

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MARKER VOLKL USA, INC.,
Petitioner,

v.

KNEEBINDING, INC.,
Patent Owner.

Case IPR2017-01265
Patent 8,955,867 B2

Before MICHAEL W. KIM, PATRICK R. SCANLON, and
MATTHEW S. MEYERS, *Administrative Patent Judges*.

MEYERS, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. *Background*

Marker Volkl USA, Inc. (“Petitioner”) filed a Petition requesting *inter partes* review of claims 1 and 4–9 of U.S. Patent No. 8,955,867 B2 (Ex. 1001, “the ’867 Patent”). Paper 1 (“Pet.”). Kneebinding, Inc. (“Patent Owner”) filed their Mandatory Notices in response to the Petition for *Inter Partes* Review (Paper 5), but did not file an optional Preliminary Response. See 37 C.F.R. § 42.107 (“The patent owner *may* file a preliminary response to the petition.”) (emphasis added).

On October 18, 2017, we instituted an *inter partes* review of claims 1 and 4–9 on all grounds of unpatentability set forth in the Petition. Paper 10 (“Dec.”). After institution of trial, Patent Owner filed a Patent Owner Response (Paper 18, “PO Resp.”) and Petitioner filed a Reply (Paper 22, “Pet. Reply”). Petitioner relies on the Declaration of Jasper Shealy (Ex. 1025). Patent Owner relies on the Declaration of David J. Dodge (Ex. 2001). An oral hearing was held on June 25, 2018. Paper 30 (“Tr.”).

In this Final Written Decision, issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73, after reviewing all relevant evidence and assertions, we determine that Petitioner has met its burden of showing, by a preponderance of the evidence, that claims 1 and 4–9 of the ’867 patent are unpatentable.

B. *Related Proceedings*

Petitioner and Patent Owner identify that the ’867 Patent is involved in *Kneebinding, Inc. v. Marker Volkl USA, Inc.*, Case No. 2:15-cv-121-wks (D. Vt.). Pet. 3; Paper 5, 2. Petitioner and Patent Owner also identify several patents and patent applications related to the ’867 Patent. Pet. 3; Paper 5, 2.

C. The '867 Patent

The '867 Patent relates generally “to alpine ski bindings and, in particular, to multi-directional release alpine ski binding heel units that release in the vertical and lateral directions.” Ex. 1001, 1:18–20. Figure 1 illustrates a side view of the alpine ski binding heel unit of the '867 Patent, and is set forth below.

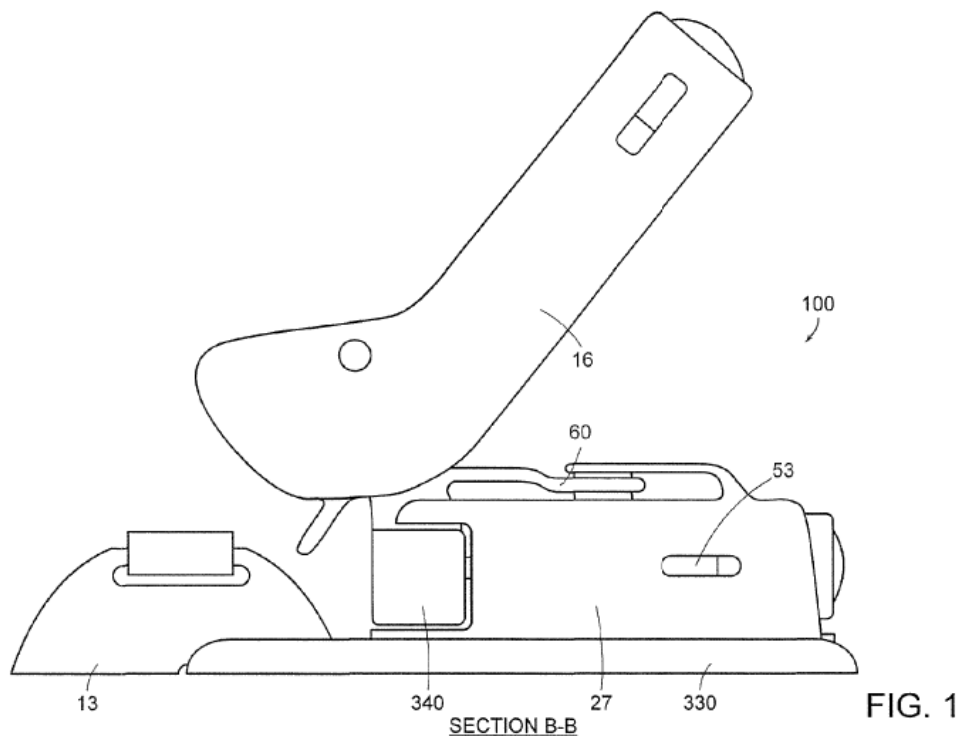


Figure 1 is a side view of the alpine ski binding heel unit.

As shown above in Figure 1, ski binding heel unit 100 includes upper heel housing 16, lower heel housing 27, heel pad 13, lateral release 340, interface support 330, and vector decoupler mechanism 60. Ex. 1001, 1:53–55. Figure 2 is a more detailed side view of the ski binding heel unit 100 of the '867 Patent and is set forth below.

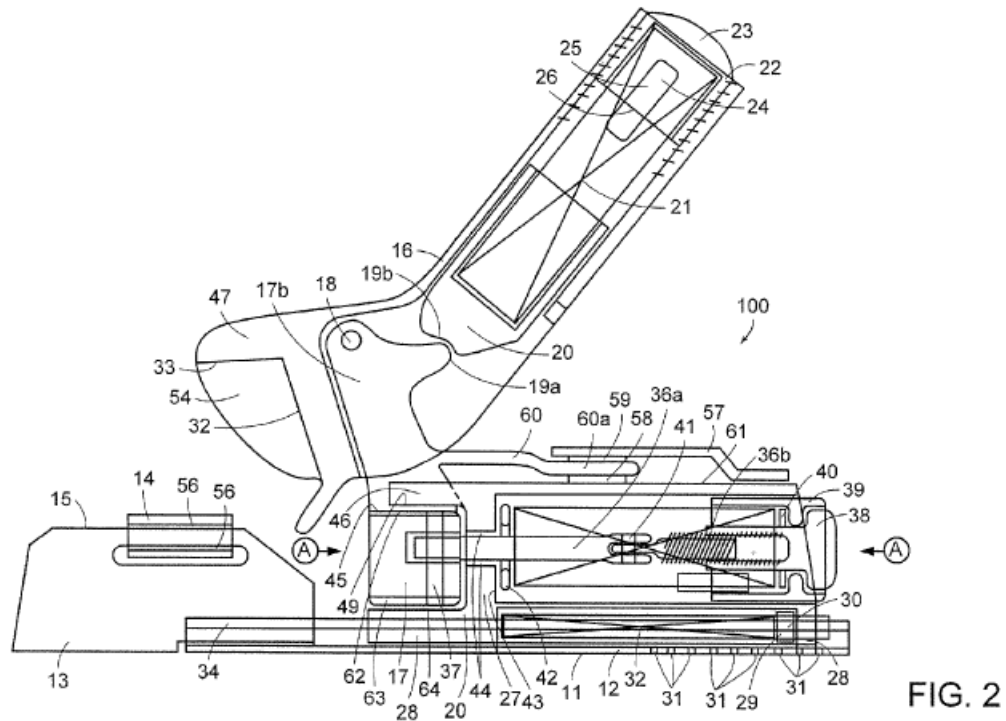


Figure 2 is a more detailed side view of the alpine ski binding heel unit 100.

As shown above, ski binding heel unit 100 further depicts that upper heel housing 16 includes pivot rod 18, cam surfaces 19a and 19b, stem section 17b, lateral release cam assembly 17, vertical release cam follower 20, vertical release spring 21, threaded cap 22, window 24, polymer piece 25, surface 26, region 33, and heel cup assembly 47. Ex. 1001, 1:59–64.

D. Illustrative Claim

Of instituted claims 1 and 4–9, independent claim 1 is the only independent claim. Independent claim 1 is illustrative, and is reproduced below:

1. A vector decoupling assembly for separating and isolating two or more force vectors applied to a safety binding securing a heel portion of a ski boot to a ski, comprising:
 - a lower heel assembly attached to the ski;

an upper heel assembly coupled to the lower heel assembly and having a lateral release assembly for applying lateral securing pressure to the ski boot, the upper heel assembly comprising an upper heel housing that is configured to compress the heel portion of the ski boot downward;

a linkage element fixedly attached to the lateral release assembly;

wherein the linkage element, a first surface and a second surface cooperate to limit motion of the lateral release assembly to within a predetermined region within a plane defined by the longitudinal and horizontal axes of the ski.

E. Asserted Grounds of Unpatentability

A trial was instituted for claims 1 and 4–9 on all the asserted grounds, as follows (Dec. 30–31):

Reference(s)	Basis	Challenged Claims
DE '298 ¹	§ 102(b)	1 and 4–9
Boussemart ² and DE '298	§ 103(a)	1 and 4–9

II. ANALYSIS

A. Claim Construction

In an *inter partes* review, a claim in an unexpired patent shall be given its broadest reasonable construction in light of the specification of the patent in which it appears. 37 C.F.R. § 42.100(b); *see also* *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2142 (2016) (affirming that USPTO has

¹ German Published Patent Application No. 23 64 298, published June 26, 1975 (Ex. 1008; “DE '298”). Unless indicated otherwise, all subsequent citations to DE '298 in this decision refer to its English language translation, which is Exhibit 1004.

² U.S. Patent No. 4,553,772, issued Nov. 19, 1985 (Ex. 1005; “Boussemart”).

statutory authority to construe claims according to 37 C.F.R. § 42.100(b)). Under the broadest reasonable construction standard, claim terms are generally given their ordinary and customary meaning, as would have been 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). Any special definition for a claim term must be set forth in the specification with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994). We must be careful not to read a particular embodiment appearing in the written description into the claim if the claim language is broader than the embodiment. *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993).

Claim 1 recites “lateral release assembly” and “upper heel housing.” Patent Owner does not propose any specific interpretations for those terms *per se*. Instead, Patent Owner argues the “lateral release assembly” and “upper heel housing” recited by claim 1 “are separate functional parts of the upper heel assembly” “that separate and isolate lateral and vertical release forces,” respectively. PO Resp. 12, 14, 36 (citing *Becton, Dickinson and Co. v. Tyco Healthcare Gr., LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010) (quoting *Gaus v. Conair Corp.*, 363 F.3d 1284, 1288 (Fed.Cir.2004))). More specifically, Patent Owner takes the position

both the vertical and lateral releasing structures [of claim 1] include separate elements that are prevented from contributing to the releasing function of the other, and includes structures that are specifically designed to avoid contribution of vertical forces to the lateral release assembly, and lateral forces to the vertical release components.

Id. at 14.³ Petitioner disagrees with Patent Owner’s assertions, arguing that the ’867 patent’s claim language and Specification establish that the two elements “are inextricably linked.” Pet. Reply 1–9. Although we are not in complete agreement with either parties’ construction, we, nevertheless, agree generally with Petitioner, for the reasons set forth below, that the “lateral release assembly” and “upper heel housing” recited by claim 1 should not be construed as being separate functional parts of the upper heel assembly that separate and isolate lateral and vertical release forces, respectively.

We begin our analysis with the express claim language. Specifically, claim 1 recites in part “a lower heel assembly attached to the ski” and “an upper heel assembly coupled to the lower heel assembly and having a lateral release assembly for applying lateral securing pressure to the ski boot, the upper heel assembly comprising an upper heel housing that is configured to compress the heel portion of the ski boot downward.” Ex. 1001, 11:36–12:2. Thus, from the claim itself, we know that (1) the “upper heel assembly” is coupled to the “lower heel assembly” and, thus, attached to the ski; (2) this associated upper/lower heel assembly has a “lateral release assembly”; (3) the lateral release assembly is for “applying lateral securing pressure to the ski boot”; and (4) the upper heel assembly “is configured to compress the heel portion of the ski boot downward.” However, none of this claim language requires that the “lateral release assembly” and “upper heel housing” must be treated as separate functional parts of the upper heel assembly that separate and isolate lateral and vertical release forces,

³ Patent Owner takes this position to distinguish prior art devices “with lateral and vertical release mechanisms that share functional structures (such that lateral and vertical release forces are cross-linked).” PO Resp. 13.

respectively. Indeed, other than both being a part of the upper heel assembly, we note that there is no specific relationship recited between the two components at all, let alone the one advanced by Patent Owner.

We next turn to the relevant portions of the Specification. To that end, Figure 2 of the '867 patent, shown below, depicts a sectional side view of ski binding heel 100.

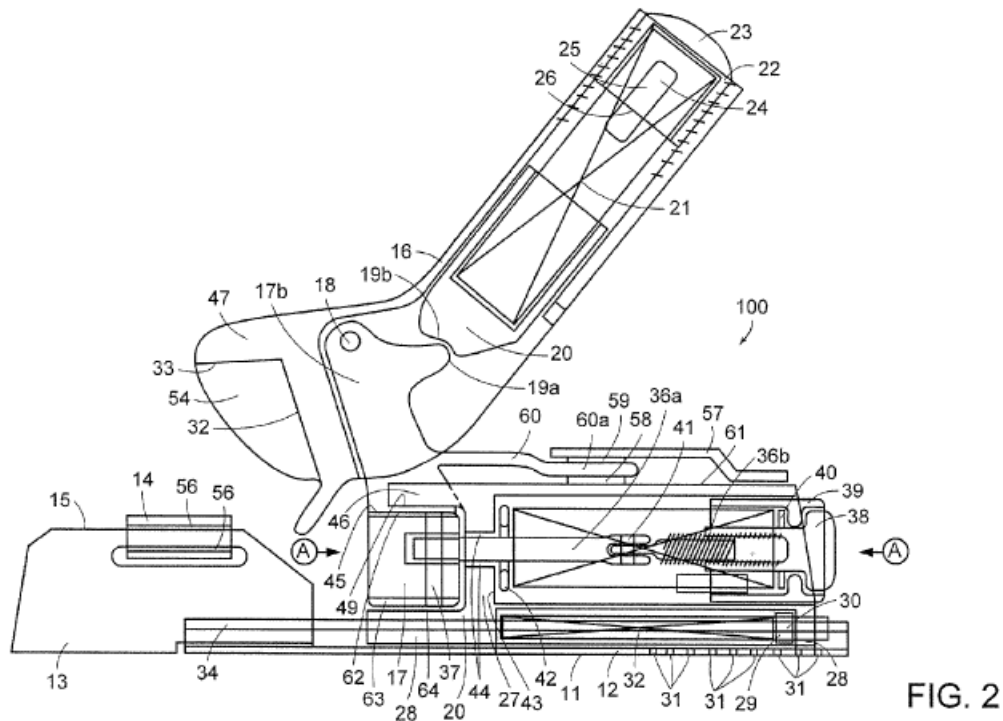


Figure 2 is a side view of the alpine ski binding heel unit 100.

As shown above in Figure 2, ski binding heel unit 100 includes upper heel housing 16 that includes at least pivot rod 18, cam surfaces 19a and 19b, stem section 17b, lateral release cam assembly 17, vertical release cam follower 20, vertical release spring 21, and threaded cap 22, lower heel housing 27, and vector decoupler mechanism 60. Ex. 1001, 5:53–55; 5:59–64. The Specification discloses

[u]pper heel housing **16** connects to lateral release cam **17** by

way of a pivot rod **18**. Vertical release is a function of opposing vertical release cam surfaces **19a** and **19b** on the aft-most end of the upper one-third stem section **17b** of lateral release cam **17**, and the vertical release cam follower **20**. The vertical release spring **21** (shown by an “X”) in the large internal pocket of the upper heel housing **16** pushes cam follower **20**. Forward release threaded cap **22** compresses the opposing end of spring.

Ex. 1001, 6:4–12.

Here also, we do not see how the Specification supports Patent Owner’s position that the “lateral release assembly” and the “upper heel housing” are separate functional parts. In fact, if anything the Specification’s disclosure supports the opposite, as the “lateral release assembly” and “upper heel housing” share common components, i.e., “[v]ertical release is a function of opposing vertical release cam surfaces **19a** and **19b** on the aft-most end of the upper one-third stem section **17b** of lateral release cam **17**, and the vertical release cam follower **20**” (Ex. 1001, 6:5–8), “[u]pper heel housing **16** connects to lateral release cam **17** by way of a pivot rod **18**” (Ex. 1001, 6:4–5). Having common components is not consistent with the notion of two parts isolating lateral and vertical release forces, respectively.

With respect to the Specification, Patent Owner does identify the following as supporting its position:

An alpine ski binding heel unit is disclosed that includes a primary vertical release, lateral heel release and longitudinal pressure compensator. The primary vertical release, lateral heel release and longitudinal pressure compensator are de-linked from each other. That is, they are functionally independent mechanisms. The forward release, the lateral heel release, and longitudinal pressure compensator include independent adjustment.

Ex. 1001, 3:45–52 (cited at PO Resp. 13–14). However, we agree with

Petitioner that this portion of the Specification merely “discusses the ‘primary vertical release, lateral heel release and longitudinal pressure compensator’ but does not discuss the upper heel assembly or upper heel housing nor specifically the ‘lateral release assembly’” (Pet. Reply 7), and, as such, fails to support Patent Owner’s assertions.

Indeed, Patent Owner’s proposed interpretation appears to be inconsistent with Patent Owner’s position in the related district court litigation. There, in its Response to Petitioner’s Opening Claim Construction Brief, Patent Owner stated that “[c]laim 1 does not recite the requirement that all components of the ‘lower heel assembly’ shall contain no components of the ‘upper heel assembly’ and vice versa.” Ex. 1011, 18. Patent Owner further stated that “[t]hese elements act together to permit lateral retention/release. Although the many components of the ‘lateral release assembly’ are in the ‘upper heel assembly’, the cam surface that the ‘lateral release assembly’ reacts against, element 27a, is in the “lower heel assembly.” Ex. 1011, 18; *cf.* Paper 30, 15:16–24. While we acknowledge that there are circumstances where different claim construction positions are justified, here, Patent Owner appears to be advancing a narrower construction than in district court, which is the reverse of the usual scenario.

Consequently, in the context of the ’867 patent’s claims and Specification, we find that a person of ordinary skill in the art would not have understood that the “lateral release assembly” and “upper heel housing” are separate functional parts of the upper heel assembly that separate and isolate lateral and vertical release forces, respectively.

B. Level of Skill in the Art

“Section 103(a) forbids issuance of a patent when ‘the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.’” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 405 (2007).

Regarding the level of skill in the art, Petitioner asserts:

a POSA in the February 18, 2003 timeframe would be an individual with a Bachelor’s degree in mechanical engineering or related technology and three to five years of experience in either the design, fabrication, or manufacture of ski bindings and related equipment, research concerning ski bindings and related equipment, or the development of standards concerning ski bindings or related equipment, in addition to ten years or more of personal experience using ski bindings.

Pet. 14–15 (citing Ex. 1006 ¶ 32). In response, “Patent Owner agrees with Petitioner’s definition of a person of ordinary skill in the art (‘POSITA’) for purposes of the ’867 patent.” PO Resp. 3 (citing Pet. 14–15). Having considered the evidence, we find that Petitioner’s articulation of the level of ordinary skill is correct. We also note that the cited references often reflect the appropriate level of skill at the time of the claimed invention, and that the references cited here appear to reflect the level agreed to by the parties. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (“the prior art itself [can] reflect the appropriate level of skill in the art”).

C. Claims 1 and 4–9 as Anticipated by DE ’298

Petitioner argues that claims 1 and 4–9 are anticipated by DE ’298. Pet. 25–56 (citing Exs. 1001, 1002, 1004, 1006, 1008–1012). Patent Owner

Figure 2 of DE '298 depicts the releasing/retaining device of a releasing ski binding, and is set forth below.

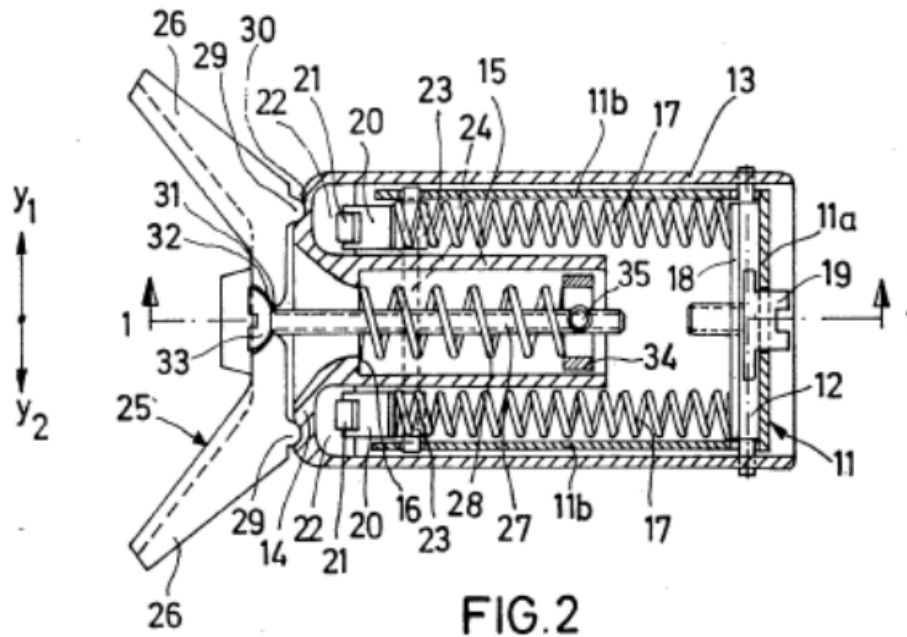


Figure 2 depicts a plan view of the DE '298 releasing/retaining device of a releasing ski binding.

As shown above, DE '298 discloses

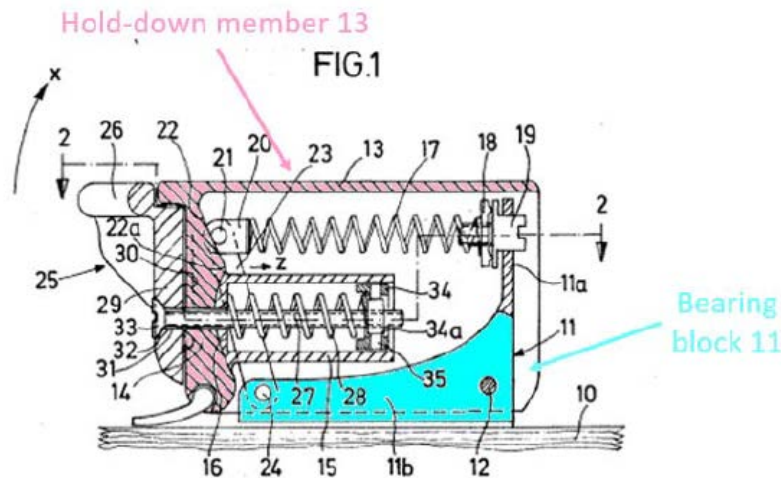
a retaining jaw [25] for holding the shoe in the lateral direction is mounted on an upwardly pivotable hold-down member [13], which holds the shoe against a release resistance in the upwards direction, in such a way that said hold-down member can be swiveled to the side against a detent resistance [(detent suspension 28)], which is supported on said hold-down member.

Ex. 1004, 3.

2. Analysis

Petitioner asserts that claims 1 and 4–9 are anticipated by DE '298. Pet. 26–56 (citing Exs. 1001, 1002, 1004, 1006, 1008–1012). For example, independent claim 1 recites “[a] vector decoupling assembly . . . comprising” “a lower heel assembly attached to the ski” and “an upper heel

assembly coupled to the lower heel assembly.” Petitioner provides the following copy of Figure 1 of DE '298, annotated to identify, among several items, bearing block 11 and hold-down member 13.

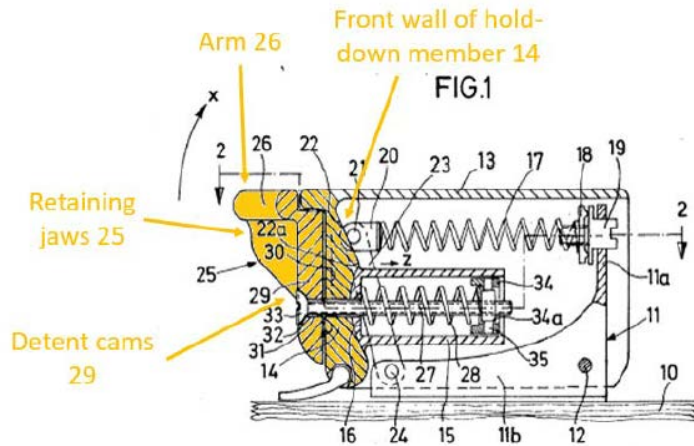


Id., FIG. 1, p. 16 (annotations in color).

Figure 1, annotated, depicts the DE '298 releasing/retaining device of a releasing ski binding.

Pet. 36. Petitioner asserts that the releasing/retaining device of a releasing ski binding of DE '298, depicted in Figures 1 and 2, corresponds to the claimed vector decoupling assembly. Pet. 32–35 (citing Ex. 1004, 2–4, 6, 9, 11; Ex. 1006 ¶ 67). Petitioner further asserts that bearing block 11 of DE '298 corresponds to the recited “lower heel assembly attached to the ski” and hold-down member 13 of DE '298 corresponds to the recited “upper heel assembly coupled to the lower heel assembly.” Pet. 35–36 (citing Ex. 1004, 6–7). Patent Owner does not dispute that DE '298 discloses the above limitations of independent claim 1. For the reasons stated in the Petition, we are persuaded that Petitioner has met its burden of showing that these claim limitations are met by DE '298.

Independent claim 1 additionally recites the “upper heel assembly” includes “a lateral release assembly for applying lateral securing pressure to the ski boot.” Petitioner provides another copy of Figure 1 of DE '298, annotated to identify, among several items, front wall of hold-down member 14, retaining jaws 25, arm 26, and detent cams 29.



Id., FIG. 1, p. 16 (annotations in color).

Figure 1, annotated, depicts the DE '298 releasing/retaining device of a releasing ski binding.

Pet. 37. Petitioner asserts that “the retaining jaw 25, the two arms 26, the two detent cams 29, and the front wall of the hold-down member 14 work together as a lateral release assembly.” Pet. 37–38 (citing Ex. 1004, 4, 8, 11). Patent Owner does not dispute that DE '298 discloses the above limitation of independent claim 1. For the reasons stated in the Petition, we are persuaded that Petitioner has met its burden of showing that this claim limitation is met by DE '298.

Independent claim 1 further recites the “upper heel assembly” “compris[es] an upper heel housing that is configured to compress the heel portion of the ski boot downward.” Petitioner provides another copy of

Figure 1 of DE '298, annotated to portray a ski boot with downward compressing force on the heel portion of the boot.

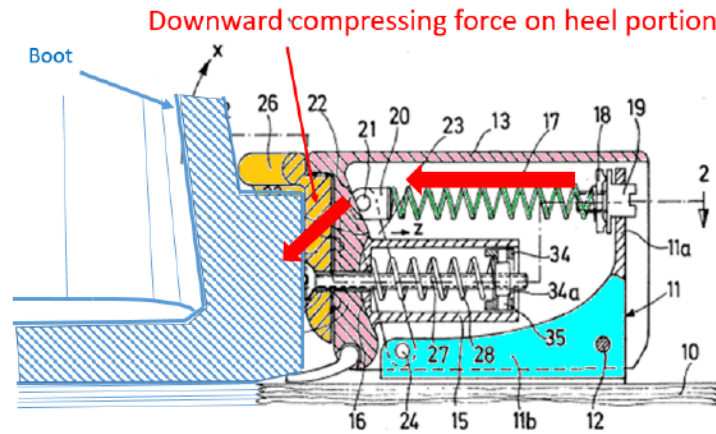


FIG. Q. Detailed side cutaway view of ski binding of DE '298 with ski boot.

MARKERVOLKL-1006, ¶ 72.

Figure 1, annotated, depicts the DE '298 releasing/retaining device of a releasing ski binding.

Pet. 41. Petitioner asserts that “the hold-down member 13 (pink) is urged downward by springs 17 (green) operating against the front cross wall 14 (gold) of the hold-down member 13 through rollers 21 (lavender) in engagement with detent tracks 22 (orange).” Pet. 40 (citing Ex. 1004, 6–7; Ex. 1006 ¶ 72).

Patent Owner responds that DE '298 does not disclose an “upper heel assembly” that compresses the heel portion of the ski boot downward. PO Resp. 25–30. Patent Owner argues that “the disclosure of DE '298 makes clear that the hold-down member 13 and heel holder 25 *only resist upward motion* by the ski boot heel – they do not ‘*compress* the heel portion of the ski boot *downward*’ by providing downward force on the heel.” PO Resp. 26. To support its position, Patent Owner provides an annotated copy of the annotated copy of Figure 2, provided by Petitioner and designated “Fig. Q” in the Petition. See Pet. 41. More particularly, Patent Owner

annotated Petitioner's "Fig. Q," to show "a gap (circled in purple) between the top edge of the ski boot sole (which Petitioner added; the original figure in DE '298 does not show the boot) and the bottom edge of arms 26 of heel holder 25." PO Resp. 27–30 (citing Ex. 2001 ¶ 62).

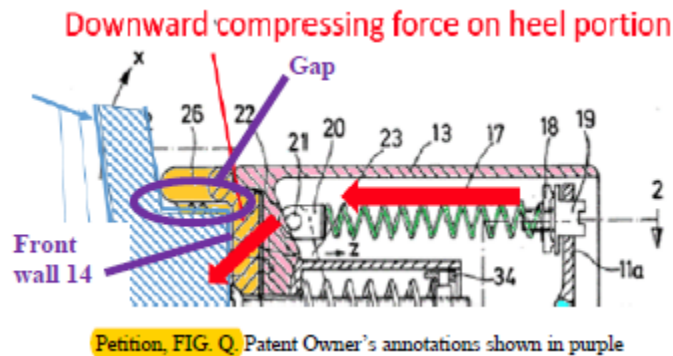


Figure 2, annotated, depicts the DE '298 releasing/retaining device of a releasing ski binding.

And, because there is a "gap" between the ski boot, superimposed by Petitioner in Fig. Q (*see, e.g.*, Pet. 41), and arms 26 of heel holder 25, Patent Owner argues that DE '298 "cannot provide downward force as the arms 26 do not touch the ski boot heel." PO Resp. 28 (citing Ex. 2001 ¶ 63).⁴

Therefore, although Patent Owner acknowledges that DE '298 discloses that its hold-down member "hold[s] the shoe down 'against upwardly pivoting'" (PO Resp. 26–27 (citing Ex. 1004, 4), Patent Owner argues that merely "[o]pposing upward motion does not **compress** the ski boot downward as required by the challenged claims."⁵ PO Resp. 28.

⁴ The cited portions of Dr. Dodge's Declaration largely mirror the language set forth in the corresponding portion of the Patent Owner Response.

⁵ Patent Owner submits that "[t]he plain and ordinary meaning of the term 'compress' means 'to squeeze or press together', or 'to make smaller as if by squeezing.'" PO Resp. 28 (citing Ex. 2003).

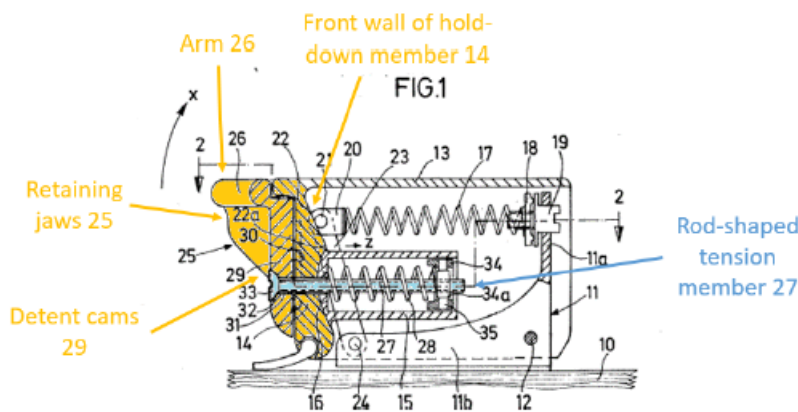
Petitioner responds that Patent Owner's reading of DE '298 is strained, that other portions of the reference make clear that DE '298 discloses an "upper heel assembly" that does in fact compress the heel downward, and that any purported "gap" in the drawing is a red herring that does not comport with basic physics. Pet. Reply 15–18.

We agree with Petitioner. Initially, we note that Patent Owner's reliance on the "gap," depicted in Petitioner's annotated version of Figure 2, i.e., "Fig. Q," between the ski boot and the bottom edge of arms 26 of heel holder 25, to be misplaced. As Patent Owner acknowledges, the original Figure 2 in DE '298 does not show the ski boot (PO Resp. 27); rather, it was added by Petitioner for demonstrative purposes. See Pet. Reply 17 (citing Ex. 1026, 119:25–120:20). Patent Owner also acknowledges that there is no discussion regarding such a "gap" in DE '298. Paper 30, 42:16–23.

Instead, we agree with Petitioner that the hold-down member 13, heel holder 25, and spring 17 disclosed in DE '298 constitute "the upper heel assembly comprising an upper heel housing that is configured to compress the heel portion of the ski boot downward," as required by independent claim 1. See Pet. Reply 16. In making this determination, we note that the '867 patent discloses that "[t]he upper heel housing **16 holds and compresses** a ski boot heel **downward to oppose the upward forces** generated by the ski boot during skiing." Ex. 1001, 6:20–22 (emphases added). In a similar fashion, DE '298 describes its "hold-down member, which serves to hold the shoe in the upward direction and which can be pivoted upwards about a rearward transverse axis, **is held down against upwardly pivoting** by one or more hold-down springs by means of guide member." Ex. 1004, 4 (emphasis added). Here, as Petitioner points out,

“even assuming that a gap is present, the fundamental principles of physics still apply. In a spring-loaded binding, any movement of the boot that puts it in contact with the retaining jaw or arms would be held down by the compressive or downward resisting force of a spring.” Pet. Reply 17 (citing Ex. 1025 ¶ 11). Therefore, consistent with the plain and ordinary meaning of the term “compress,” as proffered by Patent Owner, we find DE ’298 discloses an “upper heel assembly” that would compress, i.e., “press together” the heel portion of the ski boot downward, as the claim limitation requires. Thus, we are persuaded that Petitioner has met its burden of showing that this claim limitation is met by DE ’298.

Independent claim 1 also recites “a linkage element fixedly attached to the lateral release assembly.” Petitioner provides another copy of Figure 1 of DE ’298, annotated to identify, among several items, front wall of hold-down member 14, retaining jaws 25, arm 26, rod-shaped tension member 27, and detent cams 29.

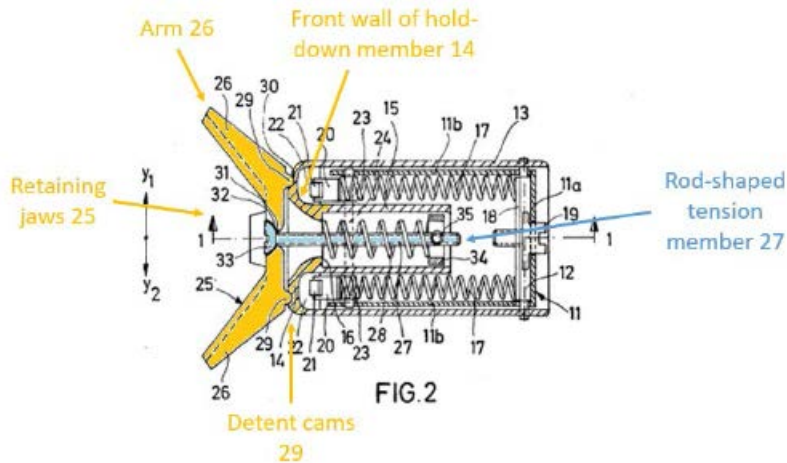


Id., FIG. 1, p. 16 (annotations in color).

Figure 1, annotated, depicts the DE ’298 releasing/retaining device of a releasing ski binding.

Pet. 43. Petitioner also provides a copy of Figure 2 of DE ’298, annotated to again identify, among several items, front wall of hold-down member 14,

retaining jaws 25, arm 26, rod-shaped tension member 27, and detent cams 29.



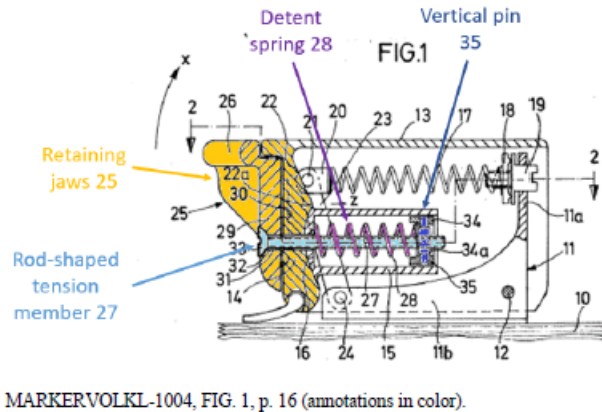
Id., FIG. 2, p. 16 (annotations in color).

Figure 2, annotated, depicts the DE '298 releasing/retaining device of a releasing ski binding.

Pet. 44. Petitioner asserts DE '298 “describes a lateral release assembly comprised of the retaining jaw, the two arms, the two detent cams, and the front wall of the hold-down member” and further discloses “a rod-shaped tension member 27 (shown in light blue) fixedly attaches these elements against the front wall of the hold-down member 14, acting as a linkage element.” Pet. 42, 46 (citing Ex. 1004, 4, 8, 11; Ex. 1006 ¶ 73). For the reasons stated in the Petition, we are persuaded that Petitioner has met its burden of showing that this claim limitation is met by DE '298.

Independent claim 1 additionally recites “wherein the linkage element, a first surface and a second surface cooperate to limit motion of the lateral release assembly to within a predetermined region within a plane defined by the longitudinal and horizontal axes of the ski.” Petitioner provides additional copies of Figures 1 and 2 of DE '298, both annotated to

identify, among several items, retaining jaws 25, rod-shaped tension member 27, and detent springs 28, and vertical pin 35.



MARKERVOLKL-1004, FIG. 1, p. 16 (annotations in color).

Figure 1, annotated, depicts the DE '298 releasing/retaining device of a releasing ski binding.

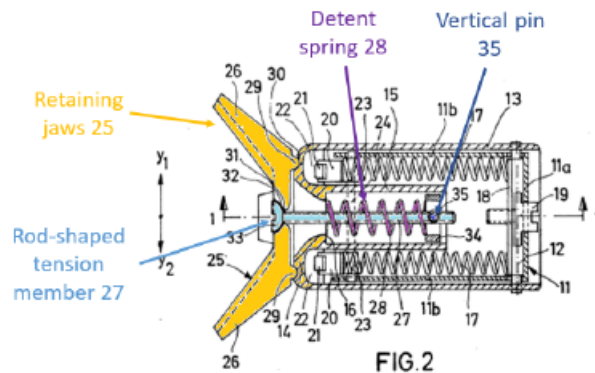


Figure 2, annotated, depicts the DE '298 releasing/retaining device of a releasing ski binding.

Pet. 46–47. Petitioner asserts that “[t]he tension member 27 is pivotably attached by vertical pin 35 to allow tension member 27 to swivel in the lateral direction” and Figures 1 and 2, annotated, “show how the lateral movement of the retaining jaw/heel holder 25 is constrained in lateral movement by the tension member 27 (light blue), vertical pin 35 (dark blue)

in cooperation with the surface of the front cross wall 14 (gold) of the hold-down member 13.” Pet. 44–45 (citing Ex. 1004, 9; Ex. 1006 ¶ 76).

Patent Owner responds that DE ’298 does not disclose a “‘lateral release assembly’ that is limited in motion to the horizontal plane of the ski by a ‘linkage element’ because the entire alleged lateral release assembly in DE ’298 moves in a vertical direction outside the horizontal plane of the ski.” PO Resp. 21–25 (citing Ex. 2001 ¶¶ 52–57; Ex. 2002, 43:3–44:22, 44:24–45:5).⁶ More particularly, Patent Owner argues that “tension member 27 (the alleged ‘linkage element’) does not limit motion of front wall 14 of hold down member 13, arm 26, retaining jaws 25, and detent cams 29 (the alleged ‘lateral release assembly’) to within a predetermined region within a plane defined by the longitudinal and horizontal axes of the ski.” PO Resp. 23. In this regard, Patent Owner contends that DE ’298 cannot disclose the argued limitation because “challenged claim 1 requires that the lateral release assembly can only move within the specified horizontal plane of the ski,” and, thus, “the lateral release assembly cannot move outside of that plane, such as in a direction orthogonal to the longitudinal and horizontal axes of the ski.” PO Resp. 22; Ex. 2001 ¶ 53.

Petitioner responds that Patent Owner’s contentions are largely inapposite because while the claim requires that any lateral movement be limited to the predetermined region, the claim does not preclude lateral release assembly from moving in a direction other than laterally, for example, vertically. Pet. Reply 11. We agree with Petitioner that independent claim 1 does not require that the lateral release assembly limit

⁶ The cited portions of Dr. Dodge’s Declaration largely mirror the language set forth in the corresponding portion of the Patent Owner Response.

motion to **only** “the specified horizontal plane of the ski.” Instead, the claim limitation recites “the linkage element, a first surface and a second surface cooperate to **limit motion of the lateral release assembly to within a predetermined region within a plane defined by the longitudinal and horizontal axes of the ski.**” Ex. 1001, 12:5–8 (emphasis added). Here, we find the claim merely requires limiting motion of the “lateral release assembly” to a “predetermined region” of the plane defined by “the longitudinal and horizontal axes of the ski.” The claim, however, does not recite limiting movement outside of that plane, e.g., vertically. Thus, we agree with Petitioner that “outside of the predetermined region, the lateral release assembly may move in a direction other than laterally.” Pet. Reply 11. Accordingly, based on Petitioner’s analysis, which we have outlined above, we find that DE ’298 discloses a “linkage element” where “a first surface and a second surface cooperate to limit motion of the lateral release assembly to within a predetermined region within a plane defined by the longitudinal and horizontal axes of the ski,” and further determine that the fact that DE ’298 may allow lateral movement of the “lateral release assembly” outside of that predetermined region is inapposite to that finding. Thus, we are persuaded that Petitioner has met its burden of showing that this claim limitation is met by DE ’298.

For dependent claims 4–9, Petitioner performs a similar mapping of the additional claim limitations of these claims to DE ’298. Pet. 47–56; *See also* Dec. 15–17. Other than the arguments discussed above for independent claim 1, Patent Owner does not raise any arguments specific to dependent claims 4–9. We have considered each of Petitioner’s mappings anew, and are persuaded that Petitioner has met its burden of showing, by a

preponderance of the evidence, that DE '298 discloses each and every claim limitation of dependent claims 4–9 for the reasons stated in the Petition.

3. *Conclusion*

For the reasons discussed above, and based on the record before us, we determine that Petitioner has shown by a preponderance of the evidence that claims 1 and 4–9 are anticipated by DE '298.

D. Claims 1 and 4–9 as Obvious Over Boussemart and DE '298

Petitioner argues that claims 1 and 4–9 are obvious over Boussemart and DE '298. Pet. 25, 62–82 (citing Exs. 1004, 1005, 1006, 1011). Patent Owner responds. PO Resp. 31–41 (citing Pet.; Exs. 1001, 1004, 1005, 2001, 2002). Petitioner replies. Pet. Reply 9–18 (citing Pet.; Exs. 1001, 1005, 1025, 1026, 2001). We have considered the parties' arguments and supporting evidence, and we determine that Petitioner has shown by a preponderance of the evidence that claims 1 and 4–9 are obvious over Boussemart and DE '298.

1. Boussemart (Ex. 1005)

Boussemart “relates to a safety binding adapted to releasably hold a boot on a ski,” and “[m]ore particularly, the invention relates to a heel type binding adapted to hold the back end of the boot and to permit the boot to pivot both vertically and laterally.” Ex. 1005, 1:14–18. Boussemart discloses that its safety binding includes an assembly comprising a jaw, adapted to hold at least a portion of a boot and to pivot both vertically and laterally, a pivoting element, having a substantially flat rear surface and pivotable with respect to the support, and an elastic means. Ex. 1005, 2:5–9. Boussemart discloses “the lateral pivoting of the assembly and the pivoting element is performed about one vertical axis passing through the

longitudinal axis of the support.” Ex. 1005, 2:4–17. Figures 1 and 2 of Boussemart depict the binding securing the boot, and are set forth below.

FIG. 1

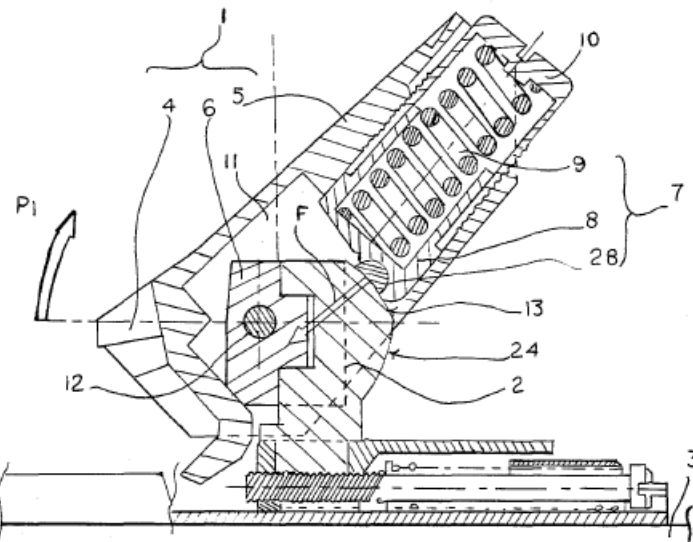


Figure 1 depicts a longitudinal cross-sectional lateral view of the binding securing the boot.

FIG. 2

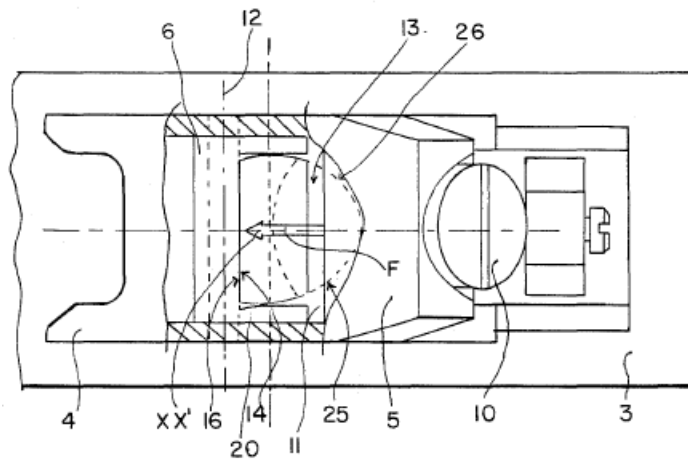


Figure 2 depicts a partial cross-sectional top view of the binding securing the boot.

As shown above, Boussemart discloses that “[j]aw 4 and assembly 1 are adapted to pivot vertically around said axis pin 12 in the direction P₁ shown in Fig. 1” (Ex. 1005, 8:23–23) and “[a]ssembly 1 is also adapted to

pivot laterally, around vertical axis xx' passing through the longitudinal axis of the binding and/or support 2" via pivoting element 6 (*id.* 8:33–36).

2. Analysis

Petitioner asserts that claims 1 and 4–9 are obvious over Boussemart and DE '298. Pet. 25, 62–82 (citing Exs. 1005, 1006, 1011). For example, the preamble of independent claim 1 recites “[a] vector decoupling assembly for separating and isolating two or more force vectors applied to a safety binding securing a heel portion of a ski boot to a ski.”

Petitioner asserts that the aforementioned preamble of claim 1 is no more than an intended use. Pet. 62 (citing Ex. 1011, 11). To the extent the preamble may be viewed as limiting, however, Petitioner asserts that Boussemart discloses “separate vertical release and lateral release” (Pet. 62 (citing Ex. 1005, 8:22–24, 10:13–14, Figs. 1 and 7)), but acknowledges that Boussemart “includes a single spring 9 to bias against both vertical and lateral forces” (Pet. 62), which “does not allow independent adjustment for vertical and lateral forces” (Pet. 63 (citing Ex. 1005, 8:9–21)).

To address this purported deficiency, Petitioner asserts that “DE '298 teaches that it is beneficial to allow a ski binding that resists against release of the ski boot in the upward direction and also resists against release of the ski boot in the lateral direction, wherein the resistance can be ‘dimensioned and adjusted independently of each other.’” Pet. 63 (citing Ex. 1004, 4). Petitioner further asserts that DE '298 “use[s] separate biasing means in both the vertical and lateral directions.” Pet. 63 (citing Ex. 1004, 3–4). Petitioner concludes that

a POSA would have been motivated to modify [Boussemart] with the teachings of DE '298 to add a second biasing means so that the vertical and lateral resistances would be dimensioned and

adjusted independently of each other to achieve the stated purpose of adjusting the retaining suspension for lateral and vertical retention of the shoe to an optimal value in each case.

Pet. 64. Patent Owner does not dispute that the combination of Boussemart and DE '298 teaches the above limitation of independent claim 1. For the reasons stated in the Petition, we are persuaded that Petitioner has met its burden of showing that this claim limitation is met by the aforementioned combination of Boussemart and DE '298.

Independent claim 1 recites further “[a] vector decoupling assembly . . . comprising” “a lower heel assembly attached to the ski” and “an upper heel assembly coupled to the lower heel assembly.” Petitioner provides the following copy of Figure 1 of Boussemart, annotated to identify, among several items, support 2 and jaws 4.

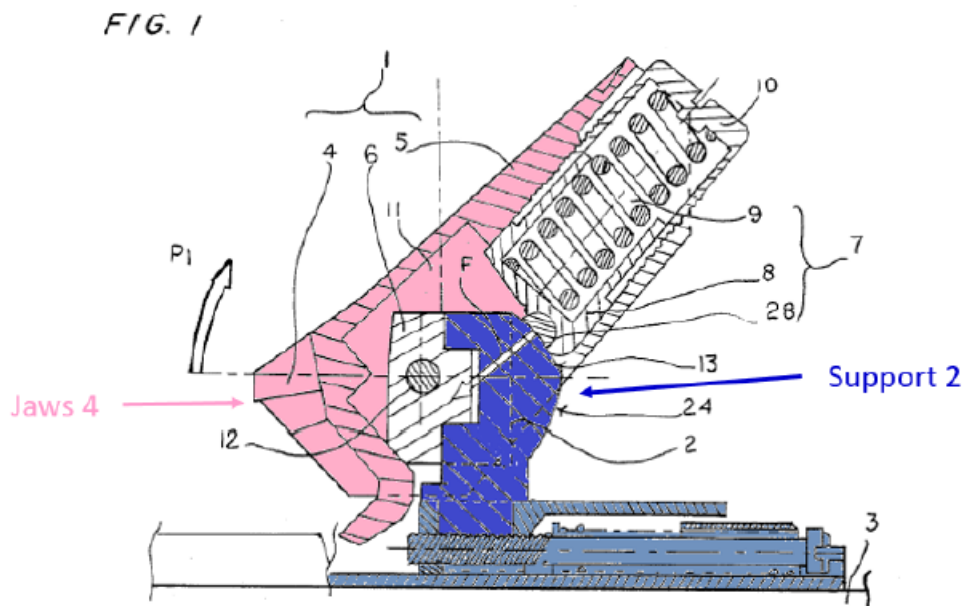


Figure 1, annotated, depicts a longitudinal cross-sectional lateral view of the binding securing the boot.

Pet. 66. Petitioner asserts that the releasing/retaining device of a releasing ski binding depicted in Figures 1 and 2 corresponds to “[a] vector

decoupling assembly,” and that support 2 and jaws 4 of Boussemart correspond respectively to the recited lower and upper heel assembly. Pet. 62–66 (citing Ex. 1005, 7:68–8:2, 8:14–16; Ex. 1006 ¶¶ 106–107). Patent Owner does not dispute that the combination of Boussemart and DE ’298 teaches the above limitations of independent claim 1. For the reasons stated in the Petition, we are persuaded that Petitioner has met its burden of showing that this claim limitation is met by the aforementioned combination of Boussemart and DE ’298.

Independent claim 1 recites also that the “upper heel assembly” includes “a lateral release assembly for applying lateral securing pressure to the ski boot.” Petitioner provides another copy of Figure 1 of Boussemart, annotated to identify, among several items, pivoting element 6 and elastic system 7. Pet. 68.

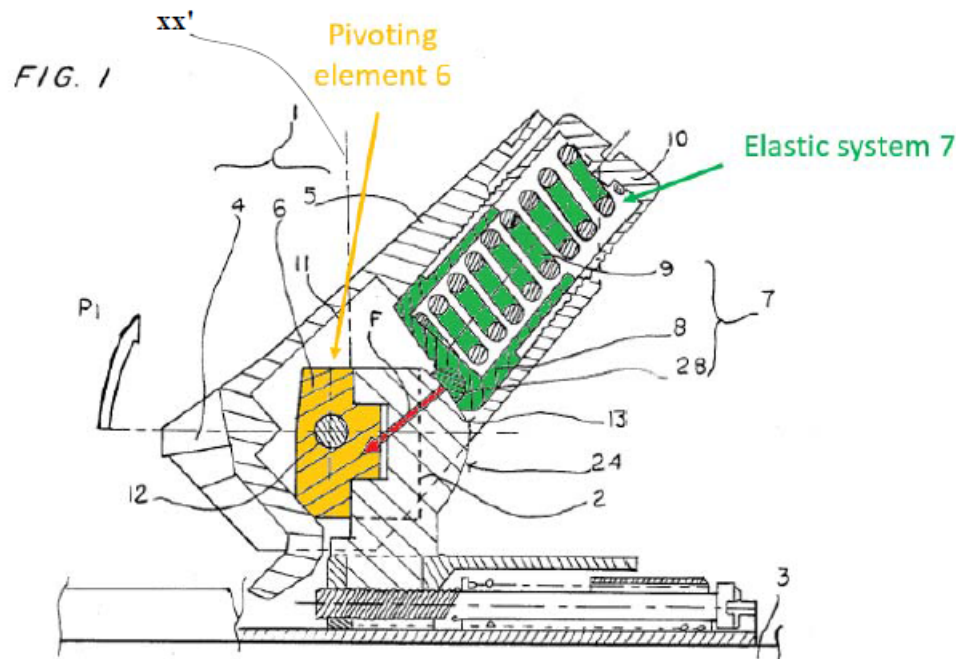


Figure 1, annotated, depicts a longitudinal cross-sectional lateral view of the binding securing the boot.

Petitioner asserts that “pivoting element 6 (gold in annotated FIG. 1 below) in conjunction with the elastic system 7 (green) resist the lateral pivoting of assembly 1 around the vertical axis xx’ (annotated in FIG. 1).” Pet. 66–67 (citing Ex. 1005, 8:11–17, 8:33–52).

Independent claim 1 further recites the “upper heel assembly” “compris[es] an upper heel housing that is configured to compress the heel portion of the ski boot downward.” Petitioner then provides another copy of Figure 1 of Boussemart, annotated to portray a ski boot with downward compressing force on the heel portion of the boot.

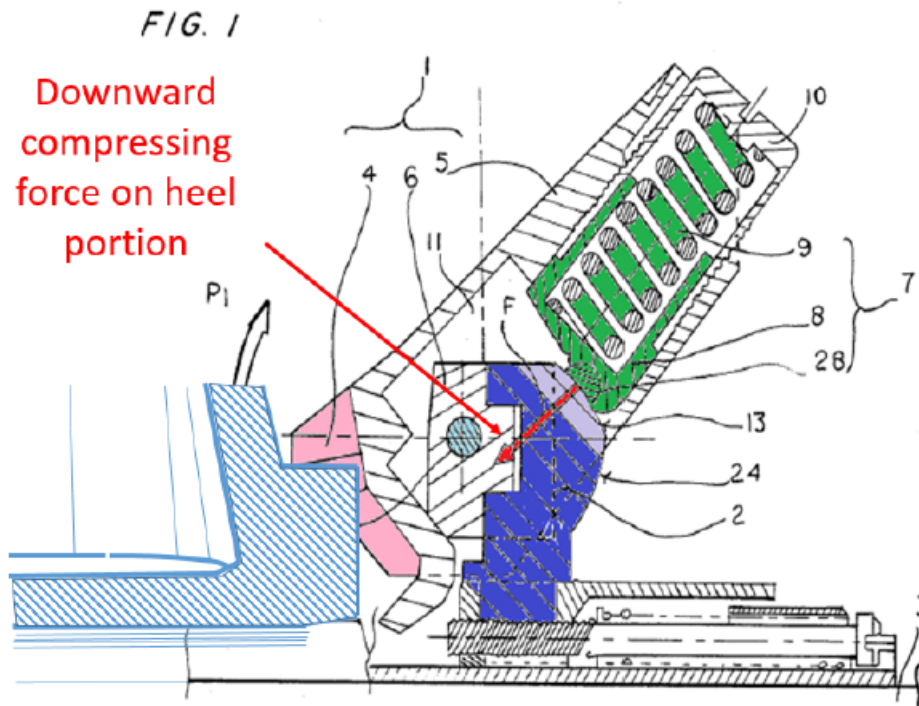


Figure 1, annotated, depicts a longitudinal cross-sectional lateral view of the binding securing the boot.

Pet. 69. Petitioner asserts that body 5 includes elastic system 7, which comprises a piston 8 biased by a spring 9, and acts to compress the heel portion of the ski boot downward. Pet. 68 (citing Ex. 1005, 8:9–14; Ex. 1006 ¶ 110).

Patent Owner responds that Boussemart does not disclose the claimed “lateral release assembly” and “upper heel housing,” because “claim 1 requires that the ‘lateral release assembly’ and the ‘upper heel housing’ be functionally separate structures that separate and isolate lateral and vertical release forces.” PO Resp. 36. More particularly, Patent Owner argues that Boussemart does not disclose the argued elements, because Petitioner relies on elastic system 7 in Boussemart to “generate both ‘lateral securing pressure’ as well as downward compressive force to the heel of the ski boot.” PO Resp. 36 (citing Pet. 62, 66–69).

Petitioner responds that Patent Owner’s contentions are unsupported by the language of the claim and “based on a claim interpretation that is without factual support.” Pet. Reply 18–19. We agree with Petitioner.

As discussed above in Section II.A., we do not find independent claim 1 requires that the “lateral release assembly” and “upper heel housing” be treated as separate functional parts of the upper heel assembly that separate and isolate lateral and vertical release forces, respectively. Instead, as Petitioner points out, claim 1 utilizes “the term ‘assembly’ for upper heel assembly, which means that the upper heel assembly is a unit consisting of a number of components that have been fitted together.” Pet. Reply 18. Accordingly, based on Petitioner’s analysis, which we have outlined above, we find that Boussemart teaches the claimed “lateral release assembly” and “upper heel housing” recited by independent claim 1. We also determine Patent Owner’s contention that Boussemart “does not include a ‘lateral release assembly’ that is functionally separate from an ‘upper heel housing’ because its lateral and vertical release structures are functionally cross-linked” (PO Resp. 36 (citing Ex. 2001 ¶ 75)) inapposite because it is based

on an incorrect claim construction. Thus, we are persuaded that Petitioner has met its burden of showing that this claim limitation is met by the aforementioned combination of Boussemart and DE '298.

Independent claim 1 further recites “a linkage element fixedly attached to the lateral release assembly.” Petitioner provides another copy of Figure 1 of Boussemart, annotated to identify, among several items, pivoting element 6, elastic system 7, and axis pin 12.

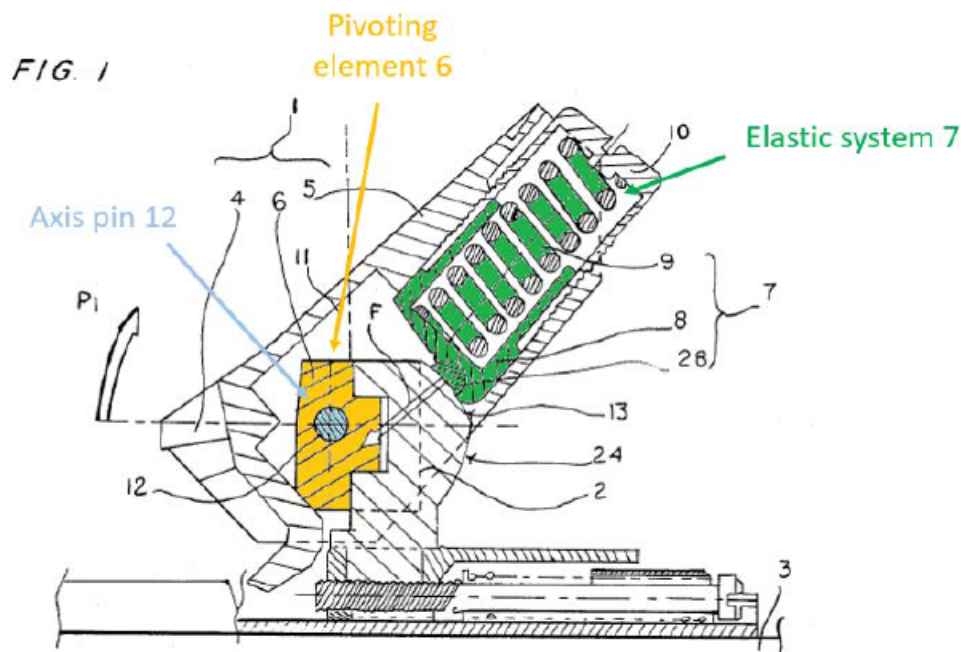


Figure 1, annotated, depicts a longitudinal cross-sectional lateral view of the binding securing the boot.

Pet. 70. Petitioner asserts Boussemart describes a lateral release assembly comprised of a pivoting element and an elastic system (shown in gold and green respectively, in annotated FIG. 1, and further asserts that pivoting element 6 is fixedly attached to the lateral release assembly by an axis pin (light blue). Pet. 69–70 (citing Ex. 1005, 2:21–23, 8:17–21; Ex. 1006 ¶ 111).

Patent Owner responds that it is unclear what structure Petitioner maps the “linkage element” to in Boussemart. PO Resp. 31–34 (citing Ex. 2001 ¶¶ 71–72; Ex. 2002, 31:21–32:14).

Petitioner responds stating that the Patent Owner’s contention is “disingenuous” because the Petition

clearly indicated that the lateral release assembly is comprised of a pivoting element 6 and an elastic system 7 and that the substantially flat front surface 14 of support 2 is biased in contact with the substantially flat rear surface 16 of pivoting element 6 to limit the motion of the lateral release assembly.

Pet. Reply 20 (citing Pet. 67, 70; Ex. 1025 ¶ 15). We agree with Petitioner. In making this determination, we note that Petitioner maps pivoting element 6 in conjunction with the elastic system 7 as the “lateral release assembly” that resists lateral pivoting of assembly 1 around the vertical axis xx’ (see Pet. 66–67 (citing Ex. 1005, 8:11–17, 8:33–52)) and axis pin 12, which is fixedly attached to pivoting element 6 of the “lateral release assembly” as the claimed “linkage element.” Pet. 69–70 (citing Ex. 1005, 2:21–23, 8:17–21; Ex. 1006 ¶ 111).

Patent Owner further argues to the extent Petitioner maps the claimed “linkage element” to Boussemart’s axis pin 12, axis pin 12 does not constitute the claimed “linkage element,” because it “is not fixedly attached to elastic system 7 (which Petitioner claims is the alleged “lateral release assembly”). PO Resp. 33–34 (citing Ex. 2001 ¶ 72; Ex. 2002, 31:21–32:14). Patent Owner’s argument is inapposite, however, as Petitioner maps the recited “lateral release assembly” to both pivoting element 6 and elastic system 7, and not just the latter, as presumed by Patent Owner. With that mapping, we agree with Petitioner that axis “pin 12 ‘fit[s]’ pivoting element 6 into housing 11 to allow for pivoting of 6 around the transverse and

horizontal axis.” Pet. Reply 20–21 (alteration in the original) (citing Ex. 1005, 8:17–21; Ex. 1025 ¶ 16; Ex. 1026, 78:17–79:16). We further agree with Petitioner that “[t]he interaction of elastic system 7 and support 2 creates a torque or moment that resists lateral pivoting (lateral release retention moment).” Pet. Reply 21–22 (citing Ex. 1005, 8:32–52; Ex. 1025 ¶ 17). Accordingly, based on Petitioner’s analysis, which we have outlined above, we find that Boussemart teaches the claimed “linkage element” recited by independent claim 1. Thus, we are persuaded that Petitioner has met its burden of showing that this claim limitation is met by the aforementioned combination of Boussemart and DE ’298.

Independent claim 1 additionally recites “wherein the linkage element, a first surface and a second surface cooperate to limit motion of the lateral release assembly to within a predetermined region within a plane defined by the longitudinal and horizontal axes of the ski.” Petitioner provides an additional copy of Figure 1 of Boussemart, annotated to identify, among several items, support 2, jaws 4, pivoting element 6, elastic system 7, and axis pin 12.

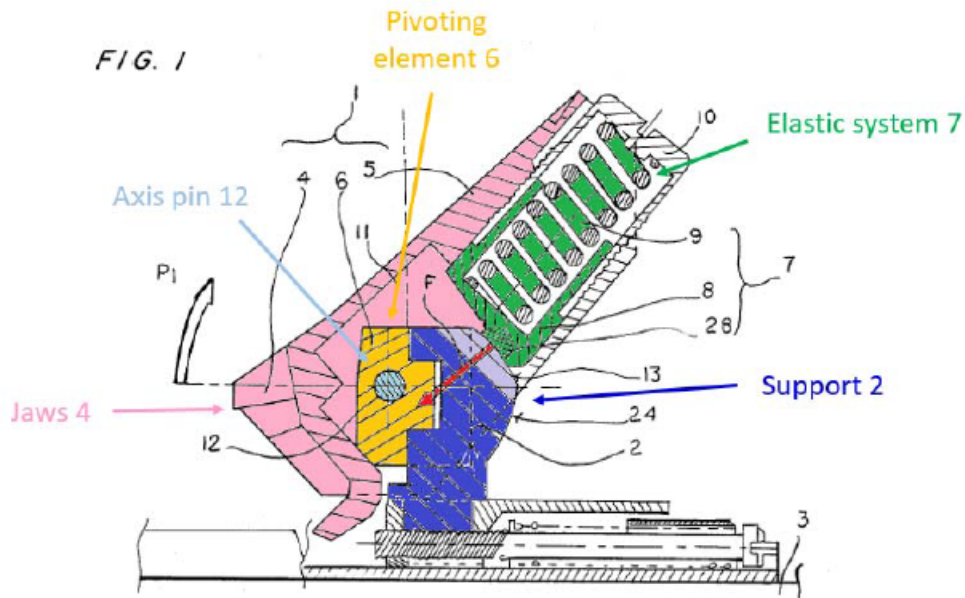


Figure 1, annotated, depicts a longitudinal cross-sectional lateral view of the binding securing the boot.

Pet. 72.

Petitioner provides a copy of Figure 2 of Boussemart, annotated to identify, among several items support 2 and pivoting element 6.

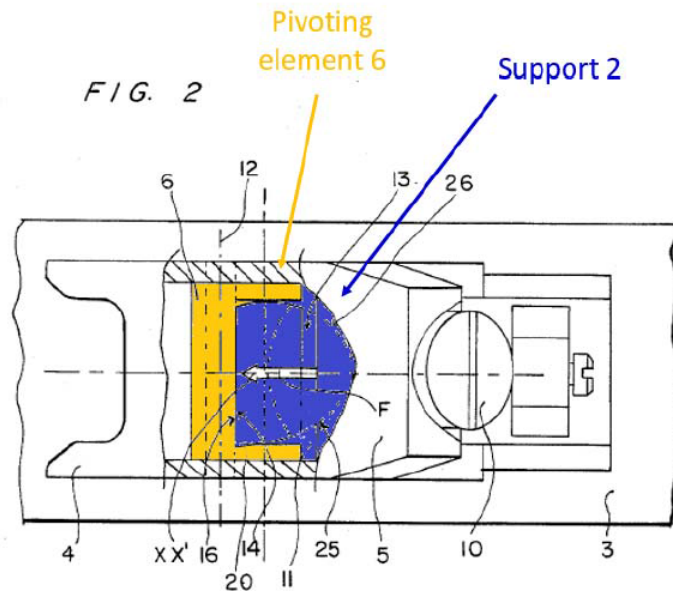


Figure 2, annotated, depicts a partial cross-sectional top view of the binding securing the boot.

Pet. 73.

Petitioner also provides a copy of Figure 2 of Boussemart, annotated to identify, among several items support 2 and pivoting element 6.

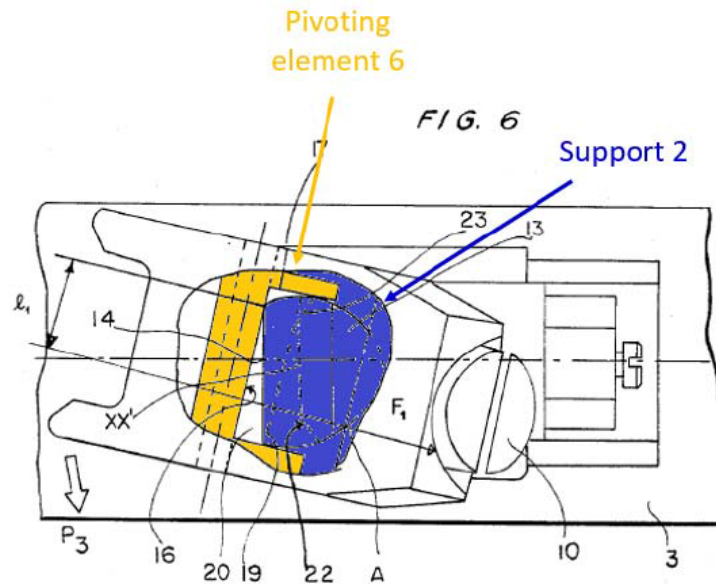


Figure 6, annotated, depicts a partial cross-sectional top view, similar to Figure 2, showing the binding in the course of a lateral release.

Pet. 73.

Petitioner asserts

assembly 1 pivots laterally around vertical axis xx' , which passes through the longitudinal axis of the binding and/or support 2 (dark blue), due to the lateral pivoting of pivoting element 6 (gold). Pivoting element 6 is fitted into the housing 11 (pink) by axis pin 12 (light blue) such that jaw 4 (pink) can pivot around a transverse and horizontal axis transverse to the longitudinal axis of the binding and ski and passing through axis pin 12.

Pet. 71 (citing Ex. 1005, 8:17–21). Petitioner further asserts

[p]ivoting element also contacts/engages support 2, which is guaranteed by the bias of elastic system 7. Specifically, the substantially flat front surface 14 of support 2 is biased in contact with the substantially flat rear surface 16 of pivoting element 6 by force F (shown in red), such that the pivoting element 6 and support 2 form a lateral pivoting system that pivots laterally

around axis xx' of support 2 against the bias/force of elastic system 7 (lateral release retention force). The interaction of elastic system 7 and support 2 creates a torque or moment that resists lateral pivoting (lateral release retention moment).

Pet. 71–72 (citing Ex. 1005, 8:32–52; Ex. 1006 ¶ 112).

Patent Owner responds that Boussemart “does not disclose a ‘linkage member’ that is fixed to a ‘lateral release assembly’ and acts to limit the motion of the ‘lateral release assembly’ to a predetermined region within the horizontal plane of the ski, as required by claim 1.” PO Resp. 35 (citing Ex. 2001 ¶ 74). More particularly, Patent Owner argues that Boussemart fails to disclose or suggest “limit[ing] motion of the elastic system 7 to a plane defined by the horizontal and longitudinal axes of the ski.” PO Resp. 34.

Petitioner responds that Patent Owner’s contentions are largely inapposite because while the claim requires that any lateral movement be limited to the predetermined region, the claim does not preclude lateral release assembly from moving in a direction other than laterally, for example, vertically. Pet. Reply 11, 19. We agree with Petitioner that Boussemart discloses that “when the assembly 1 undergoes a purely lateral stress it pivots laterally and moves forward to provide lateral release of the boot,” and that such a disclosure meets the aforementioned claim limitation. Pet. Reply 19–20 (citing Ex. 1005, 2:1–3, 3:5–7, 9:10–23, 9:57–10:2; Ex. 1026, 81:17–82:13, 91:11–92:2). We further agree with the Petitioner that while Boussemart also discloses that “in response to a vertical force, the pivot 6 of the ski binding in the ’772 patent pivots vertically around axis pin 12 to release the boot,” that such a disclosure is inapposite to the aforementioned claim limitation. *Id.* We have reviewed the relevant

paragraphs of Dr. Dodge's Declaration (Ex. 2001 ¶¶ 73–74), and determine that they are inapposite for the same reasons as set forth above.

Accordingly, based on Petitioner's analysis, which we have outlined above, we find that Boussemart discloses a "linkage element" where "a first surface and a second surface cooperate to limit motion of the lateral release assembly to within a predetermined region within a plane defined by the longitudinal and horizontal axes of the ski." Thus, we are persuaded that Petitioner has met its burden of showing that this claim limitation is met by the aforementioned combination of Boussemart and DE '298.

For dependent claims 4–9, Petitioner performs a similar mapping of the additional claim limitations of these claims to Boussemart and DE '298. Pet. 74–82; *see also* Dec. 28–30. Other than the arguments discussed above for independent claim 1, Patent Owner does not raise any arguments specific to dependent claims 4–9. We have considered each of Petitioner's mappings anew, and are persuaded that Petitioner has met its burden of showing, by a preponderance of the evidence, that Boussemart and DE '298 teach each and every claim limitation of dependent claims 4–9 for the reasons stated in the Petition.

3. *Conclusion*

For the reasons discussed above, and based on the record before us, we determine that Petitioner has shown by a preponderance of the evidence that claims 1 and 4–9 are obvious over DE '298 and Boussemart.

III. ORDER

After due consideration of the record before us, and for the foregoing reasons, it is:

ORDERED, based on a preponderance of evidence, that claims 1 and 4–9 of the '867 patent are shown unpatentable;

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2017-01265
Patent 8,955,867 B2

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