

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HUNTER'S MANUFACTURING COMPANY, INC. d/b/a
TENPOINT CROSSBOW TECHNOLOGIES,
Petitioner,

v.

RAVIN CROSSBOWS, LLC,
Patent Owner.

IPR2023-00407
Patent 9,354,015 B2

Before KEN B. BARRETT, PATRICK R. SCANLON, and
ROBERT J. SILVERMAN, *Administrative Patent Judges*.

SILVERMAN, *Administrative Patent Judge*.

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

I. INTRODUCTION

Petitioner Hunter's Manufacturing Company, Inc. d/b/a TenPoint Crossbow Technologies ("Petitioner") filed a Petition (Paper 1, "Pet.") requesting an *inter partes* review of claim 1 ("the challenged claim") of U.S. Patent No. 9,354,015 B2 (Ex. 1001, "the '015 Patent"). Petitioner filed a Declaration of Stephen A. Batzer (Ex. 1016) with its Petition.

Patent Owner Ravin Crossbows, LLC ("Patent Owner") filed a Preliminary Response (Paper 9, "Prelim. Resp.").

Petitioner sought and received authorization to submit supplemental briefing. *See* Paper 10. Petitioner filed a Reply to Patent Owner's Response (Paper 11, "Reply") and Patent Owner filed a Sur-reply to Petitioner's Reply to Patent Owner's Response (Paper 12, "Sur-reply").

We have authority to determine whether to institute an *inter partes* review. *See* 35 U.S.C. § 314 (2018); 37 C.F.R. § 42.4(a) (2022). Under 35 U.S.C. § 314(a), we may not authorize an *inter partes* review unless the information in the petition and the preliminary response "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." For the reasons that follow, and solely for the purposes of this Decision, we determine that Grounds 7 and 8 of the Petition (as identified below) satisfy this standard. Accordingly, we institute an *inter partes* review, as to all of the Grounds presented in the Petition.

II. BACKGROUND

A. *Real Parties-in-Interest*

Petitioner identifies Hunter's Manufacturing Company, Inc. d/b/a TenPoint Crossbow Technologies as the real party-in-interest. Pet. 3.

Patent Owner identifies Ravin Crossbows, LLC as the real party-in-interest. Paper 6, 1.

B. Related Matters

As required by 37 C.F.R. § 42.8(b)(2), the parties identify the following related matter (Pet. 3; Prelim. Resp. 1–2): *Ravin Crossbows, LLC v. Hunter’s Mfg. Co., Inc. d/b/a TenPoint Crossbow Technologies*, No. 5:23-cv-00598 (N.D. Ohio) (transferred from U.S. District Court for the District of Nevada, *Ravin Crossbows, LLC v. Hunter’s Mfg. Co., Inc. d/b/a TenPoint Crossbow Technologies*, No. 2:21-cv-02213-APG-EJY (D. Nev.)).

C. The ’015 Patent

The ’015 Patent, which is entitled “String Guide System for a Bow,” relates to archery bows and crossbows, wherein rotatable string guides are involved in tensioning the draw string that drives an arrow. Ex. 1001, Abstract, 2:1–23. Figure 12 of the ’015 Patent, reproduced below, illustrates several features relevant to the challenged claim 1.

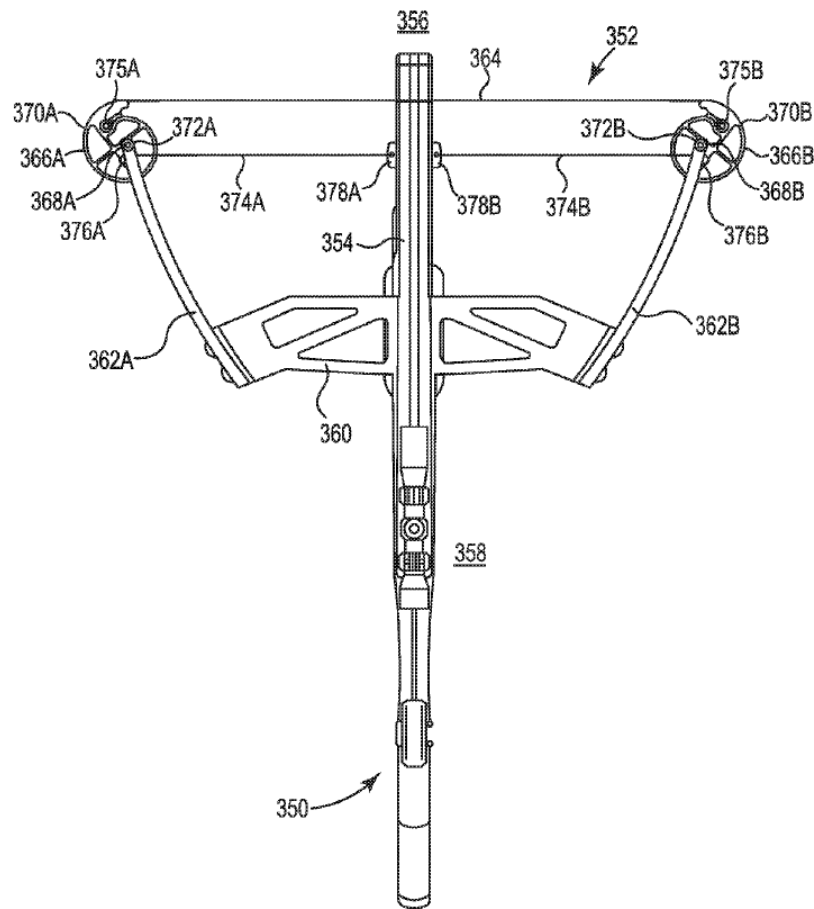


Fig. 12

Figure 12 shows a schematic plan view of crossbow 350 having center portion 354 with down-range side 356 and up-range side 358, flexible limbs 362A and 362B, and string guides 366A and 366B. *Id.* at 6:24–28. In operation, elements of string guides 366A and 366B wind and unwind draw string 364 and first and second power cables 374A and 374B, as flexible limbs 362A and 362B are flexed (i.e., a drawn configuration) and unflexed (i.e., a released configuration). *Id.* at 6:52–56; *see also id.* at 2:15–23. More specifically, in a preferred embodiment, the string guides have grooves that receive the draw string and power cables, as they are being wound onto the rotating string guides. *Id.* at 3:65–4:24. In claim 1, these elements are

called the “draw string journal[s]” and the “power cable take-up journal[s].” *See id.* at 8:1–34. As shown in Figure 12, each of string guides 366A and 366B rotates about respective axis of rotation, 368A, 368B. *Id.* at 6:34–40. In a preferred embodiment, the power cable take-up journals are helical, such that they displace the power cables away from the string guides, as the power cables are wound onto respective journals, while string guides rotate about respective axes. *Id.* at 4:25–26. Figure 9A, reproduced below, illustrates an arrangement of a draw string journal and a helical power cable take-up journal on a string guide.

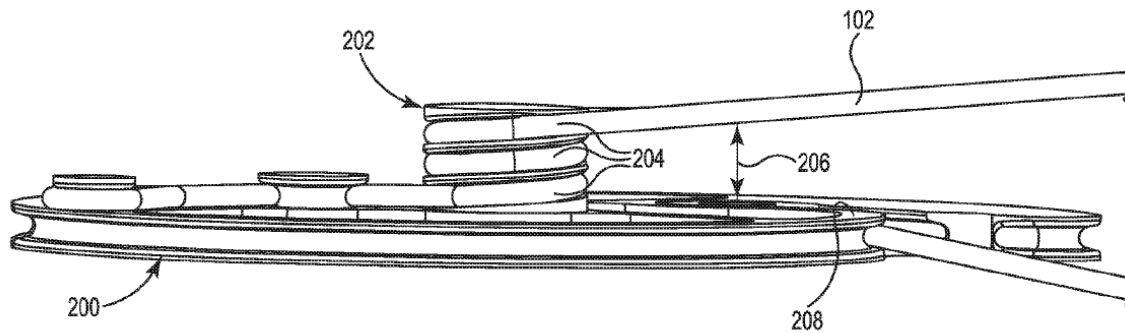


Fig. 9A

Figure 9A is a perspective drawing of string guide 200 having power cable take-ups 202 with helical journals 204 that receive power cable 102. *Id.* at 4:62–66.

D. Illustrative Claim

Independent claim 1, reproduced below, is the only challenged claim.

1. A crossbow, comprising:
 - a central portion comprising a down-range side and an up-range side;
 - first and second flexible limbs attached to the central portion;

a first string guide mounted to the first bow limb and rotatable around a first axis, the first string guide comprising a first draw string journal having a first plane of rotation perpendicular to the first axis, and a first helical power cable take-up journal extending in a direction perpendicular to the first plane of rotation of the first draw string journal;

a second string guide mounted to the second bow limb and rotatable around a second axis, the second string guide comprising a second draw string journal having a second plane of rotation perpendicular to the second axis, and a second helical power cable take-up journal extending in a direction perpendicular to the second plane of rotation of the second draw string journal;

a draw string received in the first and second draw string journals and secured to the crossbow in a reverse draw configuration with the draw string adjacent the down-range side of the string guides in a released configuration, wherein the draw string translates from the down-range side toward the up-range side and unwinds between the first and second string guides to a drawn configuration;

a first power cable received in the first helical power cable take-up journal; and

a second power cable received in the second helical power cable take-up journal,

wherein as the bow is drawn from the released configuration to the drawn configuration the first and second power cables wrap onto the first and second helical, power cable take-up journals and are displaced along the first and second axes away from the first and second planes of rotation of the first and second draw string journals, respectively.

Ex. 1001, 7:63–8:34.

E. Prior Art and Asserted Grounds of Unpatentability

Petitioner asserts that claim 1 is unpatentable based on the following grounds (Pet. 18):

Ground	Claim Challenged	35 U.S.C. §	Basis/Reference(s)
1	1	102	Stanziale '302 ¹
2	1	103	Stanziale '302
3	1	102	Stanziale '062 ²
4	1	103	Stanziale '062
5	1	102	Stanziale '771 ³
6	1	103	Stanziale '771
7	1	103	Darlington, ⁴ Norkus ⁵
8	1	103	Darlington, Park ⁶
9	1	103	Kempf '871, ⁷ Norkus
10	1	103	Kempf '871, Park
11	1	103	Kempf '871, Stanziale '302
12	1	103	Islas, ⁸ Darlington, Park

III. ANALYSIS

A. Discretionary Denial of Petition

Institution of *inter partes* review is discretionary. *See Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) (“[T]he [U.S.

¹ US 2012/0125302 A1, pub. May 24, 2012 (Ex. 1007).

² WO 2011/158062 A1, pub. Dec. 22, 2011 (Ex. 1011).

³ WO 2011/141771 A1, pub. Nov. 17, 2011 (Ex. 1012).

⁴ US 2011/0030666 A1, pub. Feb. 10, 2011 (Ex. 1013).

⁵ US 7,578,289 B2, iss. Aug. 25, 2009 (Ex. 1010).

⁶ US 2012/0312287 A1, pub. Dec. 13, 2012 (Ex. 1009).

⁷ US 7,836,871 B2, iss. Nov. 23, 2010 (Ex. 1014).

⁸ US 2011/0308508 A1, pub. Dec. 22, 2011 (Ex. 1015).

Patent and Trademark Office] is permitted, but never compelled, to institute an IPR proceeding.”)

Patent Owner contends that the circumstances of the Petition, in regard to parallel district court litigation involving the ’015 Patent, warrant the Board’s exercise of its discretion to deny institution under 35 U.S.C. § 314(a), based on the factors established in *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, 2020 WL 2126495, at 2–3 (PTAB Mar. 20, 2020) (precedential) (“*Fintiv*”). Prelim. Resp. 57–70; *see also* Sur-reply 1–5. Petitioner urges us not to exercise such discretion. Pet. 4–7; *see also* Reply 1–5.

On June 21, 2022, the Director of the USPTO issued an Interim Procedure for Discretionary Denials in AIA Post Grant Proceedings with Parallel District Court Litigation, *available at* https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621_.pdf (“Interim Procedure”). The Interim Procedure explains that “[c]onsistent with *Sotera Wireless, Inc.*, the PTAB will not discretionarily deny institution in view of parallel district court litigation where a petitioner presents a stipulation not to pursue in a parallel proceeding the same grounds or any grounds that could have reasonably been raised before the PTAB.” Interim Procedure 3 (internal footnote omitted) (citing *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (precedential as to § II.A) (“*Sotera*”)). The Interim Procedure explains that such a *Sotera* stipulation “mitigates concerns of potentially conflicting decisions and duplicative efforts between the district court and the PTAB . . . [and] allows the PTAB

to review grounds that the parallel district court litigation will not resolve.”
Id. at 7–8.

In this proceeding, Petitioner offers a stipulation employing language nearly identical to that prescribed in the Interim Procedure: “Petitioner hereby stipulates that it will not pursue in the parallel district court proceeding the same grounds as in this Petition or any grounds that could have reasonably been raised as to claim 1 in this Petition.” Pet. 6–7.

Patent Owner argues that, through the stipulation, “Petitioner has attempted to reserve the right to assert *the same invalidity grounds* presented in the Petition against claims with *the same generalized elements* before the district court,” rendering Petitioner’s stipulation “an empty promise that does nothing to limit risk of duplicative efforts in resolving anticipation or obviousness arguments.” Prelim. Resp. 68–69.

Petitioner explicitly characterizes its stipulation as conforming to the model that the Director provided in the Interim Procedure. Pet. 6. Based upon Petitioner’s representations and the language of the stipulation itself, we determine that Petitioner’s stipulation is a *Sotera* stipulation of the kind discussed in the Interim Procedure. Therefore, in view of Petitioner’s stipulation and in accordance with the Director’s Interim Procedure, we decline to deny institution under *Fintiv*.

Accordingly, the following analysis considers whether Petitioner has met the “reasonable likelihood” standard for institution under 35 U.S.C. § 314(a).

B. Legal Standards

1. Anticipation

To establish anticipation under 35 U.S.C. § 102, each and every element in a claim, arranged as recited in the claim, must be found in a single prior art reference. *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008); *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383 (Fed. Cir. 2001). Each element of the challenged claim must be found, either expressly or inherently, in the single prior art reference. *Verdegaal Bros., Inc. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987). When evaluating a prior art reference in the context of anticipation, the reference must be “considered together with the knowledge of one of ordinary skill in the pertinent art.” *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (citing *In re Samour*, 571 F.2d 559, 562 (CCPA 1978)). “[A] reference can anticipate a claim even if it ‘d[oes] not expressly spell out’ all the limitations arranged or combined as in the claim, if a person of skill in the art, reading the reference, would ‘at once envisage’ the claimed arrangement or combination.” *Kennametal, Inc. v. Ingersoll Cutting Tool Co.*, 780 F.3d 1376, 1381 (Fed. Cir. 2015) (quoting *In re Petering*, 301 F.2d 676, 681 (CCPA 1962)) (alteration in original).

In order to be anticipatory, a prior art reference must enable a person of ordinary skill in the art to make the invention without undue experimentation. *See Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1336 (Fed. Cir. 2008). A sufficiently enabling anticipatory reference must put the invention “in the possession” of the person of ordinary skill in the art. *See Impax Labs., Inc. v. Aventis Pharms. Inc.*, 545 F.3d 1312, 1315 (Fed. Cir. 2008).

2. *Obviousness*

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter 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. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007).

The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) when in evidence, objective evidence of non-obviousness (i.e., so-called secondary considerations).⁹ *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). We also recognize that prior art references must be “considered together with the knowledge of one of ordinary skill in the pertinent art.” *Paulsen*, 30 F.3d at 1480 (citing *Samour*, 571 F.2d at 562).

C. *Claim Interpretation*

In an *inter partes* review, we construe claims using the same standard applied in a district court. *See* 37 C.F.R. § 42.100(b). Under this standard, claim terms are generally given their plain and ordinary meaning, as would have been understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc).

“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’”

⁹ The present record does not include any evidence of any proposed objective evidence of non-obviousness.

Realtime Data, LLC v. Iancu, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Petitioner proposes constructions for “helical power cable take-up journal” and “mounted to.” Pet. 25–28. As discussed below in the context of Petitioner’s challenges, Patent Owner indicates disagreement with Petitioner’s construction of “mounted to.” *See* Prelim. Resp. 3–7. At this stage in the proceeding, the parties have not fully developed this claim construction issue, and we encourage the parties to do so in subsequent briefing.

Patent Owner also asserts that “[t]he parties agreed to construe ‘power cable take-up journal’ as ‘a structure that accepts a least one power cable,’” and contends that there is no need to construe “helical.” *Id.* at 7.

On this record and for purposes of this decision, we determine that no claim terms require express construction.

D. Level of Ordinary Skill

Petitioner contends that person of ordinary skill in the art to which the ’015 Patent pertains “would be a technical person who has at least some experience working in the field of archery, reviewing crossbows or engineering related to bows and/or crossbows, and is generally familiar with prior art crossbows” and “would likely have at least a bachelor’s degree in mechanical engineering or, alternatively, would have several years of experience in the field of archery or engineering related to bows and/or crossbows.” Pet. 28 (citing Ex. 1016 ¶ 17).

Patent Owner states: “Solely for purposes of this Preliminary Response, Patent Owner does not dispute Petitioner’s proposed

qualifications of a person of ordinary skill in the art (‘POSA’).” Prelim. Resp. 2.

For the purposes of the present Decision, we adopt Petitioner’s description of a person of ordinary skill in the art pertinent to the ’015 Patent.

E. Grounds Based on Stanziale ’302 (Grounds 1 and 2)

Petitioner contends that Stanziale ’302 anticipates claim 1 (Ground 1) and that claim 1 is, at least, obvious over Stanziale ’302 (Ground 2).¹⁰ See Pet. 18, 28–36.

Patent Owner contends that Stanziale ’302 does not satisfy certain limitations of claim 1, per Grounds 1 and 2 (see Prelim. Resp. 9–23), which we address in turn.

1. “mounted to”

According to Patent Owner, Stanziale ’302 lacks claim 1’s “first string guide mounted to the first bow limb” and “second string guide mounted to the second bow limb.” See Prelim. Resp. 9–17.

Petitioner argues that Stanziale ’302 discloses “string guide[s]” “mounted to” respective “limb[s],” even though there are a number of intermediate elements between each “string guide” and “limb.” Pet. 30–32. Petitioner interprets the expression “mounted to” as “connected to, either directly or indirectly.” *Id.* at 26.

Patent Owner maintains that Petitioner’s interpretation is “overly-broad,” whereby “[i]n Petitioner’s view, *any component* of a crossbow is ‘mounted to’ *every other component* regardless of where it is located or how

¹⁰ Petitioner also relies upon Stanziale ’302 in Ground 11. See Pet. 56–58.

many intermediate components exist in the chain of physical connections between the recited components.” Prelim. Resp. 3.

At this stage in the proceeding, the parties have not fully developed this claim construction issue, and we encourage the parties to do so in subsequent briefing.

2. *“helical power cable take-up journal[s] extending in a direction perpendicular to the . . . plane[s] of rotation of” respective “draw string journal[s]”*

According to Patent Owner, Stanziale ’302 lacks claim 1’s “first helical power cable take-up journal extending in a direction perpendicular to the first plane of rotation of the first draw string journal” and “second helical power cable take-up journal extending in a direction perpendicular to the second plane of rotation of the second draw string journal.” *See* Prelim. Resp. 17–19.

Petitioner maps claim 1’s “helical power cable take-up journal[s]” to element 521 shown in Figure 9 of Stanziale ’302. Pet. 32–33. Stanziale ’302 describes element 521 as a “perimetral track” that “may be a simple annular groove or it may have a spiral or helical shape, so as to wind a plurality of turns of a flexible element.” Ex. 1007 ¶ 106. The reference further states that “a helix has a three-dimensional development and then winds a plurality of turns which are progressively coiled adjacent to each other.” *Id.* Petitioner argues that Figure 9 of the reference shows that element 521 shares a common rotational axis (element 450) with element 511 (which Petitioner maps to claim 1’s “draw string journal”), whereby element 521 also satisfies claim 1’s limitation of “extending in a direction perpendicular to the . . . plane of rotation of the [respective] draw string journal.” *See* Pet. 31, 33.

Patent Owner characterizes Petitioner's argument as a "conclusory assertion," and contends that Petitioner's referenced portions of Stanziale '302 fail to "disclose[] a specific relationship between pivot axis 450" (i.e., the axis of rotation shared by the elements mapped to claim 1's "draw string journal" and the "helical power cable take-up journal"), so as to show "the direction in which perimetral tracks 521 extend." Prelim. Resp. 17–18.

Yet, the circumstance of the common rotational axis appears to establish that a helical perimetral track 521 would "extend[] in a direction perpendicular to the . . . plane of rotation of" the respective "draw string journal," per claim 1 of the '015 Patent.

Accordingly, at this stage of the proceeding, and for the purposes of the present Decision (i.e., concerning whether Petitioner would be reasonably likely to prevail, per 35 U.S.C. § 314(a)), we are persuaded that Stanziale '302 sufficiently discloses claim 1's "helical power cable take-up journal[s] extending in a direction perpendicular to the . . . plane[s] of rotation of" respective "draw string journal[s]."

3. *"as the bow is drawn from the released configuration to the drawn configuration the first and second power cables . . . are displaced along the first and second axes away from the first and second planes of rotation of the first and second draw string journals, respectively"*

According to Patent Owner, Stanziale '302 lacks claim 1's recitation "as the bow is drawn from the released configuration to the drawn configuration the first and second power cables . . . are displaced along the first and second axes away from the first and second planes of rotation of the first and second draw string journals, respectively." See Prelim. Resp. 19–22.

Petitioner contends that Stanziale '302 discloses the identified limitation. *See* Pet. 35–36 (citing Ex. 1007 ¶¶ 127–129, Figs. 1–8; Ex. 1016 ¶ 151).

Yet, Petitioner also appears to concede that this very limitation is not disclosed explicitly in the reference, by stating:

Because the helical power cable journals 521 are on opposite sides of the draw string journal 511, a POSA would immediately envisage that the helical configuration of the power cable journals 521 would need to be such that the power cables 32 extend away from (rather than towards) the draw string journal 511 to avoid interference with the draw string 31.

Pet. 36 (citing Ex. 1016 ¶ 151). Indeed, Patent Owner argues that Figure 3 of Stanziale '302 “appears to show the power cables being displaced *toward* the first and second planes of rotation, rather than *away from* these planes as required by” claim 1. Prelim. Resp. 19.

Accordingly, for the purposes of the present Decision, we are not persuaded that Stanziale '302 sufficiently discloses claim 1's recitation “as the bow is drawn from the released configuration to the drawn configuration the first and second power cables . . . are displaced along the first and second axes away from the first and second planes of rotation of the first and second draw string journals, respectively.”

4. *Petitioner's Proposed Modifications to Stanziale '302*
(Ground 2)

In addition to contending that Stanziale '302 teaches all the limitations of claim 1 (per Ground 1), Petitioner contends that claim 1 would be obvious (per Ground 2), because Stanziale '302 suggests the limitation (addressed in the previous subsection): “as the bow is drawn from the released configuration to the drawn configuration the first and second power cables

. . . are displaced along the first and second axes away from the first and second planes of rotation of the first and second draw string journals, respectively.” *See* Pet. 36. Petitioner contends:

the helical nature of the power cable take-up journals means that the cables 32 [of Stanziale ’302] wrap onto those journals in one of two directions: toward the draw string planes of rotation or away. With only two options, it would be obvious to try each.

Id. (citing *KSR*, 550 U.S. at 421; Ex. 1016 ¶ 155).

Patent Owner argues that Petitioner’s stated reason to modify Stanziale ’302 is deficient. *See* Prelim. Resp. 46–47.

The Federal Circuit has explained that “obviousness concerns whether a skilled artisan not only *could have made* but *would have been motivated to make* the combinations or modifications of prior art to arrive at the claimed invention.” *Belden, Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015). Petitioner relies upon a portion of *KSR* in which the Supreme Court stated:

When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. In that instance the fact that a combination was obvious to try might show that it was obvious under § 103.

KSR, 550 U.S. at 421. Yet, in the analysis of Ground 2, Petitioner does not address the predicate factual determinations that the Supreme Court identifies — e.g., that there would have been “a design need or market pressure,” that there were “identified” and “predictable” solutions. *Id.*

Therefore, based upon the present record, and for the purposes of the present Decision, Petitioner does not provide a sufficient reason for modifying Stanziale '302, in order satisfy the identified limitation of claim 1.

F. Grounds Based on Stanziale '062 (Grounds 3 and 4)

Petitioner contends that Stanziale '062 anticipates claim 1 (Ground 3) and that claim 1 is, at least, obvious over Stanziale '062 (Ground 4). *See* Pet. 37–41.

Patent Owner contends that Stanziale '062 does not satisfy certain limitations of claim 1, per Grounds 3 and 4 (*see* Prelim. Resp. 23–31), which we address in turn.

1. “mounted to”

Petitioner argues that Stanziale '062 discloses “string guide[s]” “mounted to” respective “limb[s],” per claim 1 of the '015 Patent. *See* Pet. 37.

Patent Owner contends that — in a manner similar to that discussed above, regarding Stanziale '302 — Stanziale '062 does not teach the “mounted to” limitation of claim 1, because Stanziale '062 employs various intermediate elements that link the structures that Petitioner maps to the “string guide[s]” and the respective “limb[s].” *See* Prelim. Resp. 3–7, 23–28.

As stated above (regarding Grounds 1 and 2), at this stage in the proceeding, the parties have not fully developed this claim construction issue. We encourage the parties to address this issue in subsequent briefing.

2. “*helical power cable take-up journal[s] extending in a direction perpendicular to the . . . plane[s] of rotation of”*
respective “draw string journal[s]””

According to Patent Owner, Stanziale ’062 lacks claim 1’s “first helical power cable take-up journal extending in a direction perpendicular to the first plane of rotation of the first draw string journal” and “second helical power cable take-up journal extending in a direction perpendicular to the second plane of rotation of the second draw string journal.” *See* Prelim. Resp. 28–29.

Petitioner maps claim 1’s “helical power cable take-up journal[s]” to element 1461 of Stanziale ’062, which (per Figure 22 of the reference) shares a common axis of rotation (element 150) with the element Petitioner maps to claim 1’s “draw string journal[s]” (i.e., element 1451 of Stanziale ’062). *See* Pet. 38–39 (citing Ex. 1011, 17:20–25, 29:8–9, 18:4–9, 29:10–13, Figs. 17, 22; Ex. 1016 ¶¶ 162–164). Petitioner (*id.* at 38) provides an annotated version of Figure 22 of Stanziale ’062, reproduced below, to illustrate this arrangement.

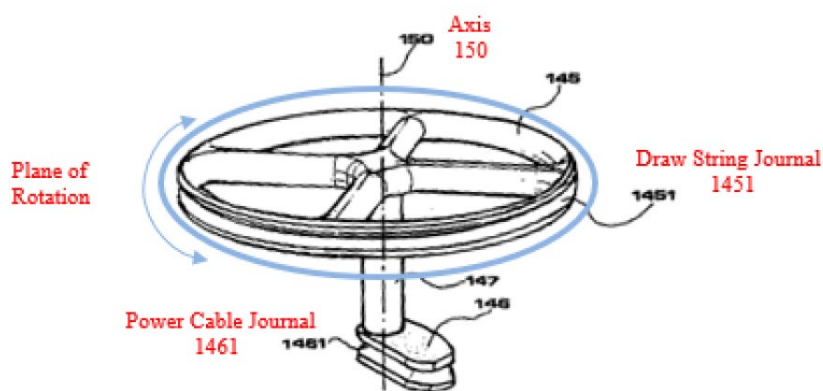


FIG.22

Stanziale '062 - FIG. 22
(String Guide Only)

Petitioner's annotated Figure 22 shows a portion of a Stanziale '062 embodiment, to which Petitioner added the labels "Axis 150," "Draw String Journal 1451," and "Power Cable Journal 1461" to identify the corresponding mapped structure. *Id.* Petitioner also added a blue oval and blue arrows with the label "Plane of Rotation." *Id.*

Further, Stanziale '062 explicitly teaches a helical form of element 1461: "The groove 1461 has a spiral or helical shape, so as to wind a plurality of turns of flexible force element 37." Ex. 1011, 18:8–9. On account of its common axis of rotation with the respective "string journal," Petitioner contends that due to its helical nature, element 1461 "wraps in a direction perpendicular to the draw string journal's plane of rotation." Pet. 38 (citing Ex. 1011, 18:4–9, 29:10–13, Figs. 17, 22; Ex. 1016 ¶ 163).

In view of Petitioner's explanation, for the purposes of the present Decision (i.e., concerning whether Petitioner would be reasonably likely to prevail, per 35 U.S.C. § 314(a)), we are persuaded that Stanziale '062 sufficiently discloses claim 1's "helical power cable take-up journal[s] extending in a direction perpendicular to the . . . plane[s] of rotation of" respective "draw string journal[s]."

3. *"as the bow is drawn from the released configuration to the drawn configuration the first and second power cables . . . are displaced along the first and second axes away from the first and second planes of rotation of the first and second draw string journals, respectively"*

According to Patent Owner, Stanziale '062 lacks claim 1's recitation "as the bow is drawn from the released configuration to the drawn configuration the first and second power cables . . . are displaced along the first and second axes away from the first and second planes of rotation of the

first and second draw string journals, respectively.” *See* Prelim. Resp. 29–31.

Petitioner appears to concede that this limitation is not disclosed explicitly in the reference, stating: “The helical nature of journals 1461 means that a POSA would at once envisage that the cable 37 wraps on those journals in one of two directions along the axis 150: toward the string planes of rotation or away.” Pet. 39 (citing Ex. 1016 ¶ 167).

Accordingly, for the purposes of the present Decision, we are not persuaded that Stanziale ’062 sufficiently discloses claim 1’s recitation “as the bow is drawn from the released configuration to the drawn configuration the first and second power cables . . . are displaced along the first and second axes away from the first and second planes of rotation of the first and second draw string journals, respectively.”

4. *Petitioner’s Proposed Modifications to Stanziale ’062*
(Ground 4)

In addition to contending that Stanziale ’062 teaches all the limitations of claim 1 (per Ground 3), Petitioner contends that claim 1 would be obvious (per Ground 4), because Stanziale ’062 suggests limitations that Patent Owner might dispute: “string guide[s]” (each in the form of an integral element); annular “draw string journal[s]”; “helical power cable take-up journal[s]”; and “first and second power cables wrap onto the first and second helical, power cable take-up journals and are displaced along the first and second axes away from the first and second planes of rotation of the first and second draw string journals, respectively.” *See* Pet. 40.

As discussed in the previous subsection, Patent Owner disputes Petitioner’s position that Stanziale ’062 teaches the feature of “the first and

second power cables . . . are displaced along the first and second axes away from the first and second planes of rotation of the first and second draw string journals, respectively.” *See* Prelim. Resp. 29–31.

Petitioner argues that Stanziale ’062, nevertheless, suggests this feature of claim 1, because “such wrapping direction would nevertheless be obvious to try, since there can only be two options (toward the string planes of rotation or away).” Pet. 40 (citing Ex. 1016 ¶ 173; *KSR*, 550 U.S. at 421).

Petitioner advances the same argument addressed above (in regard to Stanziale ’302). For the same reasons provided, in regard to Stanziale ’302, we determine that — based upon the present record, and for the purposes of the present Decision — Petitioner does not provide a sufficient reason for modifying Stanziale ’062, in order satisfy claim 1’s feature of “the first and second power cables . . . are displaced along the first and second axes away from the first and second planes of rotation of the first and second draw string journals, respectively.”

G. Grounds Based on Stanziale ’771 (Grounds 5 and 6)

Petitioner contends that Stanziale ’771 anticipates claim 1 (Ground 5) and that claim 1 is, at least, obvious over Stanziale ’771 (Ground 6). *See* Pet. 41–45.

Patent Owner contends that Stanziale ’771 does not satisfy certain limitations of claim 1, per Grounds 5 and 6 (*see* Prelim. Resp. 31–37), which we address in turn.

1. “mounted to”

Petitioner argues that Stanziale ’771 discloses “string guide[s]” “mounted to” respective “limb[s],” per claim 1 of the ’015 Patent. *See* Pet. 41–42.

Patent Owner contends that — in a manner similar to that discussed above, regarding Stanziale ’302 and Stanziale ’062 — Stanziale ’771 does not teach the “mounted to” limitation of claim 1, because Stanziale ’771 employs various intermediate elements that link the structures that Petitioner maps to the “string guide[s]” and the respective “limb[s].” *See* Prelim. Resp. 3–7, 31–36.

As stated above (regarding Grounds 1–4), at this stage in the proceeding, the parties have not fully developed this claim construction issue. We encourage the parties to address this issue in subsequent briefing.

2. *“helical power cable take-up journal[s] extending in a direction perpendicular to the . . . plane[s] of rotation of” respective “draw string journal[s]”*

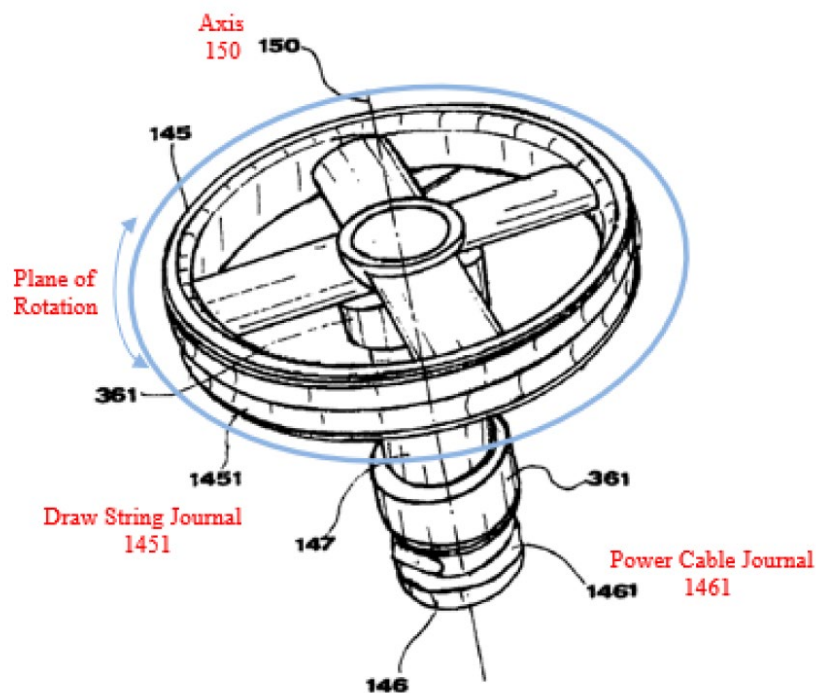
According to Patent Owner, Stanziale ’771 lacks claim 1’s “first helical power cable take-up journal extending in a direction perpendicular to the first plane of rotation of the first draw string journal” and “second helical power cable take-up journal extending in a direction perpendicular to the second plane of rotation of the second draw string journal.” *See* Prelim. Resp. 36–37.

Petitioner maps claim 1’s “helical power cable take-up journal[s]” to element 1461 of Stanziale ’771, which (per Figure 9 of the reference) shares a common axis of rotation (element 150) with the element Petitioner maps to claim 1’s “draw string journal[s]” (i.e., element 1451 of Stanziale ’771). *See* Pet. 42–43 (citing Ex. 1012, 17:34–18:5¹¹, 26:11–23, Figs. 1, 2, 5, 8–10A, 12, 18, 19; Ex. 1016 ¶¶ 180–181). Further, Stanziale ’771 explicitly teaches

¹¹ The Petition contains a typographical error, indicating the range “17:34–17:5” of Ex. 1012. Pet. 43.

a helical form of element 1461: “The groove 1461 has a spiral or helical shape, so as to wind a plurality of turns of flexible force element 37.”

Ex. 1012, 18:4–5. Petitioner (Pet. 42) provides an annotated version of Figure 9 of Stanziale ’771, reproduced below, to illustrate the arrangement of identified elements.



Stanziale '771 - FIG. 9
(String Guide Only)

Petitioner’s annotated Figure 9 shows a portion of a Stanziale ’771 embodiment, to which Petitioner added the labels “Axis 150,” “Draw String Journal 1451,” and “Power Cable Journal 1461” to identify the corresponding mapped structure. *Id.* Petitioner also added a blue oval and blue arrows with the label “Plane of Rotation.” *Id.*

On account of its common axis of rotation with the respective “draw string journal,” Petitioner contends that element mapped to the “helical power cable take-up journal (called track or groove) 1461 that, due to its

helical nature, wraps in a direction perpendicular to the draw string journal's plane of rotation.” Pet. 43 (citing Ex. 1012, 17:34–18:5, Figs. 1, 5, 8–10A, 12; Ex. 1016 ¶ 181).

In view of Petitioner's explanation, for the purposes of the present Decision (i.e., concerning whether Petitioner would be reasonably likely to prevail, per 35 U.S.C. § 314(a)), we are persuaded that Stanziale '771 sufficiently discloses claim 1's “helical power cable take-up journal[s] extending in a direction perpendicular to the . . . plane[s] of rotation of” respective “draw string journal[s].”

3. *Petitioner's Proposed Modifications to Stanziale '771*
(Ground 6)

In addition to contending that Stanziale '771 teaches all the limitations of claim 1 (per Ground 5), Petitioner contends that claim 1 would have been obvious (per Ground 6), because Stanziale '771 suggests certain claim limitations that Patent Owner might dispute: “string guide[s]” (each in the form of an integral element); annular “draw string journal[s]”; “helical power cable take-up journal[s]”; and “first and second power cables wrap onto the first and second helical, power cable take-up journals and are displaced along the first and second axes away from the first and second planes of rotation of the first and second draw string journals, respectively.” See Pet. 44–45.

Patent Owner (*see* Prelim. Resp. 31–37) does not explicitly dispute whether Stanziale '771 teaches any of the limitations that Petitioner argues, in the alternative, would have been obvious to a person of ordinary skill in the art.

However, Patent Owner appears to dispute Petitioner’s position that Stanziale ’771 renders obvious the feature of “the first and second power cables . . . are displaced along the first and second axes away from the first and second planes of rotation of the first and second draw string journals, respectively.” *See* Prelim. Resp. 46–47. Petitioner’s argument, to the effect that Stanziale ’771 suggests this feature of claim 1 (*see* Pet. 45), is essentially the same as the argument addressed above (in regard to Stanziale ’302 for Ground 2). Patent Owner addresses this matter collectively, as to Stanziale ’302, Stanziale ’062, and Stanziale ’771 (Grounds 2, 4, and 6). *See* Prelim. Resp. 46–47. Accordingly, the discussion above — regarding the adequacy of Petitioner’s argument for modifying Stanziale ’302 — also applies here.

H. Ground 7 (Darlington/Norkus) and Ground 8 (Darlington/Park)

For the reasons provided herein, we determine that Petitioner has established a reasonable likelihood that it would prevail in showing unpatentability of claim 1 of the ’015 Patent, under Ground 7 and Ground 8.

Petitioner contends that claim 1 is obvious over the combination of Darlington and Norkus (Ground 7) and over the combination of Darlington and Park (Ground 8). *See* Pet. 18, 45–52.

Petitioner contends that Darlington teaches all the limitations of claim 1, except for the recited “helical” features of the “power cable take-up journal[s]” that “extend[] in a direction perpendicular to the” corresponding “plane[s] of rotation,” as well as the associated “recei[pt]” and “wrap[ping]” of the “power cable[s]” (about the “helical” “power cable take-up journal[s]”) and their “displace[ment] along the first and second axes away

from the first and second planes of rotation of the first and second draw string journals, respectively.” *See* Pet. 45–48 (citing Ex. 1016 ¶¶ 195–204).

Indeed, per Petitioner’s mapping to claim 1, Darlington (Ex. 1013) discloses: a “crossbow” (*id.* at Figs. 1–18, e.g., Fig. 18 element 140’) comprising a “central portion” (*id.* at Fig. 18, element 12) having a “down-range side” and an “up-range side” (*id.* ¶ 38, Fig. 18); “first and second flexible limbs attached to the central portion” (*id.* ¶¶ 2, 38, Fig. 18, elements 16A, 16B); “first” and “second” “string guide[s]” (*id.* at Fig. 18, elements 102, 104) “mounted to” respective “bow limb[s]” and “rotatable around” respective “first” and “second” “ax[es]” (*id.* ¶¶ 45, 56, 60, Figs. 16, 18, elements 34A, 34B); the “string guide[s]” comprising “first” and “second” “draw string journal[s]” (*id.* at Fig. 18, elements 102A, 104A) having respective “plane[s] of rotation” “perpendicular to” the respective “ax[es]” (*id.* ¶ 57, Figs. 14, 15, 18, elements 34A, 34B); “first” and “second” “power cable take-up journal[s]” (*id.* ¶¶ 56–57, Figs. 14, 18, elements 102B, 104B); “a draw string received in the first and second draw string journals” (*id.* ¶¶ 3, 10, 56, Figs. 14, 18, element 32) and “secured to the crossbow in a reverse draw configuration with the draw string adjacent the down-range side of the string guides in a released configuration, wherein the draw string translates from the down-range side toward the up-range side and unwinds between the first and second string guides to a drawn configuration” (*id.* ¶¶ 10, 21, 29, 33, 35, 42, 54, 59, 61, claim 1, Figs. 4, 12, 16, 18); “first” and “second” “power cable[s]” “received in” the respective “power cable take-up journal[s]” (*id.* ¶¶ 3–4, 10, 56–57, Figs. 14, 18, elements 28, 30); “wherein as the bow is drawn from the released configuration to the drawn configuration the first and second power cables wrap onto” the “first” and

“second” “power cable take-up journals” (*id.* ¶ 57, claim 1). *See* Pet. 45–48 (citing Ex. 1016 ¶¶ 195–204).

Patent Owner’s Preliminary Response does not challenge any aspect of Petitioner’s mapping of claim 1’s limitations to Darlington.

Petitioner relies upon Norkus (Ground 7) and Park (Ground 8) for teaching or suggesting the claim 1 limitations relating to the “helical” features of the “power cable take-up journal[s].” *See* Pet. 48–51.

As to Norkus, Petitioner contends that “Norkus discloses a bow cam 18 that includes a planar journal 28 for the bowstring 22 and a helical journal 30 for the power cable 24.” Pet. 48 (citing Ex. 1010, 2:60–3:7, 3:42–48, Fig. 7; Ex. 1016 ¶ 205). Indeed, Figure 7 of Norkus shows that, per claim 1 of the ’015 Patent, the “wrap[ping]” of cable 24 onto Norkus’ helical groove 30 would “displace[]” the “power cable[]” along the “ax[is] away from” the respective “plane[] of rotation” of the associated “draw string journal[].” *See* Ex. 1010, 2:66–3:7.

Patent Owner’s Preliminary Response does not challenge any of Petitioner’s mapping of claim 1’s limitations relating to the “helical” features to Norkus. Patent Owner’s Preliminary Response also does not dispute Petitioner’s position that the combination of Darlington and Norkus teaches or suggests all of the limitations of claim 1 of the ’015 Patent.

Per Petitioner’s mapping, and based upon the present record, we are persuaded that the combination of Darlington and Norkus sufficiently teaches or suggests all of the limitations of claim 1 of the ’015 Patent, for the purposes of determining whether Petitioner has satisfied the threshold for institution, based upon Ground 7.

As to Park, Petitioner contends that “Park discloses multiple archery string guides (cams or pulleys) having helical power cable take-up journals extending perpendicular to axes Ax.” Pet. 50 (citing Ex. 1009, Figs. 4B, 7–9B, 14, 15, 17A–23C; Ex. 1016 ¶ 211).

Patent Owner’s Preliminary Response does not challenge any of Petitioner’s mapping of claim 1’s limitations relating to the “helical” features to Park. Patent Owner’s Preliminary Response also does not dispute Petitioner’s position that the combination of Darlington and Park teaches or suggests all of the limitations of claim 1 of the ’015 Patent.

Per Petitioner’s mapping, and based upon the present record, we are persuaded that the combination of Darlington and Park sufficiently teaches or suggests all of the limitations of claim 1 of the ’015 Patent, for the purposes of determining whether Petitioner has satisfied the threshold for institution, based upon Ground 8.

Petitioner provides adequate reasons for combining/modifying the teachings of the Darlington/Norkus and Darlington/Park combinations, for the purposes of the present Decision.

Petitioner points out that “Darlington teaches the desirability of ‘a higher level of stored energy’ and increased power stroke (*i.e.*, the distance of travel of the bowstring between the drawn and released configurations), which ‘results in better performance.’” Pet. 49 (citing Ex. 1013 ¶¶ 3, 15, 42; Ex. 1016 ¶ 206).

Further, Petitioner contends that Norkus “teaches the desirability of more energy storage, which is directly impacted by increased power stroke” and that such a “longer power stroke is accomplished by allowing the cams (which receive the bowstring) to rotate more than once (*e.g.*, approximately

720 degrees), which is accomplished by using helical cable journals.” Pet. 49 (citing Ex. 1010, 1:24–49, 1:55–62, 3:2–7; Ex. 1016 ¶ 206).

Petitioner contends that, in view of the identified teachings, a person of ordinary skill, at the appropriate time, would have been “motivated to further increase Darlington’s power stroke (and energy storage)” and “utilize the design of Norkus’s helical cable journals to facilitate the increased power stroke, which result would be reasonably expected from this combination,” thus rendering claim 1 obvious. Pet. 49–50 (citing Ex. 1016 ¶¶ 206, 207).

As to the Darlington/Park combination (Ground 8), Petitioner contends that “Park explains that a bow’s draw length (also known as power stroke) is affected by the distance between the cam axles as well as the length of the string wound on such cams.” Pet. 50 (citing Ex. 1009 ¶¶ 9, 18; Ex. 1016 ¶ 212). Consequently, Petitioner contends, “if a bow has a reduced axle-to-axle distance (which is desired to make the bow easier to shoot when around obstacles), then the amount of string wound on the cams should increase to maintain the same draw length. *Id.* at 50–51 (citing Ex. 1009 ¶¶ 9, 18, 27; Ex. 1016 ¶ 212). According to Petitioner, “prior art cams can only accommodate 270 degrees of rotation without string overlap.” *Id.* at 51 (citing Ex. 1009 ¶¶ 13, 18; Ex. 1016 ¶ 212). “Thus to increase the amount of cable wound on the cams without overlapping, Park discloses helical journals, which allow rotation of 360 degrees, 540 degrees, 650 degrees, and even up to 900 degrees,” wherein, “[t]he length of the helical grooves determines the amount of cam rotation without cable overlap.” *Id.* (citing Ex. 1009 ¶¶ 25, 31, 35, 87, 98, 112; Ex. 1016 ¶ 212). Petitioner points out that Park discloses the application of such helical journals to crossbows. *Id.* (citing Ex. 1009 ¶ 124; Ex. 1016 ¶ 212). Consequently, Petitioner contends,

a person of ordinary skill in the art, at the relevant time, would have reasonably sought to increase the power stroke of Darlington’s crossbow, by applying Park’s helical power cable journals (that allow more cable to would and unwind thereon), thus rendering claim 1 obvious. *Id.* at 51–52 (citing Ex. 1013 ¶ 3, 15, 42; Ex. 1016 ¶¶ 212, 214).

Patent Owner disputes the sufficiency of Petitioner’s proposed reasons to combine/modify the prior art teachings identified in the Darlington/Norkus combination (Ground 7) and the Darlington/Park combination (Ground 8). *See* Prelim. Resp. 37–40, 48–51.

Based upon the present record, we determine Petitioner’s reasons to combine/modify, as to Ground 7 and Ground 8, to be sufficient for the purposes of the present Decision.

Patent Owner contends that Grounds 7 and 8 are deficient, because “Darlington expressly *teaches away* from implementing power cable take-up journals that ‘displace[]’ the power cables when the bow is drawn,” as claim 1 recites. Prelim. Resp. 39 (alteration in original). Patent Owner contends that Darlington teaches away from the combinations of Grounds 7 and 8, because (contrary to claim 1’s limitation of “power cables” “displaced along the first and second axes away from the first and second planes of rotation of the first and second draw string journals”), “Darlington explains that, in its crossbow, the first and second power cables must ‘remain substantially parallel to each other,’” when the bow is drawn. *Id.* (citing Ex. 1013 ¶ 46); *see also id.* at 39–40 (citing Ex. 1013 ¶¶ 41–43, 53).

Based upon the present record, Darlington does not appear to teach away from the combinations of prior art teachings in Grounds 7 and 8. “A reference may be said to teach away when a person of ordinary skill, upon

reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.” *Ricoh Co., Ltd. v. Quanta Computer, Inc.*, 550 F.3d 1325, 1332 (Fed. Cir. 2008) (quoting *Optivus Tech., Inc. v. Ion Beam Applications S.A.*, 469 F.3d 978, 989 (Fed. Cir. 2006)). Notably, it is not clear from Patent Owner’s arguments, why the combinations of Grounds 7 and 8 would conflict with Darlington’s disclosure of a bowstring and power cables “substantially parallel” to each other. *See* Ex. 1013 ¶¶ 41, 43.

Indeed, Darlington describes the “substantially parallel” configuration of the bowstring and power cables as one that renders the power cables “provided a sufficient vertical distance apart to allow the arrow pass between them.” *Id.* ¶ 43. Such “substantially parallel” portions of the cables would not appear to be affected by the portions of the power cables being “wrap[ped] onto the first and second helical, power cable take-up journals,” so as to be “displaced along the first and second axes away from the first and second planes of rotation of the first and second draw string journals, respectively,” per claim 1. Moreover, even if the combinations of prior art references in Grounds 7 and 8 were at odds with Darlington’s “substantially parallel” teaching, this would not necessarily defeat Petitioner’s obviousness arguments. Indeed, “[t]he fact that the motivating benefit comes at the expense of another benefit, however, should not nullify its use as a basis to modify the disclosure of one reference with the teachings of another,” because “the benefits, both lost and gained, should be weighed against one another.” *Winner Int’l Royalty Corp. v. Wang*, 202 F.3d 1340, 1349 n.8 (Fed. Cir. 2000); *see also Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1165 (Fed. Cir. 2006) (“[A] given course of action often has simultaneous

advantages and disadvantages, and this does not necessarily obviate motivation to combine.”)

In addition to arguing that Darlington teaches away from the combinations of Grounds 7 and 8, Patent Owner disputes the sufficiency of Petitioner’s reasons to combine/modify the identified prior art teachings. *See* Prelim. Resp. 49–51.

In one aspect, Patent Owner contends that the identified prior art “teachings such as ‘more energy storage’ or ‘increased power stroke’ in a crossbow are neither unique nor relegated to the references Petitioner identifies”; “[r]ather, any functional crossbow-related art would likely have this general motivation.” Prelim. Resp. 50. Yet, Patent Owner provides no basis for the apparent assertion that motivating reasons must be “unique” to the asserted references — or that a “general motivation,” such as increasing the amount of energy conveyed to an arrow, would be deficient.

In another aspect, Patent Owner contends that “Petitioner fails to explain *why* or *how* adding helical journals as described in Norkus and Park to the Darlington crossbow would actually increase the power stroke.” Prelim. Resp. 50. To the contrary, Petitioner does not argue that helical journals might be added to Darlington in isolation, as Patent Owner suggests. *See id.* (“[S]imply adding helical journals would not have th[e] result” of an “increased power stroke.” “Rather, this outcome would require additional changes to the crossbow, *e.g.*, increasing the distance the power cables must travel when the crossbow is drawn.”) Instead, Petitioner explains how helical journals would be implemented, in conjunction with other identified prior art teachings, in a manner that would accomplish the identified improvement. *See* Pet. 48–51. Such situations often occur in

various technical fields, because “the interaction of multiple components means that changing one component often requires the others to be modified as well.” *KSR*, 550 U.S. at 424. Petitioner adequately accounts for such additional modifications. *See* Pet. 49–50 (“Thus a POSA would be motivated to further increase Darlington’s power stroke (and energy storage) and would utilize the design of Norkus’s helical cable journals to facilitate the increased power stroke, which result would be reasonably expected from this combination. (Ex. 1016 ¶206.)”), 51 (“Thus a POSA wishing to increase a crossbow’s power stroke (per [Darlington] Ex. 1013 [0003], [0015], [0042]) would be motivated to use helical power cable journals (per Park), which allow more cable to be wound and unwound, as would be reasonably expected from such a combination. (Ex. 1016 ¶212.)”)

In view of the foregoing, we determine that Petitioner has established a reasonable likelihood that it would prevail in showing unpatentability of claim 1 of the ’015 Patent, under Ground 7 and under Ground 8.

I. Grounds Based Upon Kempf ’871 (Grounds 9–11)

Petitioner contends that claim 1 is obvious over the combination of Kempf ’871 and Norkus (Ground 9), over the combination of Kempf ’871 and Park (Ground 10), and over the combination of Kempf ’871 and Stanziale ’302 (Ground 11). *See* Pet. 18, 52–58.

Patent Owner contends that Kempf ’871 does not satisfy certain limitations of claim 1, per Grounds 9–11 (*see* Prelim. Resp. 40–43), which we address in turn.

1. “second draw string journal”

Petitioner argues that Kempf ’871 discloses both a “first draw string journal” and a “second draw string journal,” per claim 1 of the ’015 Patent. *See* Pet. 54.

Patent Owner contends that Kempf ’871 lacks the “second draw string journal.” *See* Prelim. Resp. 41–42.

The recited “first” and “second” “draw string journal[s],” of claim 1 of the ’015 Patent, are parts of respective “first” and “second” “string guides.” Ex. 1001, 8:1–3, 8:8–10.

Petitioner maps the claimed “string guides” to pulley 28 and cam 36 of Kempf ’871. *See* Pet. 53 (citing Ex. 1014, 3:57–66, 4:12–13, Fig. 1; Ex. 1016 ¶ 219). Further, Petitioner maps claim 1’s “draw string journal[s]” to outer track 30 disclosed in Kempf ’871: “Each string guide has a draw string journal (called outer track) 30 having a plane of rotation (*e.g.*, formed by the wound string 48) perpendicular to the respective axis of rotation 34, 38.” *Id.* at 54 (citing Ex. 1014, 3:57–59, 4:13–19, Fig. 1; Ex. 1016 ¶ 220).

Yet, as Patent Owner indicates, “Kempf ’871 only discloses outer track (30) as part of pulley (28) — the first string guide,” whereas “cam (36) — the second string guide — does *not* have an outer track (30).” Prelim. Resp. 41 (citing Ex. 1014, 3:57–59, 3:64–66, Fig. 1). Thus, Kempf ’871 appears to lack the element that, per Petitioner’s mapping, purportedly forms claim 1’s “second draw string journal.” *See id.*

Accordingly, for the purposes of the present Decision, we are not persuaded that Kempf ’871 sufficiently discloses claim 1’s recited “second draw string journal.”

2. “second” “power cable take-up journal”

Petitioner argues that Kempf ’871 discloses both “first” and “second” “power cable take-up journal[s],” per claim 1 of the ’015 Patent. *See* Pet. 54.

Patent Owner contends that Kempf ’871 lacks the “second” “power cable take-up journal.” *See* Prelim. Resp. 42–43.

The parties’ arguments mirror those addressed in regard to the “second draw string journal,” in the previous subsection. Notably, each of the recited “power cable take-up journal[s]” is part of a respective “first” and “second” “string guides.” Ex. 1001, 8:1–5, 8:8–12. As discussed in the previous subsection, Petitioner maps the recited “first” and “second” “string guides” to pulley 28 and cam 36 of Kempf ’871. *See* Pet. 53 (citing Ex. 1014, 3:57–66, 4:12–13, Fig. 1; Ex. 1016 ¶ 219). Yet, as Patent Owner indicates, the element that Petitioner maps to each “power cable take-up journal” — i.e., inner track 32 of Kempf ’871 (*see* Pet. 54) — is part of pulley 28 of Kempf ’871, but not cam 36. *See* Prelim. Resp. 43.

Accordingly, for the purposes of the present Decision, we are not persuaded that Kempf ’871 sufficiently discloses claim 1’s recited “second” “power cable take-up journal.”

3. *Proposed Combinations of Kempf ’871 with Norkus (Ground 9), Park (Ground 10), and Stanziale ’302 (Ground 11)*

As to Petitioner’s proposed combinations of Kempf ’871 with Norkus (Ground 9), Park (Ground 10), and Stanziale ’302 (Ground 11), Patent Owner criticizes Petitioner’s reliance upon modifications that could purportedly increase a crossbow’s power. *See* Prelim. Resp. 51 (citing Pet. 55–58). Patent Owner states that such attributes “are neither unique nor relegated to the references identified by Petitioner.” *Id.*

As discussed above (regarding Grounds 7 and 8), Patent Owner does not present a basis for the apparent assertion that motivating reasons must be “unique” or “relegated” to the identified references.

J. Ground 12 (Islas/Darlington/Park)

In Ground 12, Petitioner contends that claim 1 is obvious over the combination of Islas, Darlington, and Park. *See* Pet. 18, 58–62.

Ground 12 is not significantly different from Ground 8 (based upon the combination of Darlington and Park). Both Ground 8 and Ground 12 rely upon Park for teachings related to the “helical” feature of claim 1’s recited “helical power cable take-up journal[s].” *See* Pet. 50–51, 61. In Ground 8, Petitioner maps all the other features of claim 1 to Darlington. *See id.* at 45–48, 50. In Ground 12, such features are mapped to Islas, except for those features of claim 1 that concern the recited “reverse draw configuration” — these features are, instead, mapped to Darlington. *See id.* at 60–61.

The above discussion of Ground 8 explains that Petitioner’s reliance upon Park, in combination with Darlington, is sufficient to establish a reasonable likelihood of prevailing, at trial, as to claim 1 — including the reasonable likelihood of showing whether Darlington teaches the “reverse draw configuration,” the propriety of mapping the “helical” features to Park, and the propriety of combining Park with Darlington. These determinations apply equally to Ground 12.

As to Ground 12, Patent Owner does not challenge the mapping of any of claim 1’s limitations to Islas. Thus, we turn to Patent Owner’s arguments regarding the proposed reasons for combining Islas with Darlington and Park. *See* Prelim. Resp. 43–45, 52–54.

Patent Owner contends that “Islas teaches away from the proposed combination with Darlington because such a combination would be inoperable for its intended purpose.” Prelim. Resp. 43. Specifically, Patent Owner addresses Darlington’s disclosure of the bowstring (i.e., the “draw string” of claim 1) being “vertically disposed in between the first power cable 28 and the second power cable 30,” which “allow[s] the bowstring 32 to be pulled away from the riser 20 and through the first power cable 28 and second power cable 30.” *Id.* at 45 (citing Ex. 1013 ¶¶ 41–42). “In Islas, however,” the Preliminary Response states, “the bowstring is positioned on top of the stock and therefore above the power cables, not between them.” *Id.* (citing Ex. 1015 ¶ 14, Fig. 1). According to Patent Owner, “attempting to implement Darlington’s reverse-draw configuration in Islas would result in interference between the power cables and the drawstring as the crossbow is drawn and the drawstring is forced to cross and tangle with the upper power cables.” *Id.* Thus, “Islas and Darlington in combination teach away from Ground 12’s proposed combination.” *Id.*

Yet, the Patent Owner does not adequately explain the reason for the proposed “interference” between Islas’ power cables and drawstring in the proposed modification. Moreover, in an obviousness inquiry, “the criterion [is] not whether the references could be physically combined but whether the claimed inventions are rendered obvious by the teachings of the prior art as a whole.” *In re Etter*, 756 F.2d 852, 859 (Fed. Cir. 1985) (en banc).

In addition, Patent Owner repeats the concern — raised in regard to Grounds 7 and 8 (*see* Prelim. Resp. 39) — that Darlington teaches away from claim 1’s limitation of “power cables wrap[ping] onto” “helical power cable take-up journals,” whereby they are “displaced . . . away from the first

and second planes of rotation of the first and second draw string journals, respectively” (*id.* at 52–53), because the power cables of Darlington’s crossbow “must ‘remain substantially parallel to each other,’” when the bow is drawn. *Id.* at 39 (citing Ex. 1013 ¶ 46); *see also id.* at 39–40 (citing Ex. 1013 ¶¶ 41–43, 53).

As discussed herein (in regard to Grounds 7 and 8), even if it were critical to maintain the parallel arrangement of the draw string and the power cables, it is not clear why the claimed “displacement” would conflict with the identified parallel arrangement shown in Darlington.

In addition, Patent Owner disputes the sufficiency of Petitioner’s reason for combining claim 1’s “reverse draw configuration” feature (based upon Darlington’s teachings) with Islas. Prelim. Resp. 53. Petitioner contends that a person of ordinary skill in the art would have done so, in order to increase the crossbow’s power stroke and resulting speed. *See* Pet. 60 (citing Ex. 1013 ¶ 42; Ex. 1015 ¶¶ 4, 6; Ex. 1016 ¶ 250). Patent Owner argues:

teachings such as “more energy storage” or “increased power stroke” in a crossbow are neither unique nor constrained to the laundry list of references Petitioner identifies. Rather, any functional crossbow-related art would have this generic motivation. Such cursory arguments should be rejected.

Prelim. Resp. 53.

As discussed elsewhere herein, Patent Owner does not provide a basis for the apparent assertion that reasons to combine/modify prior art teachings may not employ such a so-called “generic motivation.”

K. Specificity of Grounds 3–12

Patent Owner contends that Grounds 3–12 fail to provide the requisite specificity in applying the cited references to the limitations of claim 1, per 35 U.S.C. § 312(a)(3) and 37 C.F.R. § 42.104(b)(4). *See* Prelim. Resp. 54–57.

In accordance with the analysis of the Petition, herein, it does not appear that the alleged lack of specificity provides a basis for denying the Petition.

IV. CONCLUSION

After considering the evidence and arguments presented in the current record, we determine that Petitioner has demonstrated a reasonable likelihood that it would prevail with respect to the one claim of the '015 Patent challenged in the Petition. This standard is satisfied as to at least one Ground of the Petition (i.e., Grounds 7 and 8). Therefore, we institute *inter partes* review on all grounds presented in the Petition. *See SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1352–53, 1359–60 (2018), 37 C.F.R. § 42.108(a) (“When instituting . . . review, the Board will authorize the review to proceed on all of the challenged claims and on all grounds of unpatentability asserted for each claim.”)

Further, we decline to exercise our delegated discretion to deny institution under *Fintiv*. Thus, we institute *inter partes* review.

We clarify, however, that the analysis, herein, is based only on the record as it stands now and should not be understood as final determination regarding claim construction or patentability. Further, no party should rely on any preliminary finding or determination in this Decision or assume that the evidence cited in this Decision for any preliminary finding or

determination will result in a similar finding or determination in the Final Written Decision after a complete record is developed.

V. ORDER

Accordingly, it is

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claim 1 of the '015 Patent is hereby instituted on all the asserted grounds set forth in the Petition; and

FURTHER ORDERED, that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is given of the institution of a trial, which commences on the entry date of this Decision.

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For PETITIONER:

John M. Skeriotis
Sergey Vernyuk
EMERSON, THOMSON & BENNETT, LLC
jms@etblaw.com
sv@etblaw.com

For PATENT OWNER:

Christopher M. King
FOLEY & LARDNER LLP
cking@foley.com