

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*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

A. *Background and Summary*

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

We instituted a trial as to all challenged claims. Paper 13 ("Decision on Institution" or "Dec. Inst.").

After institution, Patent Owner filed a Response (Paper 25, "PO Resp."). Petitioner filed a Reply (Paper 31, "Pet. Reply"), and Patent Owner filed a Sur-reply (Paper 37, "PO Sur-reply").

An oral hearing was held on April 23, 2024, and a transcript of the hearing is included in the record. Paper 52 ("Tr.").

Following the oral hearing, the Board ordered further briefing on claim construction. Petitioner submitted an Initial Claim Construction Brief (Paper 48,) and a Responsive Claim Construction Brief (Paper 50). Patent Owner submitted an Initial Claim Construction Brief (Paper 47) and a Responsive Claim Construction Brief — Corrected (Paper 51).

We have jurisdiction under 35 U.S.C. § 6(b). This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a). For the reasons discussed below, we determine that Petitioner has shown by a preponderance of the evidence that claim 1 of the '015 patent is unpatentable.

B. *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.

C. Related Matters

As required by 37 C.F.R. § 42.8(b)(2), the parties identify the following related matter (Pet. 3; Paper 6, 1): *Ravin Crossbows, LLC v. Hunter's Mfg. Co., Inc. d/b/a TenPoint Crossbow Technologies*, No. 5:23-cv-00598 (N.D. Ohio) (“*Ravin Crossbows*”) (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.)).

D. 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.

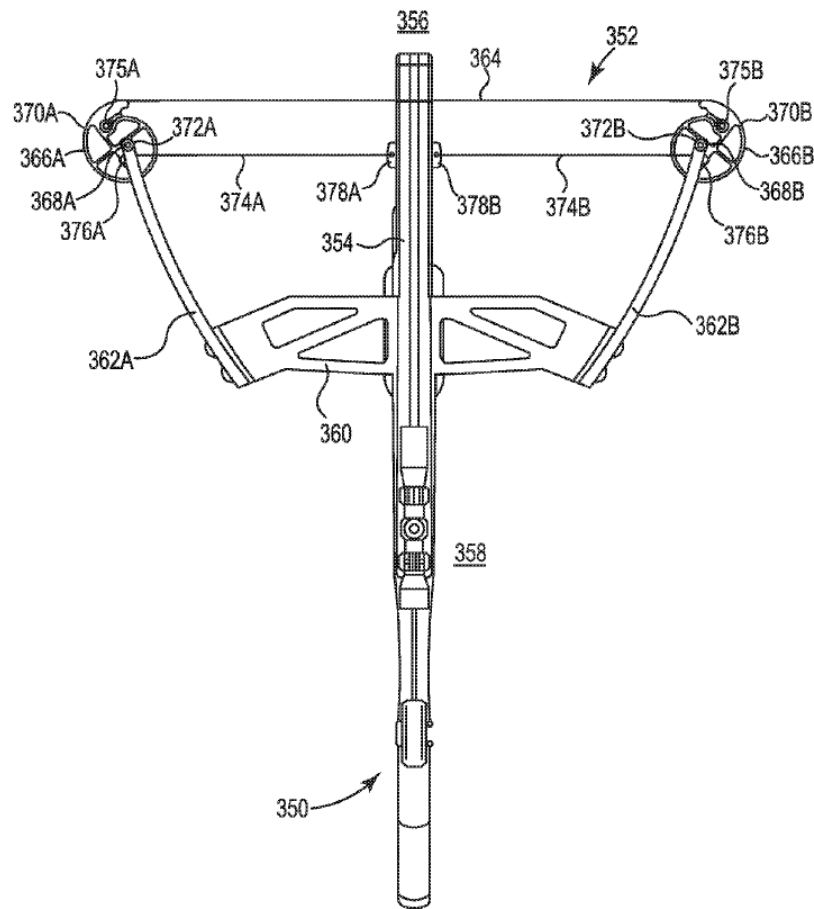


Fig. 12

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.

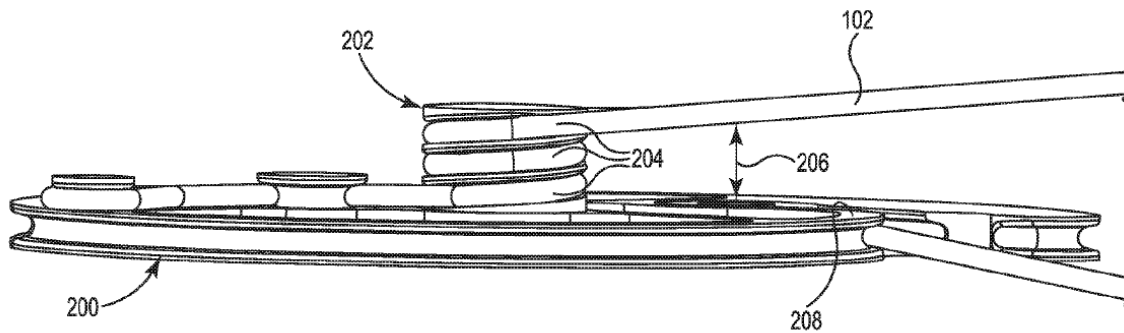


Fig. 9A

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.

E. 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.

F. Evidence

Petitioner relies upon the following references: Stanziale '302¹; Stanziale '062²; Stanziale '771³; Darlington⁴; Norkus⁵; Park⁶; and Kempf '871.⁷

Petitioner also relies upon the declarations of Stephen A. Batzer (Exs. 1016, 1037) in support of its arguments. Patent Owner relies on, inter alia, the declaration of Jonathan Teater (Ex. 2029) in support of its arguments. The parties also rely upon other exhibits, as discussed below.

G. 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
2	1	103	Stanziale '302
3	1	102	Stanziale '062
4	1	103	Stanziale '062
5	1	102	Stanziale '771
6	1	103	Stanziale '771
7	1	103	Darlington, Norkus
8	1	103	Darlington, Park
9	1	103	Kempf '871, Norkus

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).

Ground	Claim Challenged	35 U.S.C. §	Basis/Reference(s)
10	1	103	Kempf '871, Park
11	1	103	Kempf '871, Stanziale '302
12	1	103	Islas, Darlington, Park

II. ANALYSIS

A. *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 Response, Patent Owner does not dispute Petitioner’s proposed qualifications of a person of ordinary skill in the art (‘POSA’).” PO Resp. 3.

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.

B. *Claim Interpretation*

For the reasons below, the Board adopts Petitioner’s construction of the limitation “mounted to,” appearing in claim 1 of the '015 patent: “connected to, either directly or indirectly.”

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 and intrinsic record. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313–14 (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.’” *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)).

By the time of the oral hearing, the only claim construction dispute in this case concerned the meaning of the expression “mounted to” that appears in claim 1, reciting “a first string guide mounted to the first bow limb” and “a second string guide mounted to the second bow limb.”

The Petition states that “the term ‘mounted to’ should be given its plain and ordinary meaning, which, consistent with the specification, means ‘connected to, either directly or indirectly.’” Pet. 26 (citing Ex. 1004, p. 50; Ex. 1001 2:2–9, 5:64–65, 6:5–6, 34–36, 8:1–14, 9:6–25, 10:18–20, Figs. 4–8, 11; Ex. 1002, p. 106; Ex. 1016 ¶ 133).

Patent Owner states that “mounted to” should be given its “ordinary and customary meaning,” contending that such meaning is “physically connected to allow only rotation about a fixed axis.” PO Resp. 4.

Following the oral hearing, the Board issued an Order stating that the expression “mounted to” may need to be “more precisely construed in a way that would account for the operative features of the claim” — particularly the recited “string guide[s],” “bow limb[s],” and “drawstring.” Paper 45, 3.

The Board authorized briefing for the parties to address the following proposed construction of a “string guide” “mounted to” a respective “bow limb” in claim 1: “Each string guide is connected, directly or indirectly, to a respective bow limb, such that the application of force to the string guide, by the drawstring, imparts force to the bow limb.” *Id.*

The Board’s proposal reflects the principle that claim construction begins with the words of the claims themselves. *See Endo Pharms., Inc. v. Actavis LLC*, 922 F.3d 1365, 1370 (Fed. Cir. 2019).

The expression “mounted to,” as it is used in claim 1, concerns the relationship of the “string guide[s]” and the “bow limb[s]” (which respective “string guide[s]” are “mounted to”) in the operation of the claimed crossbow. Claim 1 recites, in part, “a first string guide” that is “mounted to” a “first bow limb” and “rotatable around a first axis” and that has “a first draw string journal having a first plane of rotation perpendicular to the first axis.” Claim 1 further recites a similarly characterized “second string guide” that is “mounted to” a “second bow limb” and “rotatable around a second axis” and that has “a second draw string journal having a second plane of rotation perpendicular to the second axis.”

Further, claim 1 recites a “draw string” disposed in the following manner:

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.

Claim 1 also recites that each “string guide” comprises a respective “helical power cable take-up journal.” In addition, claim 1 recites 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.”

The operational effect of “the draw string translat[ing] from the down range side toward the up-range side and unwind[ing] between the first and second string . . . guides,” whereby “the first and second power cables wrap onto the first and second helical, power cable take-up journals” is clear, from the Specification, which explains that “[t]he power cable take-ups 172 are arranged so that as the bow 150 is drawn, the bow limbs 154 are drawn toward one another.” Ex. 1001, 5:49–51. The flexed limbs store the energy that, when released, propel an arrow. *See id.* at 1:49–51. Thus, the Board’s construction of a “string guide” “mounted to” a respective “bow limb” articulates the recited operation of the “draw string” upon each “string guide” that, via the “power cable take-up journal” and the “power cable,” imparts force to the respective “bow limb.”

In its Initial Claim Construction Brief, Patent Owner notes that the claim construction dispute, regarding the expression “mounted to,” concerns “how much or what degree of indirect connection is permissible between the string guide and the bow limb for the string guide to be ‘mounted to’ the bow limb.” Paper 47, 1. According to Patent Owner, Petitioner’s proposed construction of “mounted to” (“connected to, either directly or indirectly”) is “unbounded” and “provides no useful information to a POSA” in

determining what sort of connection between the “string guide” and “bow limb” would be permissible. *Id.* Hence, Patent Owner purports to “focus[] on the *sole* type of motion of the string guide relative to the bow limb encompassed by the term “mounted to” in relation to these components disclosed in the intrinsic record (i.e., rotation about a fixed axis).” *Id.* Patent Owner criticizes the Board’s proposed construction for not providing “an affirmative limit on the amount or degree of indirect connection between the string guide and the bow limb,” and for not explicitly addressing the role of the “power cables.” *Id.* at 2. The Patent Owner, thus proposes modifying the Board’s proposal, as follows (with added language underlined):

Each string guide is connected, directly or indirectly, to a respective bow limb, such that the application of force to the string guide, by the drawstring, causes the string guide to rotate, thereby causing the power cable to wrap onto the power cable journal and apply a force to the string guide, such that the string guide imparts the force to the bow limb.

Id. at 2–3.

We note that, in the course of transcribing the Board’s proposed construction of “mounted to,” and adding its amendment thereto, Patent Owner added the word “the” to the Board’s proposal, which concludes with “imparts force to the bow limb,” whereas Patent Owner’s version states “imparts *the* force to the bow limb.” Paper 45, 3; Paper 47, 3 (emphasis added). As its briefing shows, Patent Owner attaches great significance to the expression “the force” in its revision. Patent Owner repeatedly refers to the force on claim 1’s “draw string” being the *same force* that the “power cables” impart to the “bow limbs,” even interpreting the Board’s proposal through this lens:

With reference to the power cables and other operative features of claim 1, it is clear that the force the string guide imparts to the bow limb identified in the Board’s proposed construction is the *same force* the power cables impart to the string guide in response to the winding of power cables onto the power cable journal resulting from the drawstring being pulled from the released position to the drawn position.

Paper 47, 2 (emphasis added).

Patent Owner’s description of this “same force” concept is unclear. Also, to the extent we understand Patent Owner’s description, it is at odds with the language of claim 1, because — as Petitioner points out (Paper 50, 5) — claim 1 requires the “draw string” to be connected to each “string guide,” such that the “draw string” applies some force to the “string guide[s],” when drawing the bow. Furthermore, Patent Owner’s “same force” concept appears to be at odds with the Specification, which explains that techniques for increasing the mechanical advantage in drawing the bow — i.e., reducing the force the archer must apply to the drawstring, when drawing the bow — are fundamental to the types of “[m]ore advanced bows” that the Specification describes:

Bows have been used for many years as a weapon for hunting and target shooting. More advanced bows include cams that increase the mechanical advantage associated with the draw of the bowstring. The cams are configured to yield a decrease in draw force near full draw. Such cams preferably use power cables that load the bow limbs.

Ex. 1001, 1:11–16.

Patent Owner’s Initial Claim Construction Brief also restates Patent Owner’s position that the “mounted to” connection of claim 1 permits only rotation, referring to “the *sole* type of motion of the string guide relative to the bow limb encompassed by the term “mounted to” in relation to these

components disclosed in the intrinsic record (i.e., rotation about a fixed axis).” Paper 47, 1.

Claim 1 explicitly states that the “mounted to” connection at issue permits rotation, e.g., “a first string guide mounted to the first bow limb and rotatable around a first axis.” However, the phrase “mounted to” itself does not require rotatability; there is other distinct language in claim 1 that characterizes the connection as “rotatable.”

Like the language of claim 1, itself, the Specification says nothing beyond the “mounted to” connection, between a “string guide” and a “limb,” permitting “rotat[ion].” *See* Ex. 1001, 2:2–3 (“A first string guide is mounted to the first bow limb and rotatable around a first axis.”), 2:8–9 (“A second string guide is mounted to the second bow limb and rotatable around a second axis.”), 5:64–65 (“The first string guide 316A is mounted to the first bow limb 312A and is rotatable around a first axis 318A.”), 6:5–6 (“The second string guide 316B is mounted to the second bow limb 312A and rotatable around a second axis 318B.”), 6:34–36 (“The string guides 366 are mounted to the bow limb 362 and are rotatable around first and second axis 368A, 368B (‘368’), respectively.”)

Notably, the ’015 Specification also employs an expression (“mounted . . . on”) that varies slightly from the language of claim 1 (“mounted to”) to describe the rotatable connection between “limbs” and “[s]tring guides”: “String guides 158A, 158B (‘158’) are rotatably mounted, typically eccentrically, on respective limbs 154A, 154B on respective axles 160A, 160B (‘160’) in a reverse draw configuration 174.” Ex. 1001, 5:23–26.

But, these instances in the Specification do not show what other types of connections would be within the scope of “mounted to.” Importantly, the Federal Circuit has “expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment.” *Phillips*, 415 F.3d at 1323. Further, when interpreting claim language, “[g]eneral descriptive terms will ordinarily be given their full meaning; modifiers will not be added to broad terms standing alone.” *Johnson Worldwide Assocs., Inc. v. Zebco Corp.*, 175 F.3d 985, 989 (Fed. Cir. 1999), *see also Virginia Panel Corp. v. MAC Panel Co.*, 133 F.3d 860, 865–66 (Fed. Cir. 1997) (unmodified term “reciprocating” not limited to linear reciprocation).

Other items in the intrinsic record suggest that the term “mounted to” may include connections other than a rotatable connection. Notably, US 9,494,379 B2 (Ex. 1006) (“the ’379 patent”), which names the same inventor as the ’015 patent and issued from an application that is a continuation-in-part of the application that issued as the ’015 patent (Ex. 1006, code (63)), indicates that a “mounted to” connection permits movement in multiple directions, but does not require any movement at all. Patent Owner also relies upon the ’379 patent, in its Initial Claim Construction Brief. Paper 47, 7–8. Indeed, the Federal Circuit regards related patent applications as part of the intrinsic record available for claim construction. *See Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F.3d 1340, 1350 (Fed. Cir. 2004) (“Any statement of the patentee in the prosecution of a related application as to the scope of the invention would be relevant to claim construction, and the relevance of the statement made in this instance is enhanced by the fact that it was made in an official proceeding in which

the patentee had every incentive to exercise care in characterizing the scope of its invention.”); *Omega Eng’g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1334 (Fed. Cir. 2003) (“[U]nless otherwise compelled, that the same claim term in the same patent or related patents carries the same construed meaning.”)

Like the ’015 patent, the ’379 patent uses the expression “mounted to” to describe a rotatable connection between a “string guide” and a “limb.” *See* Ex. 1006, 7:3–4 (“The string guides 366 are mounted to the bow limb 362 and are rotatable around first and second axis 368A, 368B (‘368’), respectively.”)

The ’379 patent also uses the exact phrase “mounted to,” in describing “tunable arrow rest 750” that “is *mounted to* distal end 776 of the center rail 402 by fasteners 762.” Ex. 1006, 14:64–65, 15:7–9 (emphasis added). Figure 27C of the ’379 patent, reproduced below, shows the tunable arrow rest.

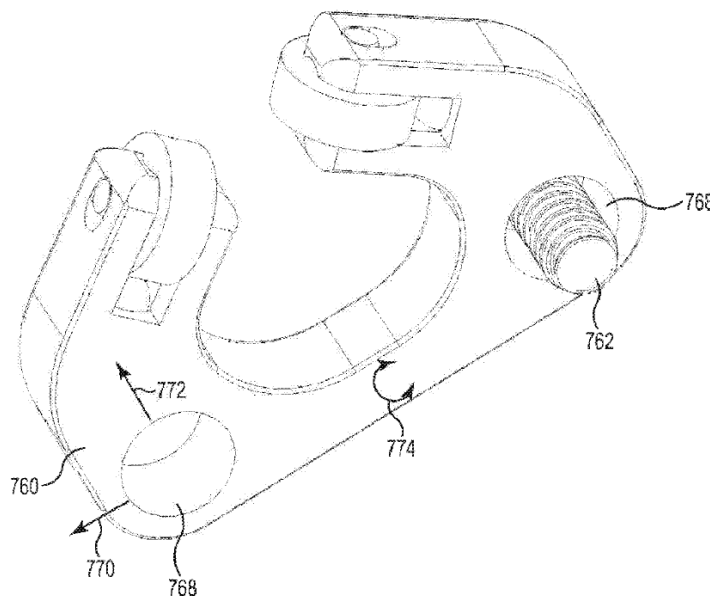


Figure 27C of the ’379 patent is a perspective drawing of the tunable arrow rest, having housing 760 with enlarged openings 768. *Id.* at 15:14–15. The ’379 patent explains that this “mounted to” connection allows the position of

tunable arrow rest 750 to be adjusted in multiple directions, which it describes in regard to Figure 27D, reproduced below.

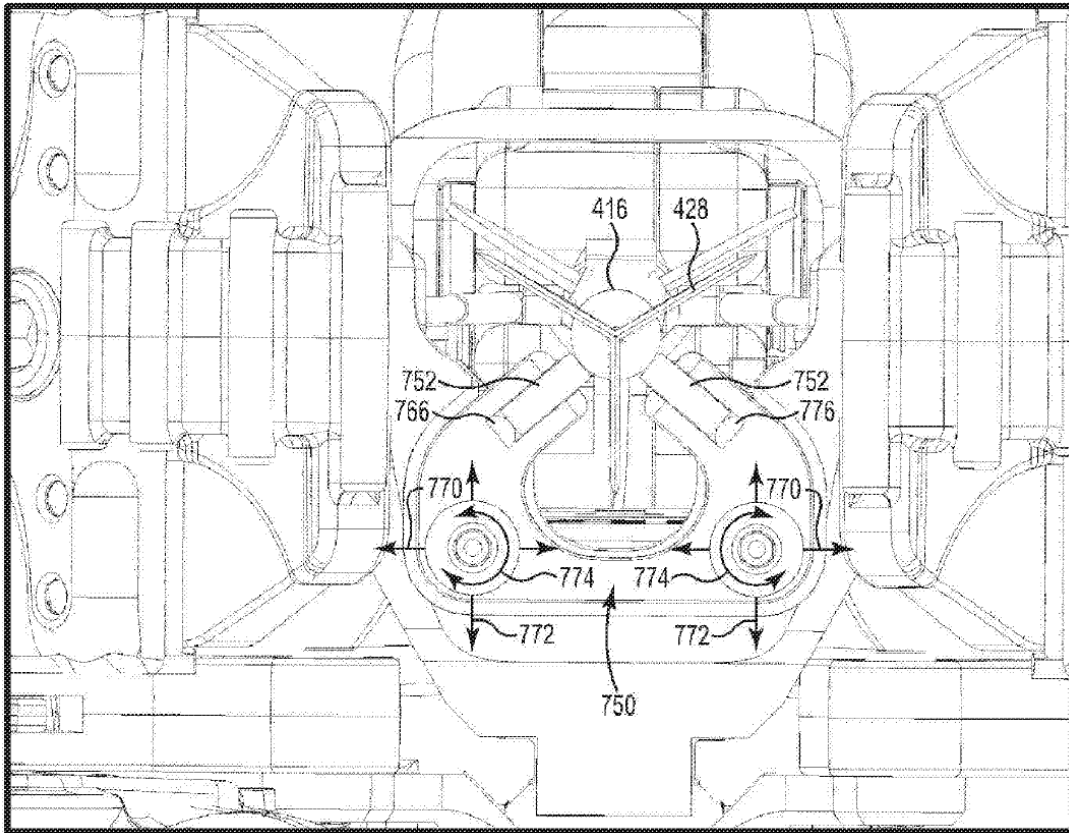


Figure 27D of the '379 patent is a perspective drawing of tunable arrow rest 750 in a crossbow and supporting an arrow with arrowhead 428. *Id.* at 15:14–24. The '379 patent describes the ways in which arrow rest 750 may be moved relative to central rail 402:

[T]he housing 760 [of arrow rest 750] includes enlarged openings 768 with diameters larger than the diameters of the fasteners 762. Consequently, the position of the arrow rest 750 can be adjusted (i.e., tuned) in at [sic] three degrees of freedom — the Y-direction 770, the Z-direction 772, and roll 774 relative to the center rail 402. FIG. 27D illustrates an arrow 412 [sic, “416”] with arrowhead 428 positioned on the support rollers 752 and the various degrees of freedom 770, 772, 774 available for tuning the arrow rest 750.

Id.

The '379 patent also uses a similar expression (“mounted at”) to describe the relationship between center rail 402 and riser 404: “The crossbow 400 includes a center rail 402 with a riser 404 *mounted at* the distal end 406 and a stock 408 located at the proximal end 410.” Ex. 1006, 7:67–8:2 (emphasis added). It appears that this “mounted at” connection can involve no movability between the central rail 402 and the riser 404, because the '379 patent explains that the connected elements may be formed as a “unitary structure”: “In one embodiment, the central rail 402 and the riser 404 may be a unitary structure, such as, for example, a molded carbon fiber component.” *Id.* at 8:3–5.

Prior art references cited during prosecution of a patent are also part of the intrinsic record for claim construction. *V-Formation, Inc. v. Benetton Grp. SpA*, 401 F.3d 1307, 1311 (Fed. Cir. 2005) (“This court has established that ‘prior art cited in a patent or cited in the prosecution history of the patent constitutes intrinsic evidence.’”) (quoting *Kumar v. Ovonic Battery Co.*, 351 F.3d 1364, 1368 (Fed. Cir. 2003)).

Among the prior art to the '015 patent cited during prosecution is the Islas reference (Ex. 1015). *See* Ex. 1001, code (56). This same Islas reference is also one of the references Petitioner relies upon in the Petition. *See* Pet. 21. Figure 1 of Islas is reproduced below.

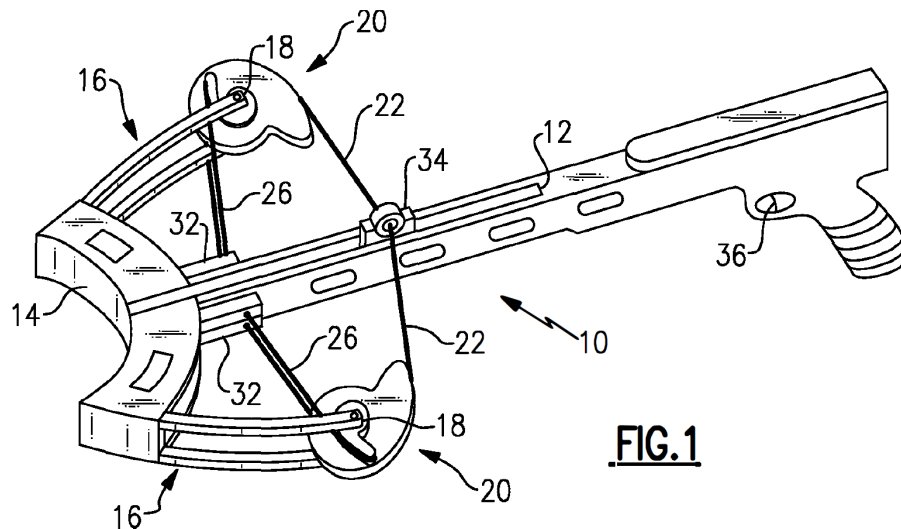


Figure 1 of Islas shows a perspective view of a crossbow having beam 12, and traveling string release 34. ¶¶ 7, 11, 14. Islas states:

[S]hown here is a traveling string release 34 *mounted* on a track on the top of the beam 12. This release can [be] closed over the bow string and then cranked back to a full draw position by means of a screw or pulley mechanism (not shown).

Id. ¶ 14 (emphasis added). Islas’ “mounted on” connection, between the string release 34 and the beam 12 permits the sting release 34 to slide on a track. *Id.* The phrase used in Islas is “mounted *on*,” rather than “mounted *to*,” as in claim 1 of the ’015 patent. Nevertheless, Islas shows that one type of “mounted” connection, in the intrinsic record, permits a sliding movement between the connected elements.

Notwithstanding their different views, the parties agree that “mounted to” encompasses indirect connections, such as the presence of intermediate elements between a “string guide” and the respective “bow limb.” Indeed, Patent Owner points out that, during prosecution, the Examiner mapped claim 1’s “string guide” “mounted to” a “bow limb” to the prior art US 7,708,001 (“Kempf ’001”) (Ex. 1008), which employs a mounting bracket

between the structures corresponding to the “string guide” and “bow limb” — a determination that the applicant did not dispute. *See* Paper 47, 6–7 (citing Ex. 1002, 74–75, 105–106; Ex. 1008, Fig. 3). Similarly, Petitioner relies upon this instance from the ’015 patent’s prosecution history to argue that “mounted to” includes indirect connections. Pet. Reply, 5 (citing Ex. 1002, 105–106; Ex. 1008, 2:9–29, Fig. 1). Further, Patent Owner points out that the ’379 patent (related to the ’015 patent) connects its “string guide” structure (called a “cam”) to the “limb” with an intervening axle mount. Paper 47, 7–8 (citing Ex. 1006, 8:30–34, Figs. 14A, 23A, 24A). Furthermore, the ’015 patent Specification itself describes an indirect connection of “[s]tring guides . . . rotatably mounted . . . on respective limbs . . . on respective axles.” Ex. 1001, 5:23–25. Here, the “axles” are intermediate elements between the “[s]tring guides” and “limbs.” *Id.*

No claims of the ’015 patent are currently asserted in the related district court litigation. *See* Plaintiff’s Notice of Reduction of Asserted Claims and Covenant Not to Sue, *Ravin Crossbows*, Dkt. 107 (N.D. Ohio Sept. 1, 2023). However, the remaining patents in the litigation involve the “mounted to” limitation — used in a manner similar to claim 1 of the ’015 patent, e.g., describing the relationship between a “cam” and a “bow limb” (*see* Ex. 1006, 16:29) — which the Court addressed in its claim construction order. Memorandum Opinion and Order, *Ravin Crossbows*, Dkt. 148 (N.D. Ohio March 1, 2024) (Ex. 2035). In the district court litigation, the parties presented the same proposed constructions of “mounted to” that they have presented to the Board. *See id.* at 6.

As to Patent Owner’s proposed construction, the district court stated: “Replacing ‘mounted to’ with ‘mounted to allow only rotation around a

fixed axis’ does not assist the jury in determining the meaning of the claim term. Accordingly, Ravin’s proposed construction must fail.” Ex. 2035, 7.

The district court stated that Petitioner’s proposed construction (“connected to, either directly or indirectly”) “is also unhelpful and potentially confusing to the jury.” Ex. 2035, 7.

Ultimately, the district court concluded: “‘Mounted to’ is a term readily understood by a person skilled in the art. As such, the Court finds that ‘mounted to’ should be given its plain and ordinary meaning.” *Id.* at 10.

Because both parties contend that their respective proposed constructions is the plain and ordinary meaning of “mounted to,” we must further the analysis, in order to determine whether or not the various types of connections, mapped to Petitioner’s prior art, satisfy the “mounted to” limitation.

Patent Owner contends that Petitioner’s construction of “mounted to” (“connected to, either directly or indirectly”) would mean that “**any component** of a crossbow is ‘mounted to’ **every other component** regardless of where it is located or how many intermediate components exist in the chain of physical connections between the recited components or how such components rotate or move.” PO Resp. 7.

Patent Owner’s critique, however, ignores the full language of claim 1 of the ’015 patent, which constrains the “mounted to” connection between each “string guide” and “limb” — such as the disposition of the respective “draw string journal,” “helical power cable take-up journal,” “power cable,” and “draw string,” as well as the operability of the claimed “crossbow.”

The Board’s proposal (Paper 45) attempted to frame the “mounted to” limitation in the context of these other limitations. Yet, the proposal may

have generated more confusion than clarity. In terms of the specific relationship between each “string guide” and respective “limb,” notwithstanding the various additional requirements of the claim as a whole, the Board’s proposal amounts to essentially the same as Petitioner’s proposed construction, i.e., “connected to, either directly or indirectly.” For the reasons that follow, we adopt this construction.

As an initial matter, the recited expression “mounted to” is broad. The Federal Circuit has explained that words in a claim “will ordinarily be given their full meaning,” without imposing narrowing modifications on the claim language. *Johnson Worldwide*, 175 F.3d at 989, *see also Virginia Panel*, 133 F.3d at 865–66.

As to whether the “mounted to” connection may be an indirect connection, the parties agree that an indirect connection is permitted — a view that is amply supported by the intrinsic record, as discussed above.

With regard to the types of movement that may occur between a “string guide” and a corresponding “limb,” the intrinsic record shows that that various types of movements (including no movement at all) are characterized as “mounted to.” Slight variations of “mounted to,” occurring in the intrinsic record, are helpful in understanding the claim language — particularly because the ’015 patent itself uses such a variant (“mounted . . . on”) to describe the very connection (between a “string guide” and a “limb”) that is elsewhere, and in claim 1, is described as “mounted to.” *See Ex. 1001*, 5:23–26.

The ’379 patent (*Ex. 1006*), which is related to the ’015 patent, uses the phrase “mounted to” (the same language of claim 1 of the ’015 patent) to describe the relationship between tunable arrow rest 750 and center rail 402

— a relationship that permits movement in “three degrees of freedom — “the Y-direction 770 , the Z-direction 772 , and roll 774 relative to the center rail 402.” Ex. 1006, 15:7–24. In addition, the ’379 patent uses the phrase “mounted at” (a slight variation from “mounted to” in claim 1) to describe the relationship between central rail 402 and riser 404 — a connection that, as discussed above, permits no relative movement whatsoever. *See id.* at 7:67–8:5.

In addition, the Islas reference — which, having been cited in the prosecution of the ’015 patent, is part of the intrinsic record — uses the phrase “mounted on” (a slight variation of the ’015 patents’ “mounted to” claim language) to describe a sliding relationship. *See* Ex. 1015 ¶ 14, Fig. 1.

In summary, the claim language “mounted to” language, itself, is broad and there is no basis for narrowing it — short of the disparaged practice of importing limitations from the Specification. The intrinsic evidence shows (and the parties agree) that “mounted to” encompasses indirect connections, as well as direct connections. Further, the intrinsic evidence shows the use of the expression “mounted to” (or slight variants thereof) to describe several types of relative movements — including the absence of any movement. Altogether, the phrase “mounted to,” in claim 1 of the ’015 patent, should be construed to have the breadth that the words themselves convey: “connected to, either directly or indirectly.”

C. Discussion of the Asserted Grounds

1. Ground 5: Anticipation Based on Stanziale ’771

We focus our analysis on Ground 5 because it is dispositive of Petitioner’s challenges to claim 1, the only claim challenged in this proceeding.

Petitioner contends that Stanziale '771 anticipates claim 1. *See* Pet. 41–44.

Patent Owner contends that Stanziale ’771 does not satisfy the “mounted to” limitations of claim 1. *See* PO Resp. 37–43.

For the reasons discussed below, we determine that Petitioner has shown by a preponderance of the evidence that claim 1 is anticipated by Stanziale '771.

a. Stanziale '771

Stanziale '771 discloses several archery crossbow embodiments, for launching, e.g., a projectile, arrow, or bolt, having common features among them — such features being identified by shared reference numerals in the Figures. *See* Ex. 1012, 2:4–5, 23:30–33, 24:30–33. Figure 1 of Stanziale '771 is reproduced, below.

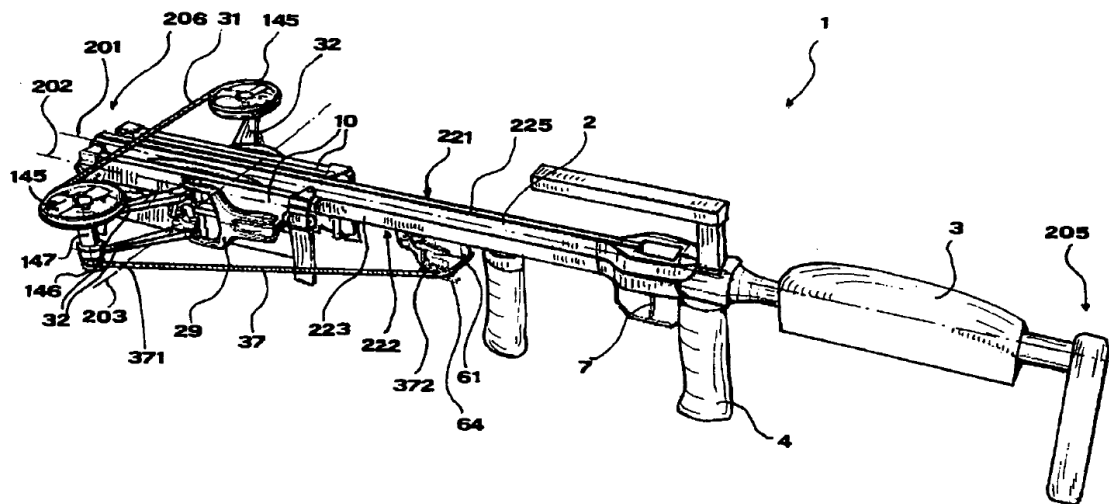


FIG.1

Figure 1 of Stanziale '771 is a perspective view of a crossbow. *Id.* at 6:18–20. As seen in Figure 1, crossbow 1 comprises at least two elastic members 10, or bending members, which are associated to the stock 2 on

opposite sides 223, 224 of it. *Id.* at 8:26–27. Four lever arms or pushing arms 32, arranged in pairs on opposite sides of the stock 2, are hinged on respective connecting elements 27 and are connected to a flexible pushing member 31 (a wire for pushing the projectile). *Id.* at 11:3–7, 13:32–33. The connecting elements 27 comprise cam portions 28a, 28b, each being connected to a fork-shaped constraining member 29 that is rotatably associated with a respective elastic member 10. *Id.* at 11:34–12:3, 12:10–17. Angular movement of connecting element 27, and a rotational movement of the cam portions 28a, 28b, creates a flexing action on the corresponding elastic members 10, causing a flexional deformation of the elastic members 10. *Id.* at 13:21–26

First pulleys 145 and second pulleys 146 are fastened to opposite sides of pivot 147 and are pivotally connected (rotatable around axis of rotation 150) to a respective pushing arm 32. 11:8–9; 16:24–17:5

Figure 9 of Stanziale '771 is reproduced below.

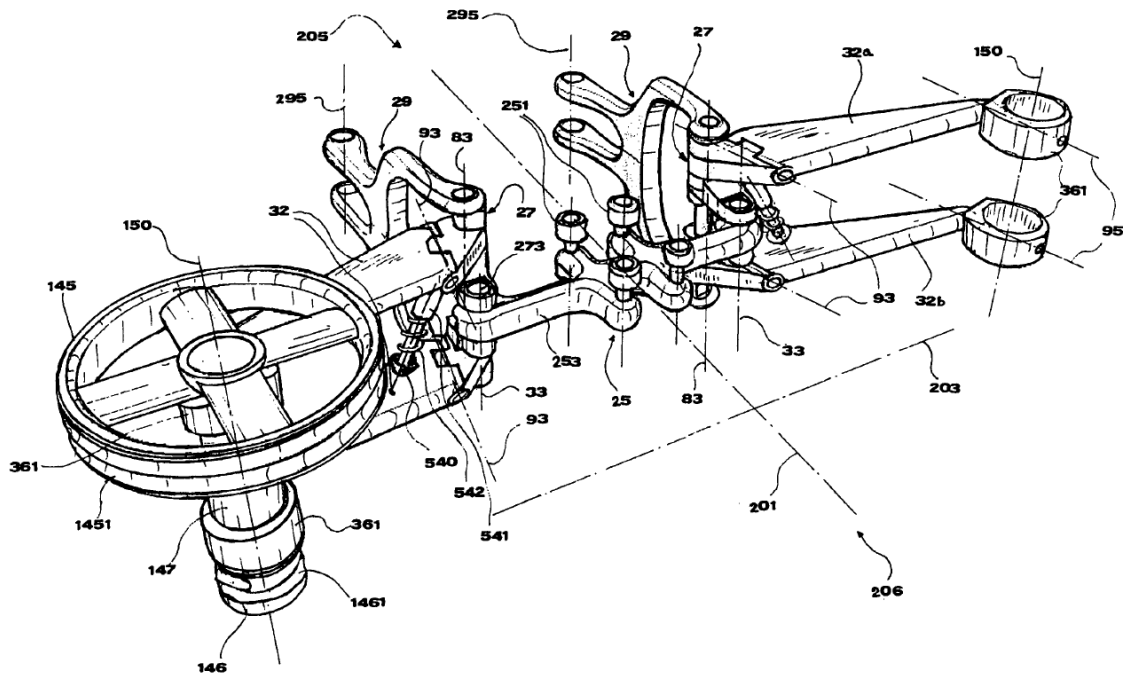


FIG.9

Figure 9, a perspective front view of a detail of a crossbow, shows first pulley 145 having a track or groove 1451 in which a respective end of the flexible pushing member 31 is supported and in which the flexible pushing member 31 winds. Ex. 1012:7:9–10, 17:15–23. A flexible force member 37 (shown in Figure 1, above) — such as, for example, a wire — is secured in in a track or groove 1461 on a side edge of a respective second pulley 146, in which the flexible force member 37 winds, thus causing rotation of the pushing arms 32. *Id.* at 7:32–18:3. The groove 1461 has a spiral or helical shape, so as to wind a plurality of turns of flexible force member 37. *Id.* at 18:4–5.

The flexible members 31, 37 are secured to the respective pulleys 145, 146 in such a way that, during an angular displacement of pulleys 145, 146 about the axis of rotation 150, the unwinding of the flexible pushing member 31 from the first pulley 145 causes the flexible force member 37 to

wind onto the second pulley 146. Ex. 1012, 18:22–26. Further, the pushing arms 32 cooperate with the connecting elements 27 (and associated cam portions 28a, 28b), to transfer energy to the elastic members 10 during the loading phase of the crossbow 1, and, conversely, a transfer of energy from the elastic members 10 to the flexible pushing member 31 during the launch phase of the projectile. *Id.* at 21:4–7.

b. Petitioner's Arguments

Petitioner maps the limitations of claim 1 of the '015 patent to Stanziale '771 in the following manner:

Stanziale '771 discloses a crossbow 1. (Ex. 1012 2:4–5, 8:6–11, Fig. 1; Ex. 1016 ¶ 176.)

This crossbow comprises a central portion (called a stock) 2 that has a down-range side (called a front end) 206 and an up-range side (called a rear end) 205. (Ex. 1012 7:9–17, Fig. 1; Ex. 1016 ¶ 177.) First and second flexible limbs (called elastic or bending members) 10 are attached to the central portion. (Ex. 1012 8:26–8:13, Figs. 1–2; *see also id.* at 2:6–12; Ex. 1016 ¶ 178.) Pulleys 145 are mounted to the first and second limbs, respectively, through brackets or arms 32 and rotatable around respective axes 150. (Ex. 1012 11:8–9, 17:2, 15–17, 24–27, Figs. 1–7; *see also id.* at 14:18–15:22, 19:12–30, 20:32–21:16; Ex. 1016 ¶ 179.) Stanziale '771 discloses that a pivot 147 of the first pulley 145 is fastened to the second pulley 146, 16:24–25, 29, thus rendering the combination 145, 146, 147 as the claimed string guide. (Ex. 1016 ¶ 179.)

Each string guide has a draw string journal (called groove) 1451 having a plane of rotation (*e.g.*, formed by the wound string 31) perpendicular to the respective axis of rotation 150. (Ex. 1012 26:11–23, Figs. 1–2, 18–19; Ex. 1016 ¶ 180.)

Each string guide also has a 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. (Ex. 1012 17:34–17:5, Figs. 1, 5, 8–10A; *see also id.* at Fig. 12; Ex. 1016 ¶ 181.)

Stanziale '771 discloses several configurations of pulley grooves (annular, helical or spiral; with or without cable-enclosing radial extensions 1455, 1465). Ex. 1012 17:22–23, 18:4–5, 26:11–21; Ex. 1016 ¶ 182.) And Stanziale '771 also discloses that the disclosed pulleys are interchangeable among the various disclosed embodiments. (Ex. 1012 26:22–23; Ex. 1016 ¶ 182.) Thus, Stanziale '771 discloses having annular grooves 1451 for the string 31 and helical grooves 1461 for the cable 37. (Ex. 1016 ¶ 182.)

Stanziale '771 discloses a draw string (called flexible pushing member) 31 received in the draw string journals 1451. (Ex. 1012 11:6–7, Figs. 1–8; Ex. 1016 ¶ 183.) The string 31 is secured to the crossbow in a reverse draw configuration, because the string is adjacent the down-range or front side 206 of the string guides 145 when in a released configuration (*see* Figs. 1, 4, 7–8). (Ex. 1012 18:30–34; Ex. 1016 ¶ 183.) The string 31 translates from the down-range side 206 toward the uprange or rear side 205 to a drawn configuration (*see* Figs. 2, 5) while unwinding off the string guides 145. (Ex. 1012 17:18–23, 30–31, 18:22–26, 18:34–19:6, 20:3–6; Ex. 1016 ¶ 183.)

Each of the helical journals 1461 also receives a cable (called flexible force member) 37. (Ex. 1012 17:32–18:5, Figs. 1–7; Ex. 1016 ¶ 184.) Stanziale '771 discloses that either the same cable 37 can be received in both string guide (*i.e.*, one end in each groove), or two cables may be used, *id.* at 18:13–16, thus disclosing these limitations. (Ex. 1016 ¶ 184.) As the bow is drawn from the released configuration (*see* Figs. 1, 4, 7–8) to the drawn configuration (*see* Figs. 2, 5), the cables 37 wrap onto the helical journals 1461. (Ex. 1012 17:34–18:5, 18:22–26, 18:34–19:6, 20:3–6; Ex. 1016 ¶ 185.) The cables 37 are displaced along the axes 150 away from the draw string planes of rotation as the bow is drawn. (*Compare* Ex. 1012 Figs. 4 and 5 (showing cable 37 wrap around journal 1461 and away from string 31 as the bow is drawn); *also compare* Ex. 1012

Figs. 11 and 12 (same), 23:30–24:1; *see also id.* at 19:2–6;
Ex. 1016 ¶ 185.)

Pet. 41–44.

Figures 4, 5, and 12 of Stanziale '771 elucidate Petitioner's position.
Figure 4 of Stanziale '771 is reproduced below.

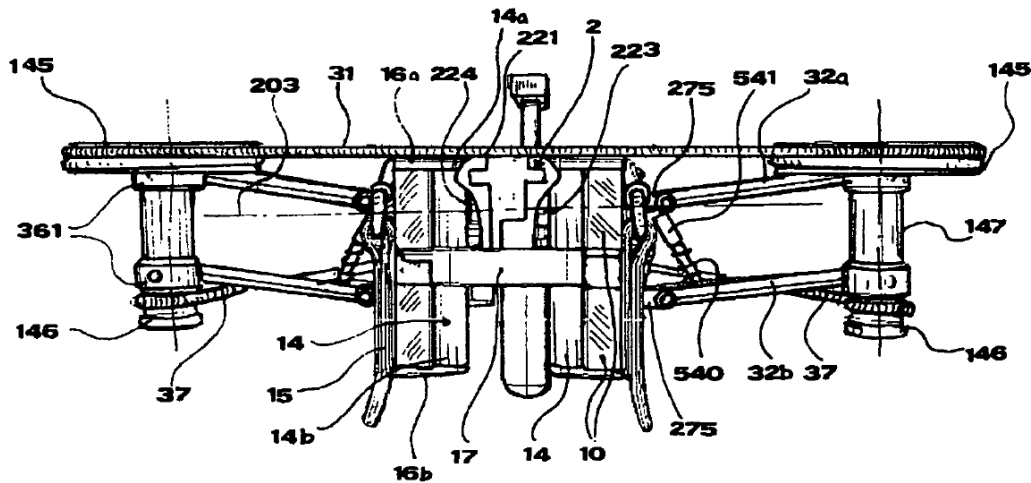


FIG. 4

Figure 4 is a front view of a crossbow in the released position. Ex. 1012,
6:25–26. Figure 5 of Stanziale '771 is reproduced below.

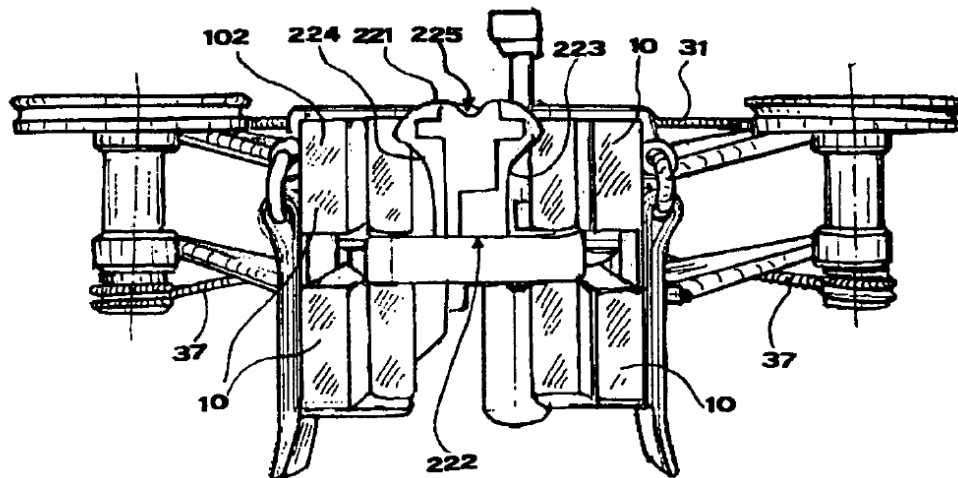


FIG. 5

Figure 5 shows a front view of a crossbow in the drawn position. *Id.*
at 6:27–28. Figure 12 of Stanziale '771 is reproduced below.

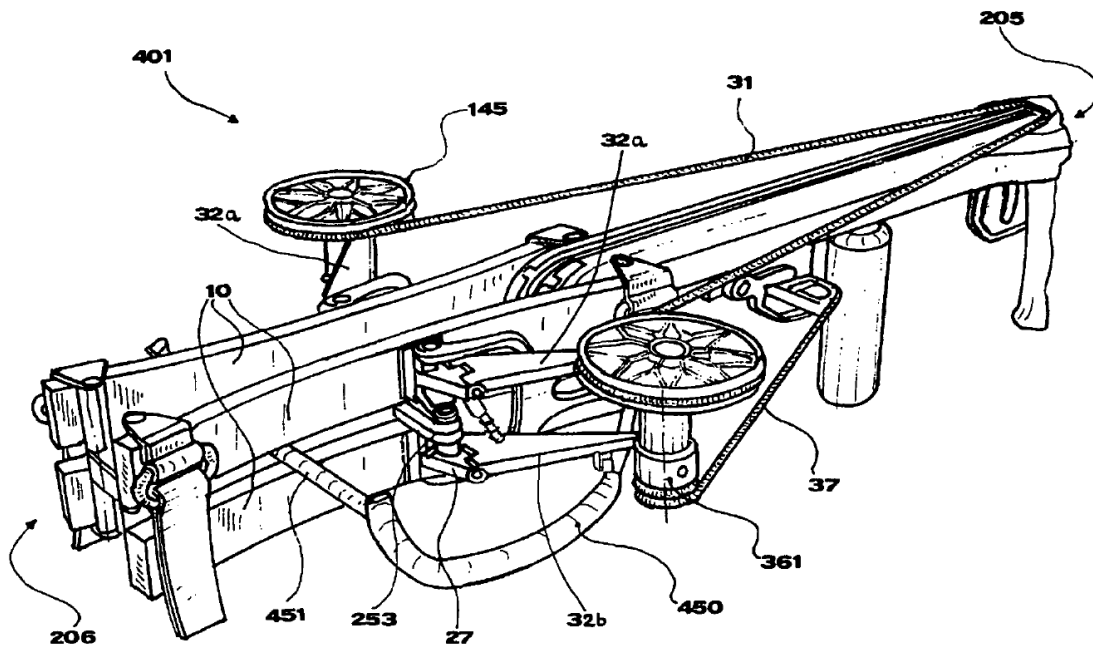


FIG. 12

Figure 12 shows a perspective view of a crossbow in the drawn position. *Id.* at 7:14–15.

Stanziale '771's Figures 4, 5, and 12 show that, per Petitioner's mapping, the recited "power cable[s]" (cable 37 in the reference) "wrap onto the . . . helical, power cable take-up journals" (located on second pulleys 146) and are "displaced along the first and second axes away from the [respective] planes of rotation of the [corresponding] draw string journals," because the recited "planes of rotation" are coincident with the first pulleys 145 of the reference. *See* Pet. 43–44.

c. Patent Owner's Arguments

Patent Owner's sole argument, regarding its position that Stanziale '771 does not anticipate claim 1 of the '015 patent, is that Stanziale '771 lacks the limitation of "string guide[s]" "mounted to" respective "limb[s]." *See* PO Resp. 38–43. Patent Owner argues that "Stanziale '771 does not

mount the pulley assemblies to the limbs, but instead uses intervening structures comprised of pushing arms and elements.” *Id.* at 38 (citing Ex. 2029 ¶ 45). More specifically, Patent Owner argues that Stanziale ’771’s disclosure “highlight[s] three degrees of freedom between pulleys 145/pulley assemblies 145-146-147 and elastic members 10,” which Patent Owner contends is “different from Claim 1 [of the ’015 patent], which provides for a single degree of freedom between the string guides and limbs.” *Id.* at 43 (citing Ex. 2029⁸ ¶¶ 125, 127; PO Resp. § IV(A)(2)).

In addition, Patent Owner states: “Due to the overly complicated, multi-part structure of the Stanziale ’771 device, a POSA would be disinclined to rely on it as a reference for the improved crossbow design disclosed in Claim 1.” PO Resp. 38 (citing Ex. 2029 ¶ 46).

d. Analysis

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

⁸ Patent Owner cites Ex. 1012 (Stanziale ’771), but it appears that a citation to Ex. 2029 (Teater Declaration) was intended.

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. 2025) (quoting *In re Petering*, 301 F.2d 676, 681 (CCPA 1962)).

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).

Patent Owner’s sole argument — i.e., that Stanziale ’771 fails to teach the “mounted to” limitation — is based upon its construction of the “mounted to” limitation, which permits the “string guide” to be rotatable relative the corresponding “limb,” but permits no other type of relative motion. *See* PO Resp. 4, 13–14. As discussed above, we do not accept Patent Owner’s construction of the “mounted to” limitation.

In Stanziale ’771, first and second pulleys 145, 146, and interconnecting pivot 147 (all three of which Petitioner maps to claim 1’s “string guide[s]”) are pivotally connected to a number of intermediate members (e.g., lever arms or pushing arms 32, connecting elements 27, and constraining member 29) which are, in turn, pivotally connected to elastic members 10 (which Petitioner maps to claim 1’s “limb[s]”). *See* Pet. 41–42 (citing Ex. 1012 7:9–17, 8:26–8:13, 11:8–9, 14:18–15:22, 16:24–25, 16:29,

17:2, 17:15–17, 17:24–27, 19:12–30, 20:32–21:16, Figs. 1–7; Ex. 1016 ¶¶ 177–179); *see also* Ex. 1012 11:3–7, 11:34–12:4, 12:10–17, 16:29–18:3, 18:22–19:30, Figs. 8, 9, 10a, 10b. Therefore, Stanziale ’771, in Petitioner’s mapping, teaches the “string guide[s]” connected indirectly to the “limb[s].”

Per the construction of the “mounted to” limitation employed herein (“connected to, either directly or indirectly”), Petitioner establishes, by a preponderance of the evidence, that Stanziale ’771 teaches the “string guide[s]” “mounted to” the “limb[s],” as recited in claim 1 of the ’015 patent. Contrary to Patent Owner’s concerns (*see* Paper 47, 1), the indirect connection between Stanziale ’771’s “string guide[s]” and “limb[s]” is not “unbounded.” Rather, the connection disclosed by Stanziale ’771 is the type of indirect connection supported by the intrinsic record. *See supra* § II.B. Patent Owner’s contention that “a POSA would be disinclined to rely on [Stanziale ’771] as a reference for the improved crossbow design disclosed in Claim 1” is not persuasive. *See* PO Resp. 38 (citing Ex. 2029 ¶ 46). The test for anticipation is whether a prior art reference discloses each and every element recited in the claim, not whether one of ordinary skill in the art would have been inclined to rely on the reference. *See Net MoneyIN, Inc.*, 545 F.3d at 1369.

Insofar as Patent Owner might contend that Stanziale ’771 would not constitute analogous prior art to the ’015 patent, such an argument would have no merit. “[T]he question whether a reference is analogous art is irrelevant to whether that reference anticipates.” *In re Schreiber*, 128 F.3d 1473, 1478 (Fed. Cir. 1997). To the contrary,

a reference may be from an entirely different field of endeavor than that of the claimed invention or may be directed to an entirely different problem from the one addressed by the inventor, yet the

reference will still anticipate if it explicitly or inherently discloses every limitation recited in the claims.

Id.

In view of the foregoing analysis, Petitioner establishes, by a preponderance of the evidence, that claim 1 of the '015 patent is unpatentable, as anticipated by Stanziale '771.

2. *Remaining Grounds*

As identified above (*see supra* § I.G), Petitioner presents several alternative grounds challenging claim 1. Because of our determination that Petitioner establishes by a preponderance of the evidence that claim 1 is anticipated by Stanziale '771, we do not reach these alternate challenges to claim 1. *See SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1359 (2018) (holding that a petitioner “is entitled to a final written decision addressing all of the claims it has challenged”); *see also Boston Sci. Scimed, Inc. v. Cook Grp. Inc.*, 809 F. App'x 984, 990 (Fed. Cir. 2020) (nonprecedential) (stating that the “Board need not address issues that are not necessary to the resolution of the proceeding,” such as “alternative arguments with respect to claims [the Board] found unpatentable on other grounds”).

D. *Motions to Exclude*

Petitioner filed Objections to Evidence Submitted by Patent Owner (Paper 26) and a Motion to Exclude (Paper 39). Likewise, Patent Owner filed Objections to Evidence Submitted with Petitioner's Reply (Paper 33) and a Motion to Exclude (Paper 38). The parties also filed corresponding Opposition and Reply briefs. *See* Paper 40 (Petitioner's Opposition to Patent Owner's Motion to Exclude); Paper 41 (Patent Owner's Opposition to Petitioner's Motion to Exclude); Paper 42 (Petitioner's Reply to Patent

Owner's Opposition to Petitioner's Motion to Exclude); Paper 43 (Patent Owner's Reply in Support of Its Motion to Exclude).

1. Petitioner's Motion to Exclude

a. Exhibit 2005

In one aspect of its Motion to Exclude, Petitioner seeks to exclude, based on various grounds, Exhibit 2005, which is a video showing an animation of the operation of the Figure 12 embodiment of the '015 patent. *See* Paper 39, 1–2.

In response, Patent Owner states that Exhibit 2005 is a “demonstrative” and “Patent Owner is not seeking to introduce Exhibit 2005 into evidence.” Paper 41, 1–2.

As another panel of the Board explained, “[d]emonstratives . . . are not evidence, and we do not rely on demonstratives in our decision making.” *Canfield Sci., Inc. v. Quantificares S.A.*, IPR2021-01511, Paper 61, 9 (PTAB Mar. 9, 2023).

Accordingly, we *dismiss*, as moot, the aspect of Petitioner's Motion to Exclude that concerns Exhibit 2005.

b. Exhibit 2012

Patent Owner has withdrawn Exhibit 2012. *See* Paper 41, 1, 3. Accordingly, we *dismiss*, as moot, the aspect of Petitioner's Motion to Exclude. *See* Paper 39, 2.

c. Exhibit 2029

In another aspect of its Motion to Exclude, Petitioner seeks to exclude the declaration testimony of Patent Owner's expert witness, Jonathan Teater (Exhibit 2029). *See* Paper 39, 2–8.

Petitioner’s Motion, in regard to Mr. Teater’s declaration, turns on whether Mr. Teater possesses at least ordinary skill in the relevant art. *See Kyocera Senco Indus. Tools Inc. v. Int’l Trade Comm’n*, 22 F.4th 1369, 1376–77 (Fed. Cir. 2022). The Federal Circuit has stated:

To offer expert testimony from the perspective of a skilled artisan in a patent case — like for claim construction, validity, or infringement — a witness must at least have ordinary skill in the art. Without that skill, the witness’ opinions are neither relevant nor reliable. The opinions would not be based on any specialized knowledge, training, or experience that would be helpful to the factfinder. In fact, “[a]dmitting testimony from a person . . . with no skill in the pertinent art serves only to cause mischief and confuse the factfinder.” *Sundance, [Inc. v. DeMonte Fabricating Ltd.]*, 550 F.3d 1356, 1362 (Fed. Cir. 2008)]. That testimony would “amount[] to nothing more than advocacy from the witness stand.” *Id.* at 1364–65.

Id.

In the present proceeding, Petitioner proposed — and Patent Owner does not dispute (*see* PO Resp. 3) — the following definition of a person of ordinary skill in the art:

A hypothetical POSA 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. (Ex. 1016 ¶17.) Such a person 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. (*Id.*)

Pet. 28. As discussed above, we adopt Petitioner’s description of a person of ordinary skill for the purposes of this Decision. *See supra* § II.A.

Petitioner alleges various deficiencies in Mr. Teater's background, education, and knowledge. Paper 39, 4–8. Nevertheless, Mr. Teater satisfies the definition, of a person of ordinary skill in the art, that Petitioner advanced.

Specifically, Mr. Teater has reviewed crossbows for 14 years, encompassing the relevant priority date for the '015 patent, during which time he wrote evaluations of various bows and crossbows, developed and published testing standards for crossbows, and served on the Archery Trade Association's technical committee for standards and guidelines. Paper 41, 4 (citing Ex. 2029 ¶¶ 3, 4, 7). Accordingly, Mr. Teater satisfies Petitioner's definition of "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."

Pet. 28.

Petitioner emphasizes that Mr. Teater "does not have a degree in mechanical engineering." Paper 39, 4 (citing Ex. 2034, 1; Ex. 1034, 43:20–44:5). However, no degree of any kind is mandatory for satisfying Petitioner's definition of a person of ordinary skill in the art. Indeed, Petitioner's definition states that "[s]uch a person 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 (emphasis added). There is no dispute that Mr. Teater meets this standard.

Petitioner raises various other issues that form no part of the definition that Petitioner advanced — for example, whether Mr. Teater has taught courses related to crossbows, whether he is named as an inventor on a

patent, and whether he is licensed as a professional engineer. Paper 39, 4 (citing Ex. 1034, 66:15–67:1, 67:5–7).

In view of the foregoing, Mr. Teater satisfies the definition, of a person of ordinary skill in the art, that applies in this proceeding. Accordingly, we *deny* the aspect of Petitioner’s Motion to Exclude relating to Mr. Teater’s declaration (Ex. 2029).

d. Exhibit 2031

In another aspect of its Motion to Exclude, Petitioner seeks to exclude Exhibit 2031. *See* Paper 39, 8–9.

Patent Owner states that Exhibit 2031 is an article by Winke that purportedly illuminates “a POSA’s general knowledge around the relevant priority date” and “provides more fulsome context to Mr. Teater’s testimony, who as an expert may consider hearsay.” Paper 41, 8 (citing Fed. R. Evid. 703).

We do not rely on Exhibit 2031 in rendering our decision. Therefore, we *dismiss* the corresponding aspect of Petitioner’s Motion to Exclude, as moot.

2. *Patent Owner’s Motion to Exclude*

a. Exhibits 1031, 1032, and 1033

In part, Patent Owner’s Motion to Exclude seeks to exclude Exhibits 1031, 1032, and 1033. *See* Paper 38, 2–5.

We do not rely on any of these exhibits in rendering our decision. Therefore, we *dismiss* Patent Owner’s request to exclude Exhibits 1031, 1032, and 1033, as moot.

b. Exhibit 1037

Patent Owner seeks to exclude “portions” of Ex. 1037, the Declaration of Stephen A. Batzer, Ph.D., P.E. in Support of Petitioner’s Reply to Patent Owner’s Response (“Reply Declaration”). Paper 38, 5–6.

More specifically, Patent Owner’s Motion to Exclude identifies:

(1) the portions of the Reply Declaration that rely on Ex. 1031 (which is also a subject of Patent Owner’s Motion to Exclude), i.e., ¶ 137; (2) the portions of the Reply Declaration that express Dr. Batzer’s views on the qualifications of Patent Owner’s expert witness (Mr. Teater), i.e., ¶¶ 7–14; (3) the portions relating to Dr. Batzer’s opinions that allegedly lack factual bases — ¶ 58 (regarding the opinion that “[c]rossbow manufacturers have tolerated cam lean just fine”) and ¶ 60 (regarding the opinion that “determining the direction of the already present helical journals does not in any way add any weight or thereby effect synchronization”); and (4) “those portions” of the Reply Declaration that “do not make any facts at issue in the *inter partes* review more or less probable than they would have been without the evidence, they are unfairly prejudicial, confuse the issues, and are a waste of time” — namely ¶¶ 96–99, 108, 139, 142, and 143, which Petitioner’s Reply “does not rely on,” such that “these portions of the EX1037 are not relevant and should be excluded.” Paper 38, 5–6.

Petitioner argues, *inter alia*, that the objections that Ravin previously served merely objected generically pursuant to a handful of rules ‘to the extent’ Dr. Batzer’s testimony was not permitted by FRE 602 or 702–703, without specifying the ‘extent’ and leaving TenPoint to guess what the alleged defects were, why, and how to cure them,” and that “Ravin’s objections were not sufficiently particular and should be overruled on that

basis alone.” Paper 40, 6–7 (citing Paper 33, 1; 37 C.F.R. § 42.64(b)(1); Ex. 1038, 1–2).

Motions to exclude evidence are authorized under 35 C.F.R. § 42.64. Rule 42.64(b)(1) states: “Once a trial has been instituted, any objection [to evidence] must be filed within five business days of service of evidence to which the objection is directed.” Further, “[t]he objection must identify the grounds for the objection with sufficient particularity to allow correction in the form of supplemental evidence.” 35 C.F.R. § 42.64(b)(1). “A motion to exclude evidence must be filed to preserve any objection.” 35 C.F.R. § 42.64(c).

As noted above, Patent Owner’s Motion to Exclude, in regard to Dr. Batzer’s Reply Declaration, pinpoints the exact paragraphs of the Reply Declaration alleged to be inadmissible. *See* Paper 38, 5–6.

By contrast, Patent Owner’s Objections identify no allegedly offending paragraphs or any other specific parts of Batzer’s Reply Declaration. *See* Paper 33, 1–2. Instead, Patent Owner’s Objections comprise vague, generic statements, objecting to the Reply Declaration,

to the extent it includes subject matter that is not permitted pursuant to FRE 602 or 702–703, including without limitation, to the extent that the declaration presents as “facts” information that is outside the personal knowledge of the declarant and/or to the extent that the testimony is not based on sufficient facts or data or the product of reliable principles and methods reliably applied in this case.

Id. at 1. Further, Patent Owner’s Objections assert an “object[ion] to Exhibit 1037 as irrelevant under FRE 401 and 402 because it does not make any facts at issue in the *inter partes* review more or less probable than it would have been without the evidence” and because “Exhibit 1037, and the

exhibits thereto” are “unfairly prejudicial, confusing the issues, and a waste of time under FRE 403.” *Id.* at 2.

Patent Owner’s Objections did not identify the grounds for the objection with sufficient particularity to allow Petitioner to make a correction in the form of supplemental evidence, as required under 37 C.F.R. § 42.64(b)(1). Indeed, Petitioner contacted Patent Owner, shortly after Patent Owner filed its Objections, pointing out that Patent Owner’s Objections fall short of what is required under Rule 42.64(b)(1), “as they are merely a laundry list of boilerplate objections made ‘to the extent’ they may or may not apply,” but did not elicit further clarity from Patent Owner. Ex. 1038, 2.

The lack of an effective objection is sufficient basis to deny a Motion to Exclude. *See B/E Aerospace, Inc. v. MAG Aerospace Indus., LLC*, IPR2014-01511, Paper 104, 8 (PTAB March 18, 2016) (citing 37 C.F.R. §§ 42.20(c), 42.22, 42.64(c)). In this instance, Patent Owner’s Objections (Paper 33) ran afoul of Rule 42.64(b)(1), leaving Petitioner without any meaningful sense of the alleged evidentiary flaws in Dr. Batzer’s Reply Declaration — until Patent Owner filed its Motion to Exclude (Paper 38).

In view of the foregoing, we *deny* the aspect of Patent Owner’s Motion to Exclude directed to Dr. Batzer’s Reply Declaration (Ex. 1037).

III. CONCLUSION

After considering the evidence and arguments presented in the current record, we determine that Petitioner has demonstrated, by a preponderance of the evidence, the unpatentability of claim 1 of the ’015 Patent, the sole claim challenged in the Petition.

In summary:

Claim(s)	35 U.S.C. §	Reference(s)/Basis	Claim(s) Shown Unpatentable	Claim(s) Not shown Unpatentable
1	102 ⁹	Stanziale '302		
1	103 ¹⁰	Stanziale '302		
1	102 ¹¹	Stanziale '062		
1	103 ¹²	Stanziale '062		
1	102	Stanziale '771	1	
1	103 ¹³	Stanziale '771		
1	103 ¹⁴	Darlington, Norkus		
1	103 ¹⁵	Darlington, Park		
1	103 ¹⁶	Kempf '871, Norkus		
1	103 ¹⁷	Kempf '871, Park		
1	103 ¹⁸	Kempf '871, Stanziale '302		
1	103 ¹⁹	Islas, Darlington, Park		
Overall Outcome			1	

⁹ As explained above, we do not reach this alternative ground.

¹⁰ As explained above, we do not reach this alternative ground.

¹¹ As explained above, we do not reach this alternative ground.

¹² As explained above, we do not reach this alternative ground.

¹³ As explained above, we do not reach this alternative ground.

¹⁴ As explained above, we do not reach this alternative ground.

¹⁵ As explained above, we do not reach this alternative ground.

¹⁶ As explained above, we do not reach this alternative ground.

¹⁷ As explained above, we do not reach this alternative ground.

¹⁸ As explained above, we do not reach this alternative ground.

¹⁹ As explained above, we do not reach this alternative ground.

IV. ORDER

Accordingly, it is

ORDERED that claim 1 of the '015 Patent has been proven to be unpatentable by a preponderance of the evidence;

FURTHER ORDERED that Petitioner's Motion to Exclude (Paper 39) is dismissed as moot, in regard to Exhibits 2005, 2012, and 2031, and denied as to Exhibit 2029;

FURTHER ORDERED that Patent Owner's Motion to Exclude (Paper 38) is dismissed as moot, in regard to 1031, 1032, and 1033, and denied, as to Exhibit 1037; and

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

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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
Kadie Jelenchick
Michelle Moran
FOLEY & LARDNER LLP
cking@foley.com
kjelenchick@foley.com
mmoran@foley.com