

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

I4F LICENSING NV,
Petitioner

v.

VILOX AB,
Patent Owner

Case IPR2024-00602
U.S. Patent No. 11,421,425

**PATENT OWNER PRELIMINARY RESPONSE
UNDER 37 C.F.R. § 42.107(a)**

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Patent Trial and Appeal Board
U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

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I. INTRODUCTION

The Board should deny institution of *inter partes* review of claims 1-15 (“the challenged claims”) of U.S. Patent No. 11,421,425 (“the ’425 Patent”).

Indeed, Petitioner’s challenge is riddled with flaws.

First, this is textbook case where the Board’s precedential *Advanced Bionics* decision indicates the Board should exercise its discretion to deny institution under § 325(d). Petitioner’s Grounds are based on Miller, alone or in combination with Roy. But *both* Miller and Roy were cited by the Examiner during examination of the ’425 Patent—as two of only thirteen cited references. So, both Miller and Roy were previously considered by the Office. Moreover, Miller and Roy constitute equivalent (or at a minimum, substantially similar) prior art to Thiers, which was explicitly applied and discussed during examination. Thus, the Petition presents the same or substantially the same prior art or arguments that were previously presented to the Office. Further, Petitioner has not shown—and, in fact does not even attempt to show—material error in the Office’s prior consideration of Miller and Roy, as required by *Advanced Bionics*. Accordingly, the Board should exercise discretion and deny institution under § 325(d).

Second, on the merits, the Petition fails to meet the reasonable likelihood threshold required for institution. Petitioner’s asserted references do not disclose, teach, or suggest at least the elements of the claimed locking means. In particular,

the asserted references do not disclose, teach, or suggest the claimed “dual consecutive locking recesses” and corresponding “dual consecutive locking lugs ... for horizontally interlocking engagement,” arranged as in claim 1.

Third, not only is Petitioner’s challenge repetitive and technically flawed, it is supported only by a self-interested declaration *from its own employee*, Mr. Boucké. As Chief Technical Officer at Petitioner i4F, Mr. Boucké indisputably has a vested interest in seeing the ’425 Patent claims found unpatentable. He cannot provide an unbiased opinion. So his testimony cannot be afforded any weight.

Accordingly, as demonstrated herein, *inter partes* review of the challenged claims of the ’425 Patent should be denied.

II. THE ’425 PATENT

A. The ’425 Patent Advanced the State of the Art

The ’425 Patent discloses a joining system for floor panels, including a groove and tongue on opposite floor panel sides. EX1001, 1:17-20. The tongue and grooves are formed to interact and to form a strong horizontal and vertical lock between two adjacent floor panels, while avoiding high material stresses formed during the joining procedure. *Id.*, 1:58-63. The inventors, in developing the solution described in the ’425 Patent, set out to solve an identified existing problem in the market, namely, weaknesses and complexities in existing joining systems for floor panels. *Id.*, 1:25-63. In prior joining systems, gaps could form

between adjacent floor panels or difficulties could exist in laying the floor, for example, high material stress occurring when the tongue is inserted into the groove during connection of adjoining panels. *Id.* So, the inventors strived to invent a more versatile joining system, both simplifying application in panels made from brittle materials, and providing improved locking function and smooth insertion. EX1001, 1:58-63.

Accordingly, independent claim 1, shown below, recites a joining system for floor panels comprising coupling parts having a groove and a tongue on opposite sides of each floor panel, with an improved locking design to couple the floor panels.

Independent claim 1 issued in the '425 Patent as:

Claim Element	Claim Language
[1.1]	1. A joining system for floor panels,
[1.2]	said floor panels comprising coupling parts on at least two opposite sides for joining floor panel together,
[1.3]	said coupling parts including a groove and a tongue, where the groove is shaped for insertion of the tongue of an adjoining floor panel, said tongue of the adjoining floor panel being shaped for locking engagement with the groove in a direction perpendicular to said sides and parallel to a horizontal floor plane defined by the joined panels,
[1.4]	said coupling parts exerting a tension force towards each other in a mutually engaged position, the tension force being achieved by elastic compression of the material of the coupling parts,

[1.5]	locking means for locking the tongue of the adjoining floor panel within the groove, wherein the locking means comprises dual consecutive locking recesses arranged in a lower portion of the groove,
[1.6]	a first locking recess located in an internally extending portion within the groove and a second locking recess located in a lip portion protruding from an entrance opening of the groove,
[1.7]	the locking means further comprises dual consecutive locking lugs arranged in a lower portion of the tongue for horizontally interlocking engagement in the groove,
[1.8]	a first locking lug extending downwardly from a lower tip portion of the tongue and a second locking lug extending downwardly from a root portion of the tongue,
[1.9]	the first locking recess and the first locking lug are provided with matching curved horizontal locking surfaces and the second locking recess and the second locking lug are provided with matching inclined horizontal locking surfaces.

The recited locking means for the floor panels comprises: **[1.5]** dual consecutive locking recesses arranged in a lower portion of the groove, **[1.6]** a first locking recess located in an internally extending portion within the groove and a second locking recess located in a lip portion protruding from an entrance opening of the groove, **[1.7]** dual consecutive locking lugs arranged in a lower portion of the tongue for horizontally interlocking engagement in the groove, **[1.8]** a first locking lug extending downwardly from a lower tip portion of the tongue and a second locking lug extending downwardly from a root portion of the tongue, and **[1.9]** the first locking recess and the first locking lug are provided with matching curved horizontal locking surfaces and the second locking recess and the second

locking lug are provided with matching inclined horizontal locking surfaces.

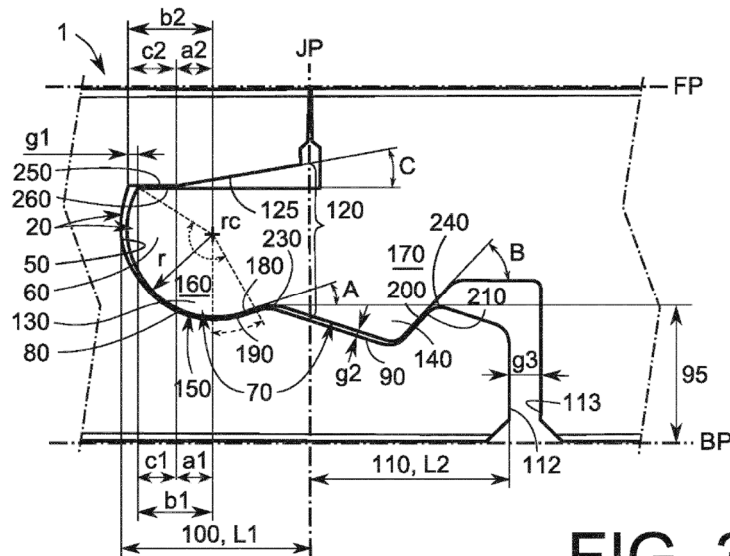
EX1001, 8:65-9:14.

The '425 Patent is specifically focused on joining systems for floor panels where the joining procedure is either an angled insertion movement or a horizontal shifting movement, as opposed to fall-down or push-down joining. *See* EX1001, 4:1-20, FIGs. 6-8. Typically, but not exclusively, joining systems of the type which the '425 Patent is concerned with are arranged on the opposing long sides of a floor panel and fall-down joining systems on the opposing short sides. The inventors of the '425 Patent set out to solve problems with existing joining systems, where either or both a lack of strength was found in the joint between two adjacent floor panels or where an excessive material stress is generated during the joining procedure. *Id.*, 1:25-54. Naturally, a lack of strength in the joint could cause problems with gaps, such as relative movement and creaking noises when the floor is subjected to normal use. *Id.* Excessive material stress, particularly uncontrolled positioning of such material stresses, during joining of floor panels increases the risk of breakage. *Id.*

Additionally, keeping the material stress low during the joining procedure, while not allowing the joint strength to be reduced in the joined state, is central to expanding the compatibility of the joining system with floor panels having variations in material characteristics. For example, a brittle, low elastic material in

the joining system is typically less forgiving for high material stresses and elastic deformation than a more ductile material. So providing a joining system that is suitable for variations in material properties is a challenging engineering task. This is even more so when taking into account that the joining system should not be overly complex to manufacture, ideally allowing use of conventional manufacturing methods.

In setting out to solve this problem, the inventors arrived at the inventions described and claimed in the '425 Patent. Referring to Figure 3, reproduced below, the inventors of the '425 Patent discovered that dual consecutive locking lugs 130, 140 and corresponding dual consecutive locking recesses 80, 90, arranged and configured as illustrated for example in Figure 3, and recited in the '425 Patent claims, provided significant improvement over prior art solutions in the aforementioned aspects. *Id.*, 3:15-24. Figure 3 illustrates a side view of the profile contours of the joining system for two adjacent joined floor panels. *Id.*, 3:52-55.

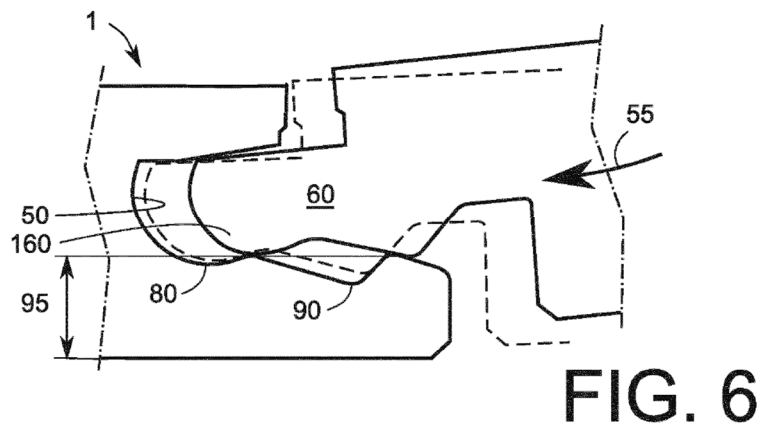


EX1001, FIG. 3.

Specifically, in the invention of the '425 Patent, the horizontal locking function of the joining system is divided between two sets of corresponding locking recesses and locking lugs. This provides benefits in several aspects, first and foremost making the horizontal locking stronger than conventional joining systems. *Id.*, 3:15-24, 5:27-31. Furthermore, it allows the locking recesses 80, 90 to be shallower without compromising the horizontal locking strength in the joint, thus enabling the lower portion 95 of the groove 50 to be thicker and more uniform and therefore more robust. *Id.*, 5:30-37. The first locking lug 130 extends downwardly from a lower tip portion 160 of the tongue 60 and the second locking lug 140 extends downwardly from a root portion 170 of the tongue 60, while the first locking recess 80 is arranged in an internally extending portion 100 within the groove 50 and the second locking recess 90 is located in a lip portion 110

protruding from an entrance opening 120 of the groove 50. *Id.*, 9:2-5. Thus, strong horizontal locking is achieved due to elastic compression of the material of the coupling parts generating a tension force pulling the coupling parts against each other. *Id.*, 2:5-9. As described in the '425 Patent, the first locking recess 80 and the first locking lug 130 are provided with matching curved horizontal locking surfaces 180, 190. *Id.*, 5:21-23, 9:12-13. Additionally, the second locking recess 90 and the second locking lug 140 are provided with matching inclined locking surfaces 200, 210. *Id.*, 5:24-26.

Figures 6 and 7 of the '425 Patent, reproduced below, illustrate how the claimed invention functions to allow both angled movement (Fig. 6) and straight horizontal movement (Fig. 7) as the insertion movement when joining the floor panels together, as required depending on the situation when laying the floor panels. *Id.*, 4:1-15, 6:55-7:10.



EX1001, FIG. 6.

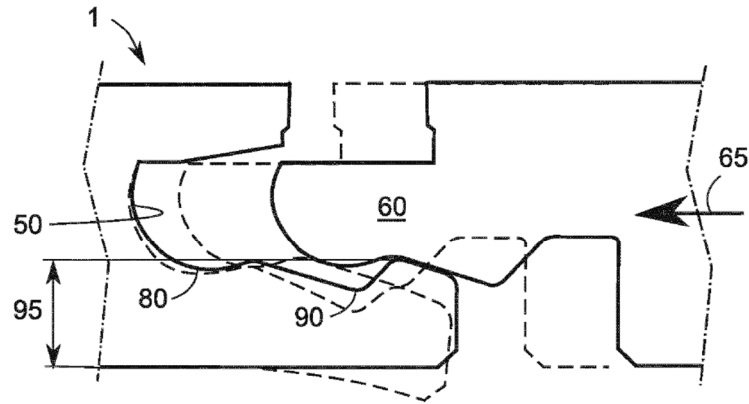


FIG. 7

EX1001, FIG. 7.

As discussed, the inventors of the '425 Patent discovered that the features recited in elements [1.5] through [1.9] provided an improvement over prior art solutions, and the '425 Patent's combination of at least these features represents a significant advancement in the art.

B. Prosecution History

The '425 Patent was filed as Patent Application No. 17/052,836 (the "'836 Application") on November 4, 2020 and issued on August 23, 2022. EX1001, (21), (45), (86). The '836 Application was the U.S. National Phase of International Application No. PCT/EP2019/061431, filed on May 3, 2019, which claims priority to Swedish Application No. 1830152-3, filed on May 4, 2018. EX1001, (22), (30), (86). International Application No. PCT/EP2019/061431 was published on November 7, 2019 as International Publication No. WO 2019/211460 A1. EX1001, (87).

On December, 7, 2021, the Office issued a first non-final office action.

EX1003, 109-118. The Examiner rejected all claims, i.e., claims 1-15, under 35 U.S.C. § 112(b) as allegedly being indefinite and under 35 U.S.C. § 102(a)(1) as allegedly being anticipated by U.S. No. 2002/0020127 to Thiers *et al.* (“Thiers”). EX1003, 112-116. Thiers discloses a floor covering formed of hard panels which are provided at least on two opposite edges with coupling devices made in one piece with the panels. The prior art made of record by the Examiner also included U.S. Patent No. 7,441,384 to Miller *et al.* (“Miller,” EX1004) and U.S. Patent No. 6,216,409 to Roy *et al.* (“Roy,” EX1005). EX1003, 118.

On February 7, 2022, Applicant/Patent Owner, Vilox AB, filed amended claims 1 through 15 in response to the indefiniteness rejections and explained that the anticipation rejection was in error because it was premised on a misinterpretation of the applied embodiment of Thiers. EX1003, 94-104. Specifically, Applicant argued that “[s]ignificantly absent from Thiers structure are [the ’425 Patent’s] claimed dual consecutive locking recess and dual consecutive locking lugs.” EX1003, 100.

On February 15, 2022, Applicant filed a supplemental amendment, submitting a set of replacement claims, which were substantively the same. EX1003, 85.

In response, on April 5, 2022, the Examiner issued an Ex parte Quayle action requiring an abstract, but allowing claims 1-15. Notably, having cited both Miller and Roy, the Examiner stated the reasons for allowance as follows:

no prior art discloses combination structures for a joining system, which including dual consecutive locking lugs arranged in a lower portion of the tongue for horizontally interlocking engagement in the groove, a first locking lug extending downwardly from a lower tip portion of the tongue and a second locking lug extending downwardly from a root portion of the tongue, the first locking recess and the first locking lug are provided with matching curved horizontal locking surfaces and the second locking recess and the second locking lug are provided with matching inclined horizontal locking surfaces as set forth in the claims.

EX1003, 75-79¹.

On June 10, 2022, the Examiner issued a Notice of Allowance, confirming that the indefiniteness and prior art rejections had been successfully traversed.

EX1003, 7-11. Accordingly, having considered the disclosures of Thiers, Miller, and Roy, among others, the Examiner could not find any prior art disclosure showing a joining system including elements [1.5] through [1.9] as discussed above.

¹ Emphasis added throughout unless otherwise indicated.

C. Claim Construction

Petitioner submits that the claim terms should be accorded their plain and ordinary meaning and do not require further construction by the Board. Pet., 6-7. For purposes of this Preliminary Response, Patent Owner does not otherwise believe that any claim terms need construction to resolve the prior art grounds raised in the Petition.

D. Level of Ordinary Skill in the Art

For the purposes only of this Preliminary Response, Patent Owner applies Petitioner's definition of a POSITA. *See* Pet., 6.

III. SUMMARY OF THE PETITION'S APPLIED REFERENCES, WHICH WERE CONSIDERED BY THE EXAMINER DURING PROSECUTION

A. Miller (EX1004)

Miller is entitled "Pre-glued tongue and groove flooring." EX1004, (54). Miller relates "generally to floor covering panels for use in commercial, industrial or residential environments. More particularly, this invention relates to a floor covering panel having complementary coupling members with an adhesive composition applied to at least one location on at least one coupling member, where the adhesive composition may be pre-applied to the floor covering panel." EX1004, 1:7-13.

Miller identifies a problem with existing interference fit or snap-locking fit products, namely that existing technologies at the time which did not use adhesives

were likely to “create problems relating to the integrity of the joint. For example, the mechanical locking mechanisms may wear over time thereby reducing the locking force and resulting in play and visible gaps between the panels. Furthermore, the strength of some such joints may be noticeably less than that of products having adhesive applied within the joints.” EX1004, 1:40-50.

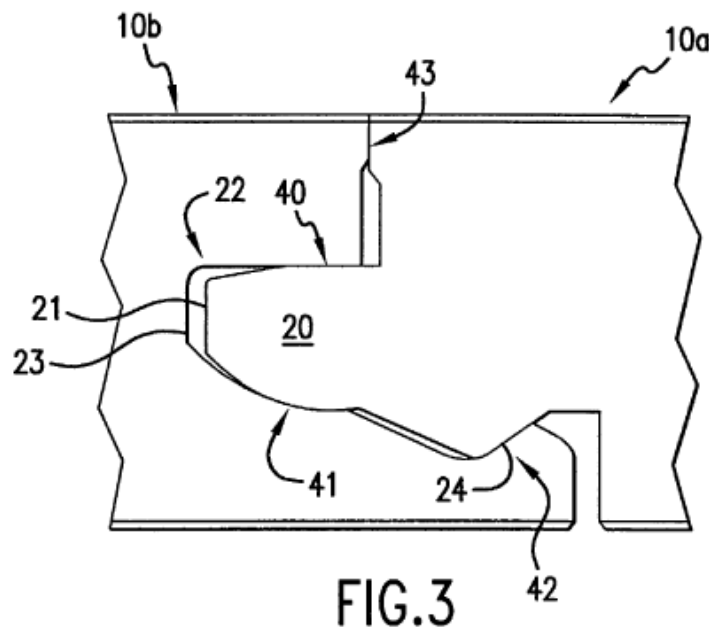
To solve these issues, Miller proposes “a laminate floor covering panel, comprising ... a first coupling member defined within the first edge of the panel and comprising a protrusion extending therefrom, a complementary second coupling member defined within the second edge of the panel and comprising a recess sized and shaped to receive said protrusion therein; and ... *a self activating adhesive composition* ... applied to at least a portion of at least one of the first and second coupling members.” *Id.*, 14:15-29.

Miller is clear that its solution is based on an apparent realization that joining systems based on mechanical locking alone are inadequate, and that the solution to this problem is the provision of a pre-applied self-activating adhesive to secure the floor panels to each other. *Id.*, 1:40-59.

Petitioner ignores this important fact—that Miller describes its invention as the *self-activating adhesive*. Despite Petitioner’s contentions otherwise, the adhesive in Miller is not optional, but rather is “selectively applied” only to the intended areas of application. *See, e.g.*, EX1004, 3:5-8, 5:58-6:40. The mechanical

joining system present in Miller is for illustrative purposes and Miller also points to the prior art joining system disclosed in U.S. Patent No. 6,006,486 to Moriau *et al.* (“Moriau,” EX1006) as an example. EX1004, 4:54-59; *see also id.*, 3:11-26.

The mechanical joining functionality of the coupling members in Miller are described in relation to Figures 2 and 3, which show the same embodiment of floor covering panels in a disconnected and in a connected state, respectively. *Id.*, 2:40-44. Referring to Figure 3, reproduced below, Miller explains “contact is made between the complementary coupling members 20, 22 of the two panels 10a, 10b in four contact zones [40, 41, 42, 43] as shown in FIG. 3.” *Id.*, 5:13-15; *see id.*, 5:15-36.



EX1004, FIG. 3.

Miller describes that “[c]ontact zones 40 and 41 help locate the panels into substantially the same horizontal plane.” *Id.*, 5:13-19. It is clear from this disclosure that the *vertical* locking/positioning is achieved by the protrusion 21 at contact zones 40, 41.

As for Miller’s teachings regarding mechanical *horizontal* locking/positioning, excluding the adhesive component, Miller refers only to contact zone 42: “The rib 30 (FIG. 2) of panel 10a engages the detent 32 of panel 10b at contact zone 42.” *Id.*, 5:19-20. Miller continues:

The angle formed by the substantially planar contact zone 42 and the substantially planar second surface 12 forms an acute angle therebetween, when measured from the second surface 12 counterclockwise to the plane of the contact zone 42. This configuration ensures that the contact force between the adjacent panels 10a, 10b at the contact zone 42 urges the panels together and promotes a tight joint. This locking structure *defined by the rib 30 of panel 10a and the detent 32 of panel 10b prevents substantial separation of the two panels 10a and 10b in a direction perpendicular to the side edges 13, 14 of the panels 10a, 10b and parallel to the respective first surfaces 11.*

Id., 5:23-34.

This description highlights that the function of the mechanical coupling members disclosed in Miller are of the type which the inventors of the ’425 Patent

set out to improve. *See* EX1001, 1:27-46. Any other interpretation of Miller’s teachings is based on impermissible hindsight in view of the ’425 Patent claims.

In fact, as noted above, Miller references Moriau as the example of the coupling members for adjoining adjacent panels for use with the invention. EX1004, 4:54-59. Yet Moriau is also referenced as technology on which the ’425 Patent sets out to improve. EX1001, 1:25-55 (citing EP 1338721, EX1008²). Moriau is further referenced in Thiers, which was applied by the Examiner in prosecution, in describing the embodiment of Figure 4 therein. EX1007, ¶104. Both Miller and Thiers teach the same joining technology as that described as being improved upon in the ’425 Patent.

B. Roy (EX1005)

Roy is entitled “Cladding panel for floors, walls or the like.” EX1005, (54). Roy teaches a “cladding panel ... having ... on one edge a longitudinal tongue and on the other edge a longitudinal groove between a top lip and a bottom lip.” EX1005, 1:5-9. Each of the tongue and groove has a respective cross section that is complementary such that the tongue can be inserted into the groove of an adjacent panel. EX1005, 1:9-13.

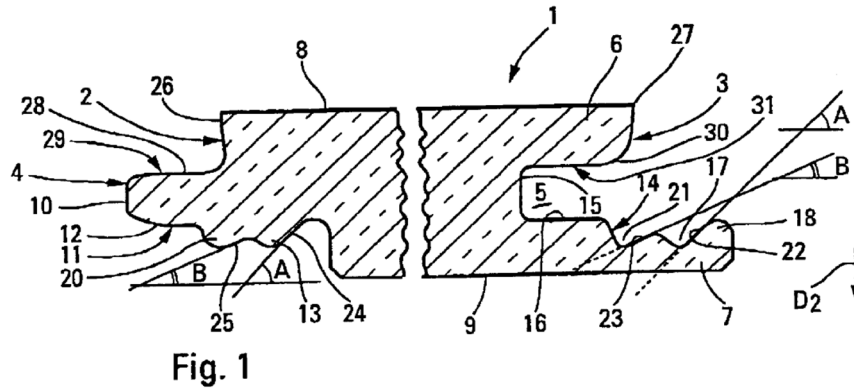
² EP 1338721 is related to Moriau and claims priority to the same Belgian priority applications.

Roy sets out to solve a problem identified in prior art solutions exemplified by WO97/47834 (international phase application of Moriau), which is described as unsatisfactory elastic loading occurring simultaneously in two perpendicular directions, which is necessarily a relatively small fraction of the loading force. EX1005, 1:51-55. Additionally, dry assembly in prior art solutions, i.e. without glue, does not appear, according to Roy, to provide satisfactory sealing against dust and liquids. EX1005, 1:56-58.

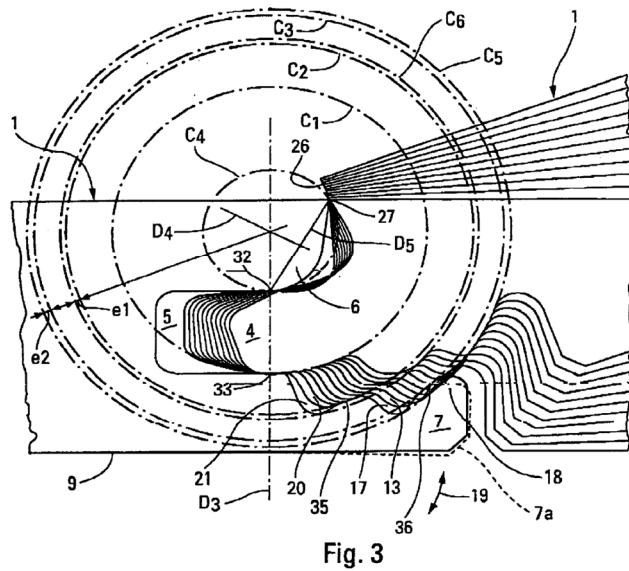
The solution to these problems, according to Roy, is to provide a cladding panel that “in cross section, the tongue has on its bottom face and the bottom lip of the groove has on its top face, respectively, a second raised portion projecting downward and a complementary second recess shaped so that the second raised portion of the tongue of one panel inter-engages with the second recess of the groove of an adjacent panel when one panel is turned relative to the other, so as to form second means of clipping the tongue into the groove.” *Id.*, 2:1-8. Such a solution provides improved dust and liquid sealing. *Id.*, 2:9-12. Additionally, the horizontal strength of the assembly is increased. *Id.*, 2:22-25.

Referring to Figures 1-3 of Roy (Figures 1 & 3 reproduced below), a POSITA would more specifically understand that Roy teaches a tongue 4 and a groove 5 where the tongue 4 is “adapted to be inserted into the groove 5 of an

adjacent panel 1 by rotating one panel relative to the other, as shown
diagrammatically in FIG. 3.” *Id.*, 2:63-67.



EX1005, FIG. 1.



EX1005, FIG. 3.

With continued reference to Roy’s Figures 1-3, Roy also teaches a first
raised portion 13 and a second raised portion 20 both arranged on an underside of

the tongue 4. Correspondingly, a first recess 17 and a second recess 21 are provided in a top face 14 of the bottom lip 7.

The groove 5 further comprises on its top face 14 a “first section 16 on which the first section 12 of the tongue 4 rolls and slides.” *Id.*, 3:27-29. The tongue 4 comprises a substantially circular first section 12, followed by (as seen from the distal end of the tongue 4) the second downwardly projecting raised portion 20 and the first downwardly projecting raised portion 13. *Id.*, 3:23-26.

Moreover, Roy teaches that “the exterior sides 22, 23 of the first and second recesses 17, 21 and the interior sides 24, 25 of the first and second raised portions 13, 20 are substantially rectilinear and respectively form substantially equal first angles A and substantially equal section angles B with the bottom face 9 of the corresponding panel 1. The angles A and B define the respective positions of the points of contact 35 and 36 on the circles C3 and C2.” *Id.*, 4:26-31, FIG. 3. The points of contact 35 are thus between rectilinear contact surfaces in the recesses and on the first and second raised portions, respectively.

With regards to the tongue 4, Roy further teaches that “the points 32, 33 are points of contact at which a slight clearance is provided to facilitate insertion of the tongue 4 into the groove 5 without significantly deforming the bottom lip 7 at the point 33 so that the elastic deformation of said bottom lip 7 is entirely reserved for the clipping and clamping functions at the points 35 and 36.” *Id.*, 5:31-36. The

tongue 4 is thus free from interference with the groove 5. Moreover, Roy teaches that “the bottom face 31 of the top lip 6 and the top face 14 of the bottom lip 7 are parallel to the main faces 8, 9 of the panel 1 at the respective points of contact 32, 33 with the corresponding faces 29, 11 of the tongue 4 in the assembled position.” *Id.*, 4:39-44. In other words, Roy teaches that the tongue and the groove should have top and bottom surfaces both being parallel to each other and to the top and bottom surface of floor panel. A clearance should also be present, to facilitate insertion of the tongue. *Id.*, 5:31-35.

IV. THE BOARD SHOULD EXERCISE DISCRETION TO DENY INSTITUTION UNDER 35 U.S.C. § 325(D) BECAUSE THE PETITION RELIES UPON THE SAME ART AND ARGUMENTS CONSIDERED AND OVERCOME DURING PROSECUTION AND PETITIONER DOES NOT ESTABLISH ANY MATERIAL ERROR.

The Petition relies on two prior art references—Miller and Roy—*both* of which were cited by the Examiner during examination. EX1003, 118. Despite recognizing that the references asserted in the Petition were cited by the Examiner during prosecution, Pet., 4, Petitioner fails to engage in the required § 325(d)/*Advanced Bionics* analysis or otherwise attempt to address § 325(d) in the Petition.³ The first part of *Advanced Bionics* is indisputably satisfied; and as to the

³ Petitioner clearly recognized, or at least should have recognized, the applicability of § 325(d). Patent Owner respectfully submits that Petitioner should

second part, Petitioner does not even attempt to explain how the Office, having considered both Miller and Roy, erred in a manner material to the patentability of challenged claims. Accordingly, the Board should exercise its discretion to deny institution.

First, the Petition's assertion of prior art that was already considered—and substantially equivalent to the art applied during examination—is exactly the type of challenge to patentability that § 325(d) provides discretion to deny. The art and arguments presented by Petitioner are the same or substantially the same as those previously presented to the Office. Thus, Part One is satisfied because the Petition relies on the same or substantially the same (cumulative) art that was considered by the Office during original prosecution.

Second, Petitioner does not even allege Examiner error in considering these references, and as discussed herein, there was none. The asserted art is insufficient to render the challenged claims either anticipated or obvious. Thus, as for Part Two, Petitioner fails to provide any evidence of material error on behalf of the

not be given the opportunity to submit additional briefing on this issue. Given the complete lack of discussion in the Petition, to allow Petitioner additional briefing after the Preliminary Response would reward Petitioner's gamesmanship.

Examiner during prosecution and, instead, presents grounds in the Petition that are either an intentional misinterpretation or a misunderstanding of the cited art.

A. The Two-Part *Advanced Bionics* Framework

The Director has the discretion to deny institution when a petition presents “the same or substantially the same prior art or arguments [that] previously were presented to the Office.” 35 U.S.C. § 325(d). To evaluate whether such a denial is appropriate, the Board determines, as established in the precedential *Advanced Bionics* decision:

(1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and

(2) if either condition of the first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

Advanced Bionics v. Med-El Elektromedizinische Geräte GMBH, IPR2019-01469, Paper 6, 7-11 (P.T.A.B. Feb. 13, 2020) (precedential).

In applying this two-part framework, the Board evaluates several non-exclusive factors established in *Becton, Dickinson & Co. v. B. Braun Melsungen AG*, IPR2017-01586, Paper 8 at 17–18 (PTAB Dec. 15, 2017) (precedential as to Section III.C.5, first paragraph), including:

(a) the similarities and material differences between the asserted art and the prior art involved during examination;

(b) the cumulative nature of the asserted art and the prior art evaluated during examination;

(c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection;

(d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art;

(e) whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art; and

(f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments.

Becton, Dickinson factors (a), (b), and (d) relate to the first part of the *Advanced Bionics* framework (i.e., whether the art or arguments presented in the Petition are the same or substantially the same as those previously presented to the Office). *Advanced Bionics*, Paper 6 at 10. Critically, *Advanced Bionics* instructs that “[p]reviously presented art includes art made of record by the Examiner, and art provided to the Office by an applicant, such as on an Information Disclosure Statement (IDS), in the prosecution history of the challenged patent.” *Id.*, 7-8.

Following this guidance, Board panels have routinely held that art made of record by either the Examiner or applicant during prosecution but not applied in a rejection satisfies the first part of the *Advanced Bionics* framework. *See, e.g., Ivantis, Inc. v. Sight Sciences, Inc.*, IPR2022-01529, Paper 16, 17 n.8 (P.T.A.B. Mar. 21, 2023) (explaining that “there is no requirement that [the] Examiner needs to rely on a reference in a rejection during prosecution in order for the reference to be ‘considered’ during prosecution” and citing *Advanced Bionics*); *Boragen, Inc. v. Syngenta Participations AG*, IPR2020-00124, Paper 16, 21-22 (P.T.A.B. May 5, 2020) (denying petition under § 325(d) and explaining that “a rejection applying a reference that is later relied upon by a petitioner is not a prerequisite to a finding that such reference was already presented to the Office under § 325(d).”).

Becton, Dickinson factors (c), (e), and (f) relate to the second part of the *Advanced Bionics* framework (i.e., “whether the petitioner has demonstrated a material error by the Office” in its prior consideration of the prior art or arguments). *Advanced Bionics*, Paper 6 at 10. *Importantly, the petitioner carries the burden of demonstrating material error*: “[i]f a condition in the first part of the framework is satisfied and the petitioner fails to make a showing of material error, the Director generally will exercise discretion not to institute *inter partes* review.” *Id.*, 8–9 *see also Becton, Dickinson*, 17-18 (explaining that factor (e) asks “whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of

the asserted prior art”); *Microsoft Corp. v. AlmondNet, Inc.*, IPR2022-01319, Paper 9, 11 (P.T.A.B. Jan. 30, 2023) (denying institution under § 325(d) where Petitioner did not sufficiently address whether the Office materially erred); *Microsoft*, IPR2022-01319, Paper 14 (P.T.A.B. Apr. 23, 2023) (denying Petitioner’s rehearing request of decision denying institution). Notably, “[i]f reasonable minds can disagree regarding the purported treatment of the art or arguments, it cannot be said that the Office erred in a manner material to patentability.” *Advanced Bionics*, Paper 6 at 9. “[T]his framework reflects a commitment to defer to previous Office evaluations of the evidence of record unless material error is shown.” *Id.*

B. *Advanced Bionics* Part One is satisfied because the Petition presents the same or substantially the same art and arguments that were previously considered by the Office.

1. Miller and Roy were both considered by the Examiner.

The teachings of both asserted references, Miller and Roy, were undeniably considered by the Examiner during prosecution. EX1001, (56) (Miller and Roy both cited on the face of the patent, and were “cited by examiner”). Moreover, Miller and Roy were used as a basis for citation searches by the Examiner, EX1003, 123-124, further indicating that these references were indeed considered by the Examiner. Petitioner implies that these references were not considered because “the Examiner did not further discuss or reference Miller or Roy,” beyond inclusion on the search results. Pet., 4. Petitioner’s argument is misguided. Explicit

discussion of the references by the Examiner is not what is required under *Advanced Bionics*. *Advanced Bionics*, 8. The precedential *Advanced Bionics* decision clearly instructs that “[p]reviously presented art includes art made of record by the Examiner,” *Advanced Bionics*, 7-8, such as the Examiner’s citation of Miller and Roy here during prosecution of the ’425 Patent. *See also Ivantis*, 17 n.8; *Boragen*, 21-22. Thus, for this reason alone, Part One of the *Advanced Bionics* framework is clearly met.

2. *Becton, Dickinson* factors (a), (b), and (d) all favor denial of institution.

To determine whether a petition asserts the same or substantially similar art or arguments as those previously considered by the Office, the Board looks to *Becton, Dickinson* factors (a), (b), and (d). *Becton, Dickinson* factor (a) considers “the similarities and material differences between the asserted art and the prior art involved during examination,” factor (b) considers “the cumulative nature of the asserted art and the prior art evaluated during examination,” and factor (d) considers “the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art.” *Becton, Dickinson*, Paper 8 at 17–18.

As noted above, the *exact same art was considered* during prosecution here, so *Advanced Bionics* Part One is satisfied. Moreover, precedent does not require the exact same art to have been considered in prosecution. Rather, § 325(d) also

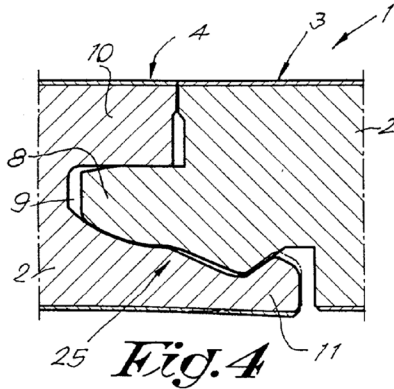
applies when substantially the same prior art was previously presented. Prior art may be considered substantially the same art as that presented during prosecution where the petition fails to show “significant and material differences between the prior art asserted in th[e] Petition and the prior art evaluated during prosecution.”

Advanced Bionics, Paper 6 at 19. In such instances, the Board looks to whether the cited references are relied on by the Petition in “substantially the same manner as the Examiner cited” references during prosecution. *Id.*, 17. Where the Examiner finds the original reference “discloses the same limitation for which Petitioner relies on” the new reference, both “disclos[e] substantially the same information already considered by the Office,” making the new reference “substantially the same art as” the original reference. *Id.* at 17–18. These criteria are *also* met here (although not required) because the disclosures relied upon from Miller in the Petitioner are substantially the same as those relied upon by the Examiner from Thiers.

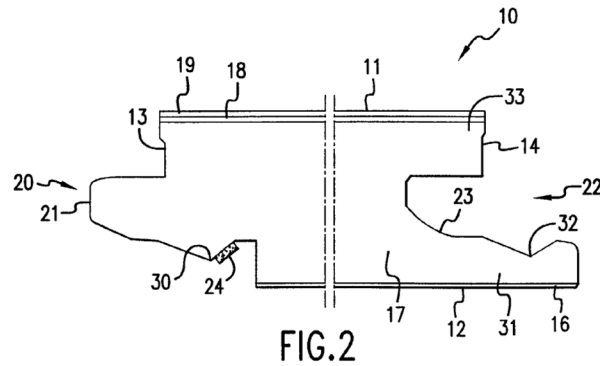
The Examiner applied Thiers (EX1007) in a rejection against the claims during prosecution. EX1003, 113-116. Pointing to the embodiment shown in Figures 19-23, the Examiner rejected the claims. EX1003, 114-115. But, as successfully argued by Applicant in the response to the rejection, this embodiment fails to teach several elements of claim 1 of the '425 Patent. EX1003, 100-101. More particularly, as the Examiner indicated, “no prior art,” including Thiers,

discloses the dual consecutive locking lugs and recesses arranged as recited in claim 1. EX1003, 77-78.

The actual profile of the coupling members disclosed in Miller (see Figure 2 below right) is for all intents and purposes identical to the embodiment disclosed in Figure 4 of Thiers (below left). Thus, Thiers Figure 4 discloses coupling members with a profile that is plainly *cumulative of* the coupling members' profile disclosed in Miller.



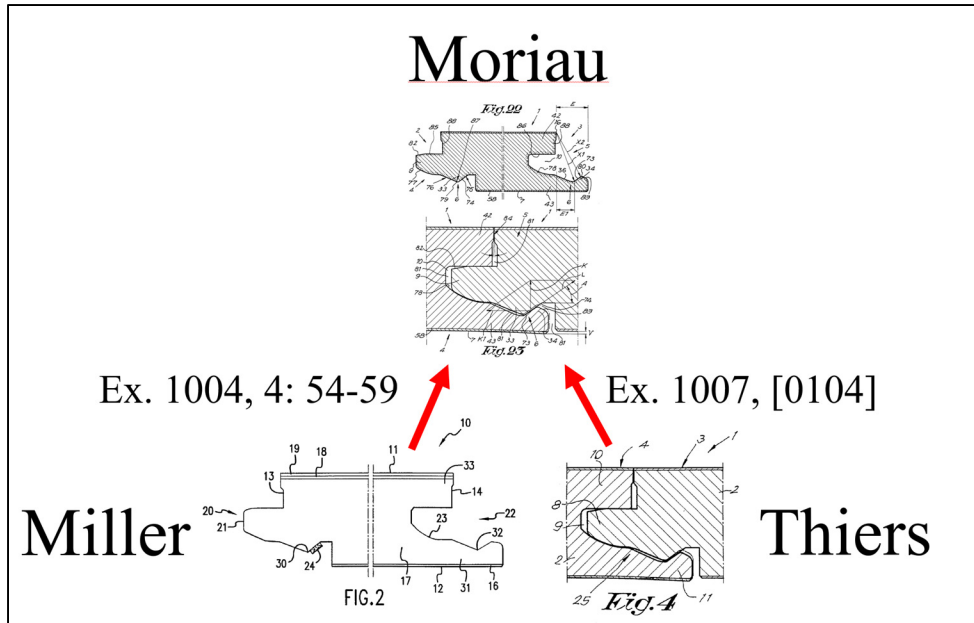
EX1007, FIG. 4.



EX1004, FIG. 2.

That these disclosures are cumulative of each other is further evidenced by the fact that both Miller and Thiers include statements that the profiles therein are of the same type as previously disclosed in Moriau (EX1006). EX1004, 4:54-59; EX1007, ¶104⁴.

⁴ Roy also refers to Moriau in describing the related art. EX1005, 1:31-35.



This apparent “similar[ity]” of the Thiers Figure 4 embodiment and Miller is also acknowledged by Petitioner. Pet., 5.

Factors (a), (b), and (d) support denial of institution, as discussed in more detail in the following.

(a) the similarities and material differences between the asserted art and the prior art involved during examination: Notwithstanding Petitioner’s assertion of already cited prior art in Miller and Roy which in itself meets factor (a), Miller’s teachings are cumulative to Thiers, which was substantively discussed by the Examiner during prosecution. Petitioner admits this, Pet., 5, and the similarity of Thiers’s and Miller’s disclosures is further supported by the respective reference to Moriau in both Thiers and Miller when describing their profiles. Any difference that the Petitioner alleges exists in the profiles between Thiers and Miller is

incorrect. Roy was cited by the Examiner but not substantively discussed during prosecution. Nevertheless, it cannot be doubted that the Examiner considered Roy based on its inclusion in the references cited. As is further discussed below, Roy falls short of rendering claim 1 obvious (in combination with Miller) in much the same way that Thiers did during examination.

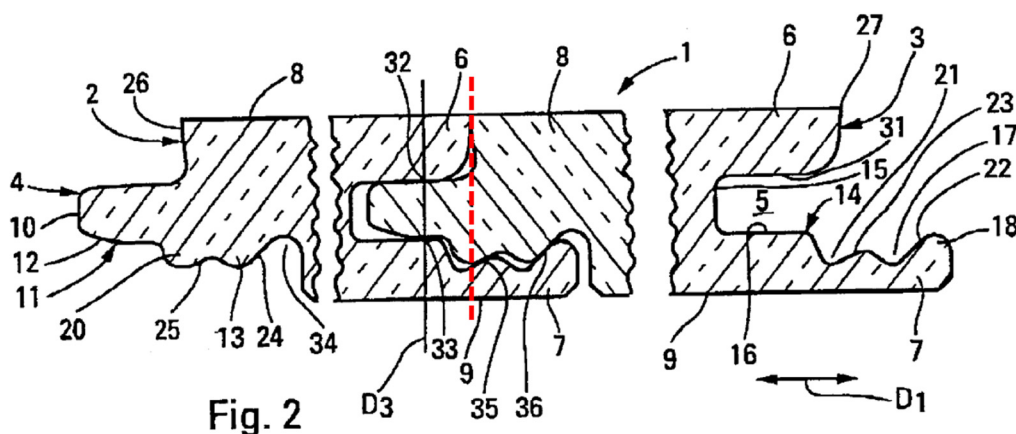
Factor (a) thus favors denial.

(b) the cumulative nature of the asserted art and the prior art evaluated during examination: Miller is cumulative to the disclosures of Thiers as evidenced by the mutual reference to Moriau as an equivalent profile, as discussed above.

Petitioner further asserts Roy in combination with Miller and claims this would render the '425 Patent obvious. As already established, Miller shows the same profile/contours of the mechanical locking system in Moriau. Roy also refers to Moriau as a prior art solution that it sets out to improve because according to Roy, Moriau creates undesirably and uncontrollably high forces during and after assembly of the two adjacent floor panels. EX1005, 1:31-35. Roy's proposed solution desires to improve control of predetermined loads between two adjacent panels and to improve the seal against dust and liquids. EX1005, 1:60-65. Roy thus provides two raised portions on the tongue and two recesses in the groove, but these features are in a different configuration than the '425 Patent claims. Namely, in Roy, the raised portions are both arranged on the root of the tongue and no

recess is arranged in an internally extending portion of the groove. *See, e.g.*, EX1005, FIGs. 1, 2.

Moreover, Roy, like Miller, Thiers, and Moriau, teaches that the contact points on the tip of the tongue portion are for vertical positioning and guiding of the joining movement. Roy specifically states that “[t]he points 32, 33 are points of contact at which a slight clearance is provided to facilitate insertion of the tongue 4 into the groove 5 without significantly deforming the bottom lip 7 at the point 33 so that the elastic deformation of said bottom lip 7 is entirely reserved for the clipping and clamping functions at the points 35 and 36.” EX1005, 5:30-36. And as shown in the annotated version of Roy’s Figure 2 below, Roy fails, as does Miller, Thiers, and Moriau, to teach at least elements [1.6], [1.7], [1.8], and [1.9] of claim 1 of the ’425 Patent because there is no locking recess located in an internally extending portion within the groove.

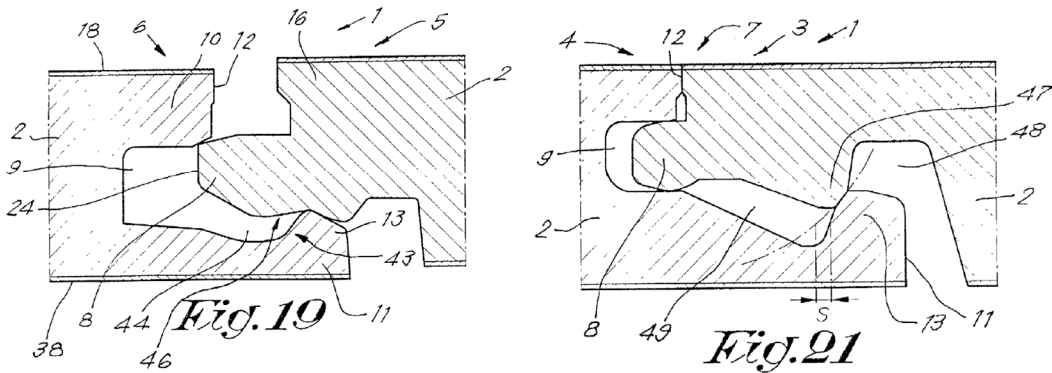


EX1005, FIG. 2 (annotated).

Roy also explicitly teaches against element [1.4] of claim 1 of the '425 Patent, as it is explained that “the bottom lip 7 is adapted to bend elastically outward, as symbolized by the arrow 19, to allow the raised portion 13 to pass over the bead 18 and then to resume substantially its unstressed position to retain the tongue 4 in the groove 5.” EX1005, 3:32-36.

All of these prior art documents are, thus, similar representations of prior art on which the inventors of the '425 Patent set out to improve. Miller and Roy were both cited by the Examiner, and are at least cumulative to the prior art teachings expressly evaluated during prosecution. Factor (b) thus favors denial.

(d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art: As established, Miller’s teachings are the same as those of the embodiment in Figure 4 of Thiers. This embodiment was not explicitly relied upon during examination, but the arguments made by the Examiner regarding Theirs’s Figures 20-23 and also the embodiment of Figure 19 (shown below), EX1003, 114-115, significantly overlap the arguments that the Petition presents regarding Miller and Roy.



EX1007, FIGs. 19, 21.

As already established, Miller and Roy are equivalent, or at least substantially similar, prior art references to Thiers. And the arguments presented by both the Examiner and Patent Owner during examination are likewise applicable to Miller and Roy. In particular, as argued by Applicant during prosecution with respect to Thiers, *see* EX1003, 100-101, neither Miller nor Roy discloses or suggests at least the claimed first locking recess (of dual consecutive locking recesses) having a curved horizontal locking surface and located in an internally extending portion within the groove.

Accordingly, the arguments in the Petition significantly overlap those made by the Examiner during examination. Factor (d) thus favors denial.

Therefore, Part One of the *Advanced Bionics* framework is met because Miller and Roy were cited and considered by the Examiner during prosecution. Further, *Becton, Dickinson* factors (a), (b), and (d) all support denial of institution.

C. The Petition fails to establish, or even discuss, any material error under *Advanced Bionics* Part Two.

The prior art applied by Petitioner is the same as art considered during examination. And Petitioner fails to identify an Examiner error material to the patentability of the challenged claims. Indeed, the Petition does not provide any facts or evidence beyond what the Examiner considered during prosecution. Accordingly, under *Advanced Bionics* Part Two, Petitioner fails entirely to meet its burden to establish Examiner error that would warrant reconsideration of Miller and Roy, which were already considered during prosecution.

To show material error, the Board looks to *Becton, Dickinson* factors (c), (e), and (f). This analysis “reflects a commitment to defer to previous Office evaluations of the evidence of record unless material error is shown.” *Advanced Bionics*, Paper 6 at 9. Those factors consider (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection; (e) whether Petitioner has pointed out sufficiently how the examiner erred in its evaluation of the asserted prior art; and (f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments. *Id.* at 9 & n.10; *Becton, Dickinson*, Paper 8 at 17–18. Material error is not found, for example, where “reasonable minds can disagree regarding the purported treatment of the art or arguments.” *Advanced Bionics*, Paper 6 at 9.

The Petition has not identified any material error. No new art is relied on in the Petition. Both Miller and Roy were cited by the Examiner during examination. And, the Examiner expressly discussed Thiers, which is cumulative to Miller's teachings as discussed above.

Petitioner incorrectly asserts that Miller discloses a profile different than what is shown in Figure 4 of Thiers. However, this assertion can immediately be determined to be incorrect since Thiers and Miller both reference the profiles in Moriau, as discussed above. Moreover, Roy comes no closer to the invention of the '425 Patent and Petitioner's combination of Miller and Roy is based on a misinterpretation of Miller and hindsight analysis, as discussed below regarding the Petition grounds.

Accordingly, no evidence or information presented in the Petition shows material error to warrant reconsideration of the Examiner's analysis during examination of the '425 Patent. As discussed below, *Becton*, *Dickinson* factors (c), (e), and (f) all support denial of institution.

Factor (c) requires evaluation of "*the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection.*" As already established, Thiers, Moriau, and Miller are cumulative prior art references as to the '425 Patent claims. Thiers was expressly applied, discussed, and overcome by Patent Owner during examination. So the relevant substance of

the asserted art (Miller) was evaluated during examination—both because the Examiner cited Miller and because it is cumulative to Thiers. Miller fails to show the same elements of claim 1 of the '425 Patent that are missing from Thiers (and Moriau), and no new arguments are presented in the Petition that are different from those presented during examination. Roy also was cited by the Examiner and as shown herein, Roy adds nothing to bring into question the analysis or decisions of the Examiner during examination. Thus, factor (c) favors denial.

Factor requires (e) evaluation of “*whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art.*” Petitioner acknowledges the Examiner’s reliance on Figures 19-23 in Thiers during examination. Pet., 4-5. Petitioner further acknowledges that Figure 4 in Thiers is “similar” to Miller, and does not allege the Examiner erred in the consideration of Thiers. *Id.*

Regarding Roy, Petitioner does not explain how this reference has significance to the patentability of claim 1 of the '425 Patent in a manner that was not already taken into consideration by the Examiner. The '425 Patent was allowed because, according to the Examiner, no prior art document, including Roy, which the Examiner considered, discloses: “combination structures for a joining system, which including dual consecutive locking lugs arranged in a lower portion of the tongue for horizontally interlocking engagement in the groove, a first locking lug

extending downwardly from a lower tip portion of the tongue and a second locking lug extending downwardly from a root portion of the tongue, the first locking recess and the first locking lug are provided with matching curved horizontal locking surfaces and the second locking recess and the second locking lug are provided with matching inclined horizontal locking surfaces as set forth in the claims.” EX1003, 77-78.

As discussed herein, Roy does not show a first locking lug extending downwardly from a lower *tip portion* of the tongue and a second locking lug extending downwardly from a *root portion* of the tongue. Rather, Roy teaches both raised portions are provided on the *root* of the tongue. EX1005, FIG. 2. As further discussed herein, Roy also does not show a first locking lug and locking recess having matching curved horizontal locking surfaces. Rather, Roy teaches inclined rectilinear locking surfaces with different angles A and B. EX1005, 4:26-39. Moreover, neither Roy nor Miller teaches a first locking recess being arranged in an interiorly extending portion within the groove.

Accordingly, Petitioner does not present any convincing evidence that the Examiner made an error during the evaluation of the asserted prior art during examination. The Examiner did not err in considering the references because the asserted art does not disclose, teach, or suggest the elements of the claims. Thus, factor (e) favors denial.

Becton, Dickinson factor (f) requires evaluating “*the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments.*” As discussed above, Petitioner brings forward no new evidence or facts that would warrant reconsideration of the prior art.

In sum, Factors (c), (e), and (f) all favor denial and Petitioner has failed to establish material error under *Advanced Bionics* Part Two. Patent Owner therefore respectfully requests that the Board exercise its discretion to deny institution under 35 U.S.C. § 325(d) because the Petition relies upon the same or substantially the same art and arguments considered and overcome during prosecution and Petitioner has not established any material error.

V. PETITIONER FAILS TO DEMONSTRATE A REASONABLE LIKELIHOOD THAT ANY CHALLENGED CLAIM IS UNPATENTABLE.

“The Director may not authorize an inter partes review to be instituted unless the Director determines that the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). The Petition asserts two grounds relying on Miller and one ground relying on a combination of Miller and Roy. Ground 1 asserts the claims are anticipated by Miller, Ground 2 asserts the claims would have been obvious in view of Miller, and Ground 3 asserts the claims would have been obvious in view of Miller with

Roy. As discussed below, trial should not be instituted because the Petition's anticipation and obviousness analyses are deficient on several fronts. The Petition therefore fails to establish a reasonable likelihood that any challenged claim of the '425 Patent is unpatentable.

A. Ground 1: The challenged claims are not anticipated by Miller because Miller does not teach at least elements [1.5], [1.6], [1.7], [1.8], and [1.9] of Claim 1.

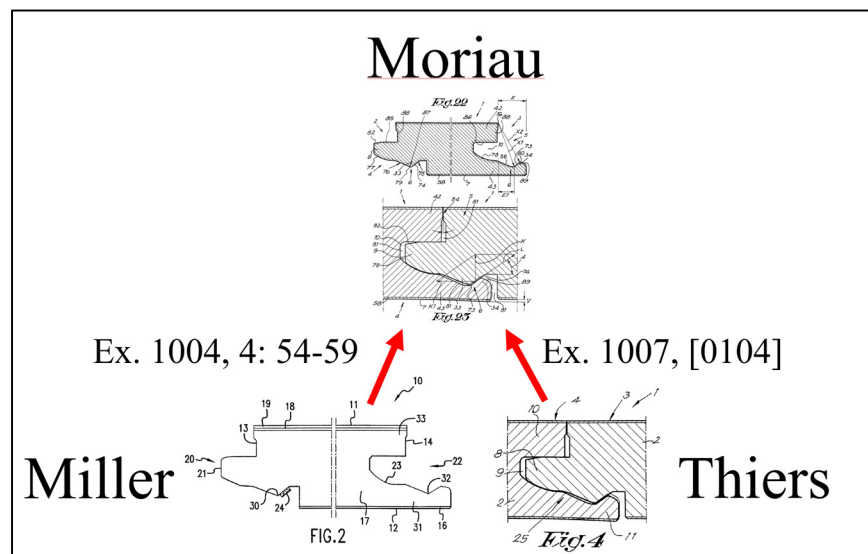
In Ground 1, Petitioner asserts that claims 1, 2, 5-12, and 15 of the '425 Patent are anticipated by Miller (EX1004). Pet., 9-34. In this ground, Petitioner applies the same reasoning that was presented by the Examiner (and overcome by Patent Owner) for Thiers during examination.

As described above, *supra* Section III.A, Miller is related to improving certain flaws in mechanical joining systems. EX1004, 1:31-51. The identified solution for achieving this goal in Miller is to provide an adhesive having a new composition and a new method of application whereby the strength of the attachment of adjacent floor panels can be improved. EX1004, 1:52-2:33.

Miller is not focused on the actual coupling profile disclosed therein. This is merely presented for illustrative purposes to show Miller's invention in an appropriate context. Miller explicitly states that its invention, i.e. the adhesive, can be applied to any present or future coupling profiles and further that the profile in Figures 2 and 3 is merely for illustrative purposes. EX1004, 5:45-57. Moreover, in

describing the coupling members shown in Figures 2 and 3, Miller refers to Moriau as providing further details of a profile of the same type. *Id.*, 4:54-59.

Petitioner comments on the prior art document Thiers, which was applied during examination of the '425 Patent. Petitioner focuses specifically on Figure 4, admitting it is “similar” to Miller. Pet., 5. However, Petitioner dismisses this similarity and asserts that “no embodiment of Thiers discloses dual locking recesses as disclosed in Miller.” Pet., 5. But Petitioner does not address the fact that, similar to Miller, Thiers describes its Figure 4 as being the same as that disclosed in Moriau. EX1007, ¶104. As noted above, *supra* Section III.A, both Miller and Thiers teach the same joining technology as that described as being improved upon in the '425 Patent, e.g., the coupling members described in Moriau.



Petitioner does not show a reasonable likelihood of success in proving that the challenged claims are anticipated by Miller.

Element [1.5] recites: “locking means for locking the tongue of the adjoining floor panel within the groove, wherein the locking means comprises dual consecutive locking recesses arranged in a lower portion of the groove.” Petitioner argues that Miller discloses dual consecutive locking recesses referring to Figure 3 in Miller along with an exaggerated curved arrow to try to illustrate this reasoning. *See* Pet., 14-18.

At the outset, Patent Owner notes that Miller provides no mention of any dual consecutive locking recesses in its specification. Rather, Miller discloses that *mechanical horizontal locking* is achieved by the rib 30 and detent 32 at contact zone 42. As described in Miller: “[t]he rib 30 (FIG. 2) of panel 10a engages the detent 32 of panel 10b at contact zone 42.” EX1004, 5:19-20. Miller continues:

The angle formed by the substantially planar contact zone 42 and the substantially planar second surface 12 forms an acute angle therebetween, when measured from the second surface 12 counterclockwise to the plane of the contact zone 42. This configuration ensures that the contact force between the adjacent panels 10a, 10b at the contact zone 42 urges the panels together and promotes a tight joint. This locking structure *defined by the rib 30 of panel 10a and the detent 32 of panel 10b prevents substantial separation of the two panels 10a and 10b in a direction perpendicular to the side edges 13, 14 of the panels 10a, 10b and parallel to the respective first surfaces 11.*

EX1004, 5:23-34.

Petitioner relies on Miller's drawings as allegedly supporting its assertion that Miller anticipates the challenged claims. However, Miller's drawings do not support Petitioner's allegations. First of all, regardless of what the drawing may appear to depict, "it is well established that patent drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on the issue." *Nystrom v. TREX Co., Inc.*, 424 F.3d 1136, 1149 (Fed. Cir. 2005) (citing *Hockerson-Halberstadt, Inc. v. Avia Group Intern., Inc.*, 222 F.3d 951, 956 (Fed. Cir. 2000)). "Absent any written description in the specification of quantitative values, arguments based on measurement of a drawing are of little value." *Hockerson-Halberstadt*, 222 F.3d at 956 (quoting *In re Wright*, 569 F.2d 1124, 1127 (C.C.P.A. 1977)). Miller provides no indication that its drawings are to scale, and any measurements obtained from the drawings cannot serve as evidence of invalidity.

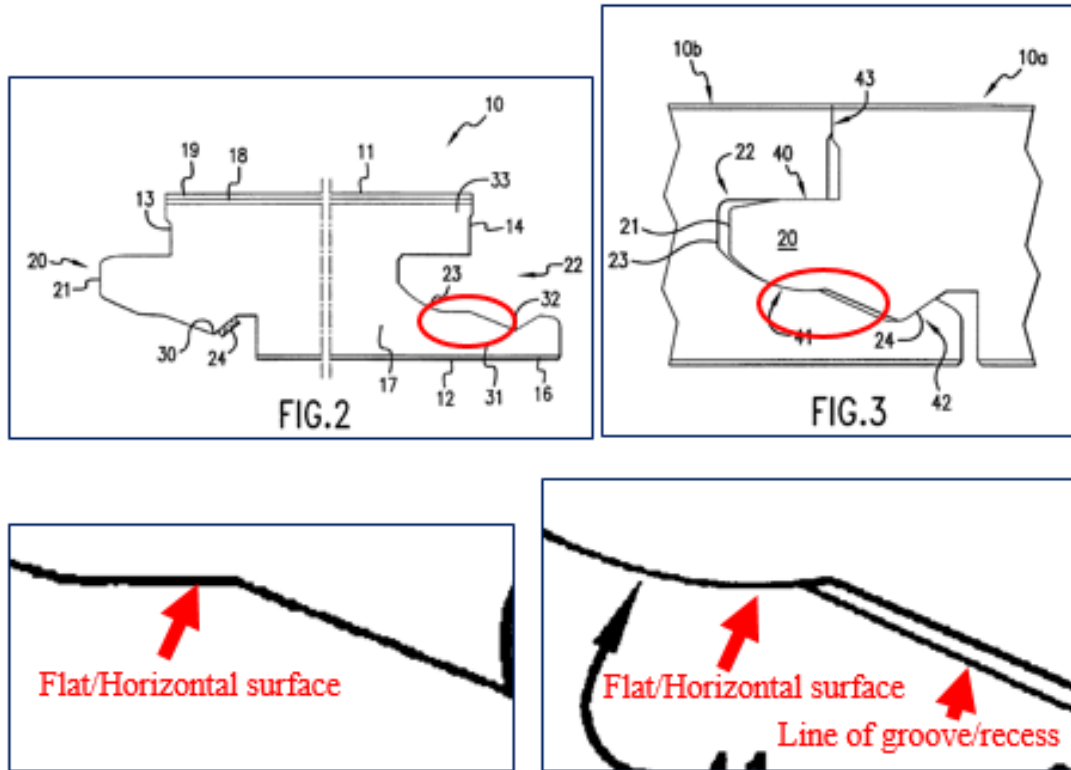
Second, despite Petitioner's contentions otherwise, the drawings do not depict dual consecutive locking recesses, as recited in element [1.5]. Figures 2 and 3 in Miller both show the same embodiment of floor covering panels in a disconnected state and in a connected state, respectively. *See* EX1004, 2:40-44. Petitioner bases its contentions on Figure 3. But Figure 3 illustrates the panels when connected, such that the contour lines for the groove and the tongue intersect/merge in such a way that it cannot be determined which line constitutes

the groove and which constitutes the tongue. Figure 2 on the other hand presents the same coupling profile but in a disconnected state where the contour lines are more clearly seen.

Looking at Figure 2, Miller does not support Petitioner's contention that Miller includes a first locking recess (which also is consistent with the written description in Miller). In Figure 3, the lines merge so that no conclusion can reasonably be made by a POSITA as to whether a locking recess is present in the groove or not. As discussed below, it is unsurprising that Petitioner's biased declarant finds one there. However, it has long been recognized that for a drawing alone to disclose a claim element, the element must be shown clearly. *See In re Wagner*, 63 F.2d 987, 987–88 (C.C.P.A. 1933) (“[T]he Board did not err in holding that the drawings are sufficient to afford a proper basis for the rejection” where “the shading in the drawing *clearly* indicates” the claimed feature.); *PlaSmart, Inc. v. Kappos*, 482 F. App'x 568, 572 (Fed. Cir. 2012) (“[D]rawings can be used as prior art, without referring to the surrounding description, *only if the prior art features are clearly disclosed* by the drawing.”).

Here, there is no such clear disclosure in Miller's drawings of a first locking recess with a curved horizontal locking surface. Figures 2 and 3 of Miller are reproduced side-by-side, below, along with zoomed-in versions of the section relied on by Petitioner to teach the first locking surface. What these show is that

the drawings of the same embodiment differ; and this imprecision means that the drawings *cannot* “clearly disclose” the claimed features.



EX1004, FIGs. 2, 3 (annotated)

Again, according to Miller Figures 2 and 3 disclose the same coupling profiles. EX1004, 2:40-44. Figure 2 depicts a groove/recess 23 *without* a horizontal locking recess. Additionally, Figure 2 depicts a tongue/protrusion 21 having merely a horizontal underside which would not be able to interact with any recess even if such a recess did exist in the groove 23. Directly below Figure 2 is an enlarged version showing the highlighted area of Figure 2. The aforementioned facts regarding Figure 2 are even more evident from the enlarged image.

On the right side is a similar depiction of Miller's Figure, 3, as well as an enlargement of the highlighted area. Figure 3 appears to show a slight curvature in the contour outlining the tongue/protrusion (that appears to be absent at the same location of the tongue on the left side of Figure 2). However, a curvature of the tongue/protrusion by itself does not make up a horizontal lock. For a horizontal lock to exist, there must be a recess present in the groove/recess 23 of Miller. The intersecting and merging lines in Figure 3, however, do not clearly show the contour of the groove/recess 23, which is the lower of the two lines in the bottom-right image shown below.

This is also consistent with how Miller describes this embodiment. Contact zones 41 and 40, which are the lower and upper contact zones between the tongue/protrusion and the groove/recess in Miller are described as being provided to "...locate the panels into substantially the same horizontal plane," i.e. vertical positioning. EX1004, 5:18-20. Moreover, even if a POSITA were to rely on the drawings, the contact zone 41 in Figure 3 is arranged forward of the alleged horizontal locking structure that the Petitioner claims is present in Figure 3. The contact zone 41 is beyond, i.e. distally of, the lowest point on the tongue/protrusion 21. This is a further indication that no horizontal locking is present in Miller, because if that was the case, the contact zone 41 would be arranged proximally of the lowest point on the tongue/protrusion 23.

Without having knowledge of the solution in the '425 Patent a POSITA would not reasonably conclude that Miller teaches a recess in the groove/recess for horizontal locking of the tongue/protrusion. Element [1.5] is thus not disclosed in Miller.

Element [1.6] in claim 1 of the '425 Patent recites: "...a first locking recess located in an internally extending portion within the groove and a second locking recess located in a lip portion protruding from an entrance opening of the groove." As element [1.5] is not disclosed in Miller, element [1.6] also is not disclosed.

Element [1.7] recites: "...the locking means further comprises dual consecutive locking lugs arranged in a lower portion of the tongue for horizontally interlocking engagement in the groove" A locking lug, as described in the '425 Patent is a protrusion intended for horizontal interlocking with a recess in the groove. EX1001, Abstract, 5:38-48. Taking this into account, as well as the foregoing facts regarding elements [1.5] and [1.6], element [1.7] cannot be disclosed by Miller either. Even if, by some stretch of the imagination, the tongue/protrusion in Miller could appear to have a rounded underside in Figure 3 (and in Figure 3 alone, as it is flat in Figure 2), there is no reasoning to support that this is a "locking lug...for horizontally interlocking engagement in the groove." Accordingly, this element is not disclosed in Miller. Petitioner's assertions fail for the same reasons as for elements [1.5] and [1.6].

Element [1.8] recites: "...a first locking lug extending downwardly from a lower tip portion of the tongue and a second locking lug extending downwardly from a root portion of the tongue." For all the reasons discussed above, this element also is not disclosed by Miller.

Element [1.9] recites: "...the first locking recess and the first locking lug are provided with matching curved horizontal locking surfaces and the second locking recess and the second locking lug are provided with matching inclined horizontal locking surfaces." Since Miller is silent with regards to showing more than one horizontal locking recess/lug, this element is not disclosed by Miller either.

Further, as explained above with respect to Miller's Figures 2 and 3, the surface of the alleged locking recess is flat and horizontal, not curved as Petitioner alleges.

In order for Petitioner's allegations to succeed, several facts need to be ignored:

1. Miller refers to and equates the coupling profiles disclosed therein to that of Moriau. Thiers, in relation to Figure 4 therein, also references the coupling profiles in Moriau. The '425 Patent points to Moriau as the technology upon which patent is providing improvement.
2. Miller does not describe having more than one horizontal mechanical locking structure.

3. Miller does not clearly show any of the features alleged by the Petitioner to be shown in the drawings. Figures 2 and 3 are explicitly stated to show the same coupling profile. Figure 2 is the more natural choice among these two figures for drawing any conclusions regarding the shape of the groove/recess 23 in Miller because it shows the coupling portions when they are not connected. No conclusion can be drawn from Figure 3 regarding the shape of the groove/recess due to the merged contour lines. As shown in Figure 2, the groove/recess 23 has a flat/horizontal bottom surface.

In summary, Petitioner has failed to provide any convincing evidence that challenged claim 1 is anticipated by Miller. Indeed, numerous claim elements are missing from, or at a minimum unclear in, Miller. The remaining challenged claims in Ground 1 depend from claim 1, so, accordingly, they are also not anticipated by Miller. Further, for dependent claims 7-12 and 15, Petitioner's contentions are premised on measurements of Miller's drawings which are not to scale and cannot be relied upon to show particular sizes. Pet., 27-34. Accordingly, Petitioner's Ground 1 cannot establish a reasonable likelihood of prevailing.

B. Ground 2: The challenged claims would not have been obvious in view of Miller.

In Ground 2, Petitioner asserts that challenged claims 1-15 would have been obvious in view of Miller alone. Pet., 34-50. This ground also fails.

First, Petitioner bases its Ground 2 argument on its contention that “it would have been obvious to create the locking profiles of Miller without the disclosed adhesive.” Pet., 35. But this is a flawed premise.

Miller relates to a “[p]re-glued tongue and groove flooring.” EX1004, 1:1-13. Miller explicitly seeks to improve problems with existing flooring coupling profiles, which Miller sees as two-fold. For one, according to Miller, existing solutions that use adhesives suffer from difficult and unpredictable application thereof. EX1004, 1:31-39. Secondly, with reference to interference fit or snap-locking fit panels being developed as an alternative to using adhesives with these issues, Miller states:

To address this problem, some manufacturers have developed coupling profiles in which an interference fit or snap-locking fit is provided and intended to urge the panels together and maintain panel-to-panel connection without the use of adhesives. These designs generally provide an easier installation process. However, they can create problems relating to the integrity of the joint. For example, the mechanical locking mechanisms may wear over time thereby reducing the locking force and resulting in play and visible gaps between the panels. Furthermore, the strength of some such joints may be noticeably less than that of products having adhesive applied within the joints.

EX1004, 1:40-51.

This disclosure in Miller teaches away from solely relying on a mechanical joint between adjacent panels. Further, Petitioner's contentions in this regard are inconsistent with the disclosure of Miller. Indeed, Miller states in its Title, Field of the Invention, Background Art, and Claims to use an adhesive. EX1004, (54), 1:6-2:33, 14:16-16:21 For Petitioner to claim that Miller teaches that the adhesive is not required is not credible. Both Petitioner and Mr. Boucké allege that Miller's use of the word "selectively" indicates that the adhesive is "optional." Pet., 13; EX1002, ¶42. This is disingenuous. Any unbiased POSITA would understand that "selectively applied" as used in Miller means "that the adhesive composition 24 is applied *only to the intended area of application*, and that the adhesive composition 24 is not applied to neighboring areas or any other areas besides the selected and intended area of application." EX1004, 6:10-15; *see also id.*, 3:5-8 ("An adhesive composition 24, described in greater detail below, is *selectively applied to at least a portion of at least one of the first or second coupling members 20, 22*, as desired."), 5:58-6:7, 6:18-40. But this teaching is ignored by both Petitioner and Mr. Boucké in order to fit their narrative for Ground 2 that is premised on Miller not having the adhesive that is at the core of its disclosure.

Petitioner also contends that the horizontal locking strength of Miller's alleged first locking recess "would simply require machining the bottom of the groove so that the upward curvature ... was more drastic or less shallow." Pet., 38.

However, as discussed above, Miller is silent regarding any alleged “first locking recess.” Mr. Boucké merely reiterates the assertions from the Petition in this regard. EX1002, ¶43. If Mr. Boucké was providing unbiased testimony on these issues he would have at least acknowledged the facts presented in section **Error! Reference source not found.** above.

Moreover, through willful blindness, Mr. Boucké chooses to base his analysis of the drawings on Figure 3 and not on Figure 2, even though these two figures, according to Miller itself, disclose the same coupling profile. EX1004, 2:40-44. Relying solely on Mr. Boucké’s biased testimony premised on a figure/drawing where it is at best highly uncertain as to what features are shown, Petitioner cannot meet its burden of showing a reasonable likelihood of success that the challenged claims would have been obvious. Especially when a POSITA would more reasonably rely on the disconnected joint shown in Figure 2 of Miller to understand how the recess is actually shaped. Further, even if Figure 3 in Miller may appear to show a slightly rounded shape of the underside of the tongue, the lack of a correspondingly curved recess in Figure 2, as well as the lack of any mention or implication in Miller’s specification that such would exist, contradicts the view of Petitioner and Mr. Boucké. Failing to acknowledge this is a significant sign of both bias and impermissible hindsight affecting Petitioner’s and Mr. Boucké’s analysis.

A POSITA looking to further improve the teachings of Miller alone would not arrive at the recited elements [1.5]-[1.9] of claim 1 of the '425 Patent, nor with any other mechanical locking structure for that matter. A POSITA reading Miller's disclosure would draw the conclusion that snap-locking fit or interference fit panels are problematic and that new ways of applying adhesive as well as new formulations of adhesive is the obvious way forward. But this is not what the '425 Patent claims.

The Petition further cites various other references as alleged support for its argument that Miller renders claim 1 obvious. Pet., 37. However, Petitioner provides no reasoning as to the motivation why a POSITA would turn to these other, unapplied prior art documents, nor why and how a combination between Miller and any of these references would lead to the invention of the '425 Patent as recited in claim 1. *See Securus Techs., Inc. v. Global Tel*Link Corp.*, 701 F. App'x 971, 977 (Fed. Cir. 2017) (“a broad characterization of [prior art references] as both falling within the same alleged field . . . without more, is not enough for [Petitioner] to meet its burden of presenting a sufficient rationale to support an obviousness conclusion”).

For these reasons, Petitioner provides no convincing evidence that challenged claim 1 of the '425 Patent would have been obvious in view of Miller. Petitioner has therefore not met its burden of showing a reasonable likelihood of

success. Claims 2-15 depend from claim 1 and so Petitioner also has not met its burden as to these claims. Further, for many of the dependent claims, Petitioner relies on unsupported allegations that features would have been an “obvious design choice.” *See, e.g.,* Pet., 40-50.

C. Ground 3: The challenged claims would not have been obvious in view of Miller and Roy.

In Ground 3, Petitioner alleges that Miller in combination with Roy would have rendered challenged claims 1, 2, 4-12, 14, and 15 obvious.⁵ Pet., 50-59. As in Ground 2, Petitioner starts its reasoning with the assumption that, unsurprisingly in view of the discussion above, the Board might struggle to find elements [1.5]-[1.9] of the claim 1 of the '425 Patent in Miller. Pet., 50. So Petitioner alleges these missing elements [1.5]-[1.9] would have been obvious in view of Roy. Yet again, Petitioner is wrong.

As established above in sections V.A and V.B, Miller does not disclose, teach, or suggest elements [1.5]-[1.9] of claim 1.

⁵ Although Petitioner lists claims 1-15 in its summary chart for Ground 3, Pet., 7, the Petition’s analysis in Ground 3 *only* addresses claims 1, 2, 4-12, 14, and 15, Pet., 50, as is apparent from the heading for Ground 3. Accordingly, only claims 1, 2, 4-12, 14, and 15 are challenged in Ground 3.

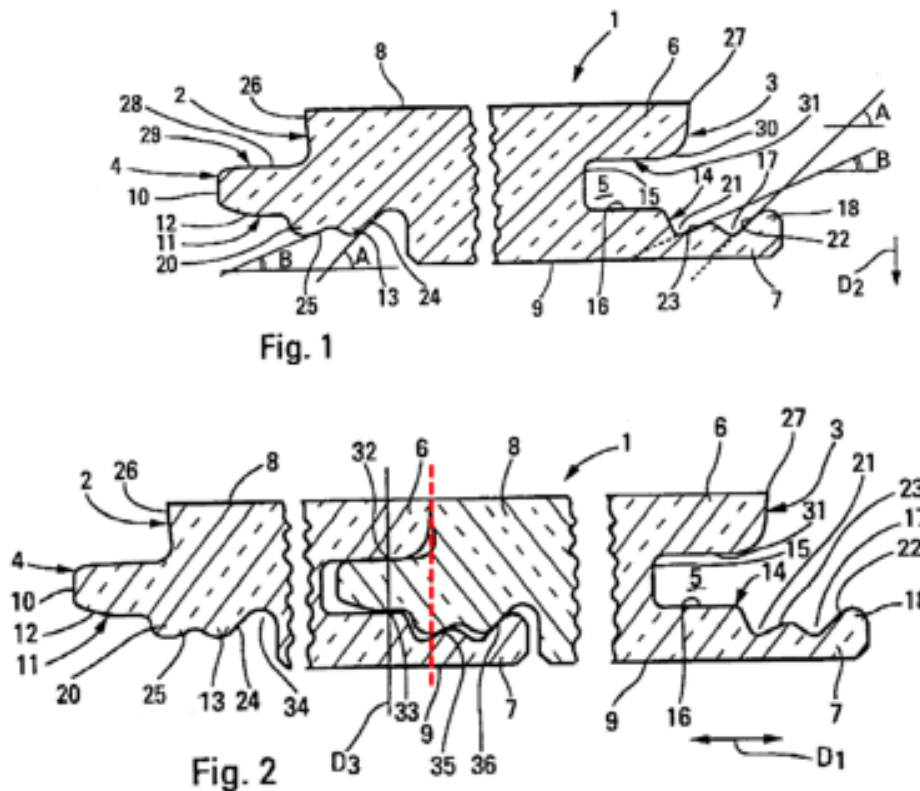
Again, Miller proposes using adhesives for mitigating drawbacks that Miller alleges cannot be addressed only with mechanical joining systems. EX1004, 1:40-51. Miller describes its invention in relation to a coupling profile as disclosed in Moriau. *Id.*, 4:54-59. To improve the coupling profile disclosed in Moriau, Miller proposes that adhesive is the way forward; specifically, Miller alleges a particular application method and composition of the adhesive will alleviate issues present in purely mechanical joining systems, while reducing difficulties associated with manual application of adhesives in prior art solutions. EX1004, 1:40-59. In terms of the coupling profile, Miller discloses nothing more than what is already taught by Moriau.

Similarly, Roy also defines its starting point in Moriau. EX1005, 1:31-35. Roy seeks to provide an improved solution based on improving control of predetermined loads in the vertical and horizontal direction between two adjacent panels during joining and improving the seal against dust and liquids. EX1005, 1:60-65. In particular, Roy seeks to achieve “predetermined loads in the aforementioned two directions between two adjacent panels combined with an improved seal against dust and liquids.” *Id.*

In attempting to solve this problem, Roy arrives at a solution with two raised portions and two associated recesses, with both raised portions being arranged on the root portion on the tongue. *See, e.g.*, EX1005, FIGs. 1, 2. In order to control

loads in the joint between two adjacent panels during connection, the contact surfaces provided on the pair of raised portions and associated recesses respectively are arranged with different orientations. *Id.*, 2:15-22.

As shown in Roy's Figures 1 and 2, reproduced below, the respective contact surface 22, 24 on both the first raised portion 13 and in the associated first recess 17 is rectilinear and arranged at an angle A. *Id.*, 4:26-44.



EX1005, FIGs. 1, 2 (annotated).

Similarly, the respective contact surface 23, 25 on both the second raised portion 20 and in the associated second recess 21 is rectilinear and arranged at an

angle B. *Id.* The angle A is between 20° and 30° while the angle B is between 45° and 55°. *Id.*

Furthermore, regarding the tongue 4, Roy teaches that “points 32, 33 are points of contact at which a slight clearance is provided to facilitate insertion of the tongue 4 into the groove 5 without significantly deforming the bottom lip 7 at the point 33 so that the elastic deformation of said bottom lip 7 is entirely reserved for the clipping and clamping functions at the points 35 and 36.” *Id.*, 5:31-35.

Petitioner provides no convincing evidence regarding the motivation of a POSITA to, starting in Miller, turn to Roy to arrive at the claimed invention. As established, Miller explicitly teaches away from mechanical coupling profiles only having interference or snap-locking fit based on susceptibility of low strength in the joint. EX1004, 1:40-51. As such, a POSITA seeking to improve the strength of the joint provided in Miller would *not* have been motivated to look for other mechanical coupling profiles; rather, they would further investigate the possibilities of adhesives, for example, new application methods or formulations. Roy, however, teaches a purely mechanical coupling profile in conflict with this teaching in Miller.

Petitioner also fails to provide any convincing evidence of how a POSITA would arrive at challenged claim 1 of the '425 Patent by combining Miller and Roy. As discussed herein, Roy and Miller both teach that the tongue is for vertical

positioning/locking and nothing else. EX1005, 5:31-35; EX1004, 5:15-19; *supra* Sections III.A, III.B. Roy goes even further than Miller in this aspect, explicitly teaching that there should be a clearance between the tongue and the groove. EX1005, 5:31-35.

Accordingly, at least elements [1.6] and [1.8] of claim 1 of the '425 Patent are not taught or suggested by either Roy or Miller. Additionally, and with reference to Figure 2 above, as shown by the red dashed line that is added for illustrative purposes, it cannot be said that either of the recesses in Roy is arranged “in an internally extending portion within the groove” as recited in element [1.6]. Roy shows contact points 35 and 36 both being arranged outside of the internally extending portion which is delimited by the red dash-line.

Element [1.7] is also not disclosed by Roy, as the locking lugs and locking recesses recited in claim 1 of the '425 Patent are for mutual horizontal locking. In Roy, it is unclear whether both of the locking recesses are for horizontal locking, as Roy claims the different orientations of the two inclined surfaces in the recesses are for controlling loading in different directions, i.e. in the horizontal and vertical direction. EX1005, 2:14-22. This reasoning is further supported by Miller, which explains: “[t]he angle formed by the substantially planar contact zone 42 and the substantially planar second surface 12 forms an acute angle therebetween, when measured from the second surface 12 counterclockwise to the plane of the contact

zone 42. This configuration ensures that the contact force between the adjacent panels 10a, 10b at the contact zone 42 urges the panels together and promotes a tight joint.” EX1004, 5:23-30.

For all the reasons discussed above, Roy also fails to teach element [1.9]. Roy teaches inclined rectilinear surfaces being provided in both recesses as well as on both raised portions. EX1005, 4:26-39. Element [1.9], on the other hand, recites the “first locking recess and first locking lug are provided with matching *curved horizontal locking surfaces*.”

Accordingly, Petitioner provides neither a rationale motivation for a POSITA to turn to Roy in view of Miller, nor how such a combination discloses, teaches, or suggests the invention as recited in claim 1 of the '425 Patent. Dependent claims 2, 4-12, 14, and 15 are also patentable at least based on their dependence from claim 1.

VI. MR. BOUCKÉ’S TESTIMONY SHOULD BE GIVEN NO WEIGHT.

Petitioner relies almost exclusively on Mr. Boucké’s testimony to support its contentions that Miller and/or Roy discloses, teaches, or suggests the dual consecutive locking recesses configured as in claim 1. For claim elements [1.5]-[1.9], Petitioner relies extensively on Mr. Boucké’s annotated versions of Miller’s Figure 3. *See* Pet., 14-23 (citing EX1002, ¶¶44-48, and claim chart pages 39-47).

The Board should give no weight to this testimony. To say that Mr. Boucké's testimony is infected by bias is an understatement. Mr. Boucké is an employee of the Petitioner. Specifically, he is the Chief Technology Officer (CTO) of Petitioner i4F. EX1002, ¶4. The Board should give no weight to Mr. Boucké's testimony because his obvious bias and direct interest in seeing the '425 Patent claims found unpatentable as an employee of Petitioner raises concerns about the credibility of his testimony. Mr. Boucké has been employed by Petitioner for more than a decade. EX1025, 3. Notably, he provides no statement that his compensation is not affected by the outcome of this proceeding.

The lack of credibility of Mr. Boucké's testimony is further evidenced by the fact that he based his analysis on Miller's Figure 3, rather than on the clearer illustrations of the same coupling profile, shown in Figure 2. As discussed in detail above, it strains credibility that a POSITA, opining on the shape and features present in a coupling profile, would base their reasoning on a figure/drawing where the contour lines merge with one another (i.e., Figure 3), rather than on the clearer figure showing the two parts separately (i.e., Figure 2). Failing to even acknowledge this, as well as the complete lack of support for his positions in Miller's specification, highlight the impermissible hindsight and bias infecting Mr. Boucké's testimony. The Board should give it no weight.

VII. CONCLUSION

Patent Owner respectfully requests that the Board exercises its discretion to deny institution under 35 U.S.C. § 325(d). Regardless, the Board should deny institution because the Petitioner fails to establish a reasonable likelihood of success for Grounds 1 through 3. Accordingly, in any circumstance, the Petition should be denied.

Respectfully submitted,

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CERTIFICATE OF WORD COUNT (37 C.F.R. § 42.24(d))

1. This Patent Owner Preliminary Response complies with the type-volume limitation of 14,000 words, comprising 12,473 words, excluding the parts exempted by 37 C.F.R. § 42.24(a)(1).

2. This Patent Owner Preliminary Response complies with the general format requirements of 37 C.F.R. § 42.6(a) and has been prepared using Microsoft® Word 2016 in 14-point Times New Roman font.

Respectfully submitted,

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CERTIFICATE OF SERVICE (37 C.F.R. § 42.6(e))

I certify that the above-captioned **PATENT OWNER PRELIMINARY
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