDERED that, based on Petitioner’s showing by a preponderance of the evidence, claims 1–9 are unpatentable.

This is a final decision. Parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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