

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

PATENT OWNER’S INITIAL CLAIM CONSTRUCTION BRIEF

TABLE OF EXHIBITS

Exhibit No.	Exhibit
2001	Declaration in Support of Motion for <i>Pro Hac Vice</i> Admission of Kadie M. Jelenchick
2002	Declaration in Support of Motion for <i>Pro Hac Vice</i> Admission of Michelle A. Moran
2003	Scheduling Order, <i>Ravin Crossbows, LLC v. Hunter's Mfg. Co., Inc.</i> , Case No. 2:21-cv-02213-GMN-EJY, Dkt. 36 (D. Nev.)
2004	Case Transfer Confirmation, <i>Ravin Crossbows, LLC v. Hunter's Mfg. Co., Inc.</i> , Case No. 2:21-cv-02213-GMN-EJY, Dkt. 77 (D. Nev.)
2005	Animation of Figure 12 of U.S. Patent No. 9,354,015
2006	Joint Claim Construction Chart, <i>Ravin Crossbows, LLC v. Hunter's Mfg. Co., Inc.</i> , Case No. 2:21-cv-02213-GMN-EJY, Dkt. 47-1 (D. Nev.)
2007	Complaint, <i>Ravin Crossbows, LLC v. Hunter's Mfg. Co., Inc.</i> , Case No. 2:21-cv-02213-GMN-EJY, Dkt. 1 (D. Nev.)
2008	Patent Owner's Supplemental Rule 26(a) Disclosures served March 10, 2023, <i>Ravin Crossbows, LLC v. Hunter's Mfg. Co., Inc.</i> , Case No. 2:21-cv-02213-GMN-EJY (D. Nev.)
2009	Patent Owner's Amended and Supplemental Infringement Contentions served February 3, 2023, <i>Ravin Crossbows, LLC v. Hunter's Mfg. Co., Inc.</i> , Case No. 2:21-cv-02213-GMN-EJY (D. Nev.)

Exhibit No.	Exhibit
2010	Excerpt from U.S. District Courts – National Judicial Caseload Profile, through December 2022, including time to trial statistics for Northern District of Ohio (also available at https://www.uscourts.gov/sites/default/files/data_tables/fcms_na_distprofile1231.2022.pdf)
2011	Time to Trial Statistics for the Northern District of Ohio, LexMachina.com
2012	Patent Owner's Preliminary Infringement Contentions served May 23, 2022, <i>Ravin Crossbows, LLC v. Hunter's Mfg. Co., Inc.</i> , Case No. 2:21-cv-02213-GMN-EJY (D. Nev.)
2013	Petitioner's Initial Invalidity Contentions served July 7, 2022, <i>Ravin Crossbows, LLC v. Hunter's Mfg. Co., Inc.</i> , Case No. 2:21-cv-02213-GMN-EJY (D. Nev.)
2014	Redacted Patent Owner's Opposition to Petitioner's Motion to Stay Case filed May 19, 2023, <i>Ravin Crossbows, LLC v. Hunter's Mfg. Co., Inc.</i> , Case No. 5:23-cv-00598, Dkt. 88 (N.D. Ohio)
2015	Patent Owner's Motion for Leave to File Sur-Reply, filed May 31, 2023, <i>Ravin Crossbows, LLC v. Hunter's Mfg. Co., Inc.</i> , Case No. 5:23-cv-00598, Dkt. 92 (N.D. Ohio)
2016	Patent Owner's Sur-Reply, filed May 31, 2023, <i>Ravin Crossbows, LLC v. Hunter's Mfg. Co., Inc.</i> , Case No. 5:23-cv-00598, Dkt. 92-1 (N.D. Ohio)
2017	Case Management Notice, filed April 11, 2023, <i>Ravin Crossbows, LLC v. Hunter's Mfg. Co., Inc.</i> , Case No. 5:23-cv-00598, Dkt. 83 (N.D. Ohio)
2018	Draft Joint Report of Parties' Planning Meeting for Case Management Conference, dated May 17, 2023

Exhibit No.	Exhibit
2019	Order Denying Defendant's Motion to Defer Deadline for Responsive Pleading, <i>Ravin Crossbows, LLC v. Hunter's Mfg. Co., Inc.</i> , Case No. 2:21-cv-02213-GMN-EJY, Dkt. 30 (D. Nev. May 31, 2022)
2020	Scheduling Order, <i>Ravin Crossbows, LLC v. Hunter's Mfg. Co., Inc.</i> , Case No. 2:21-cv-02213-GMN-EJY, Dkt.36 (D. Nev.)
2021	Exhibit from August 24, 2023 Deposition of Stephen A. Batzer: Batzer POSA Credentials
2022	Exhibit from August 24, 2023 Deposition of Stephen A. Batzer: Screen printout from www.batzerengineering.com/untitled1.html
2023	Exhibit from August 24, 2023 Deposition of Stephen A. Batzer: Screen printout from www.batzerengineering.com/index.html
2024	Exhibit from August 24, 2023 Deposition of Stephen A. Batzer: annotated pages from WO 2011/141771, Stanziale '771, showing Figures 11-14
2025	July 25, 2023 Email String Between Counsel
2026	August 23, 2023 Email String Between Counsel
2027	Excerpts from the Transcript of the August 24, 2023 Deposition of Stephen A. Batzer
2028	August 24, 2023 Email String Between Counsel
2029	Expert Declaration of Jonathan Teater
2030	Transcript of the October 11, 2023 Deposition of Stephen A. Batzer
2031	Copy of an article titled: "Untunable Bow? Nock Travel Could be Your Problem," downloaded from: https://www.bowhuntingmag.com/editorial/untunable-bow-nock-travel-could-be-your-problem/382681
2032	Reserved
2033	Errata for October 11, 2023 Deposition of Stephen A. Batzer

Exhibit No.	Exhibit
2034	Curriculum Vitae of Jonathan Teater
2035	Memorandum Opinion and Order, <i>Ravin Crossbows, LLC v. Hunter's Mfg. Co., Inc.</i> , Case No. 5:23-cv-00598-SL, Dkt. 148 (N.D. Ohio March 1, 2024)

Pursuant to the Board's Order, Paper 45, Patent Owner submits its Initial Claim Construction Brief addressing:

the sufficiency of the following proposed construction of a "string guide" "mounted to" a respective "bow limb" in claim 1 of the '015 patent: "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."

Paper 45, 3.

I. PROPOSED CONSTRUCTION

Petitioner's proposed construction of "mounted to" as "connected to, either directly or indirectly" is unbounded and provides no useful information to a POSA to determine how much or what degree of indirect connection is permitted between a string guide and a bow limb under claim 1 of the '015 Patent. Arguing against this improper and overbroad construction, Patent Owner seeks to provide meaningful limitations as to the scope of this claim term, particularly 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. Patent Owner has focused 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). The Board, seemingly recognizing the deficiencies

in Petitioner's construction of "mounted to," proposes a construction that addresses the "operative features of the claim." Paper 45, 3.

The Board's proposed construction, while providing more guidance than Petitioner's, does not go far enough. It does not provide an affirmative limit on the amount or degree of indirect connection between the string guide and the bow limb permitted by claim 1. The Board's proposed construction also does not account for the operative features of the claim in full because it avoids encompassing the power cables. 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.

Patent Owner respectfully submits that the operation of the power cables should be reflected in any construction that uses the "operative features" of the claim to construe "mounted to." More specifically, Patent Owner proposes that "mounted to" be construed using the operative features of the claim:

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.¹

In the crossbow of claim 1 of the '015 Patent, as supported by the intrinsic evidence, the force applied to the string guide by the power cable is the same force the string guide imparts to the bow limb. In contrast, U.S. Patent Pub. No. 2012/0125302 (“Stanziale ’302”), WO 2011/158062 (“Stanziale ’062”) and WO 2011/141771 (“Stanziale ’771”) (collectively, “the Stanziale References”), all disclose that the force applied to the string guide by the power cables is different than the force imparted to the bow limb due to the mechanical advantage provided by the lever found between the string guide and the bow limb in each of the Stanziale References.

With Patent Owner’s proposed revision, the proffered construction of “mounted to” is sufficient to relay to a POSA the functional relationship between the string guide and bow limb resulting from the operative features of the claim related to the loading of the bow limb in response to movement of the drawstring,

¹ The language added by Patent Owner to the Board’s proposed construction is underlined.

string guide, and power cables, which is based on the plain language of the claim. In other words, a POSA would understand that the connection of the string guide to the bow limb, whether connected directly or indirectly, results in the string guide imparting the same force to the bow limb that the power cables impart to the string guide.

II. PATENT OWNER'S PROPOSED CONSTRUCTION IS SUPPORTED BY INTRINSIC EVIDENCE

A. The '015 Patent Specification

The specification of the '015 Patent supports that the Patent Owner's proposed construction accounts for the operative features of the claim. First, in the Background of the Invention, the '015 Patent explains that "[m]ore advanced bows include cams that increase the mechanical advantage associated with the draw of the bowstring....[s]uch cams preferably use power cables that load the bow limbs." EX1001, 1:12-16. In other words, the cams/string guides impart the force to the bow limb via the use of power cables. The '015 Patent then describes with particularity how the string guides impart force on the bow limb via power cables.

For example, in one embodiment of the '015 Patent:

When the bow 150 is drawn, the draw string 162 unwinds from the draw string journals toward the up range side 180 of the bow 150, thereby rotating the string guides 158 in direction 166. First power cable

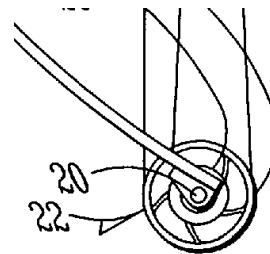
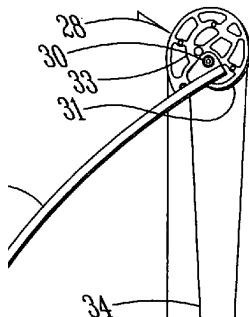
168A is secured to the first string guide 158A at first attachment point 170A and engages with a power cable take-up with a helical journal 172A (see FIGS. 7 and 8) as the bow 150 is drawn. [] Second power cable 168B is secured to the second string guide 158B at first attachment point 170B and engages with a power cable take-up with a helical journal 172B (see FIGS. 7 and 8) as the bow 150 is drawn. [] **The power cable take-ups 172 are arranged so that as the bow 150 is drawn, the bow limbs 154 are drawn toward one another.**

EX1001, 5:32-39; 5:43-46; 5:49-51 (emphasis added). In another embodiment, the “[p]ower cables 374 are attached to the string guides 316 at attachment points 376A, 376B (“376”).” EX1001, 6:46-47. Then, “[o]pposite ends 380A, 385B (“380”) of the power cables 374 are attached to anchors 378A, 378B (“378”) on the center portion 354.” EX1001, 6:47-50. This too substantiates the contemplated arrangement between the string guide and the bow limb.

Thus, as disclosed in the '015 Patent, when the bow is drawn, the drawstring applies force to the string guide, causing the string guide to rotate. *See* EX2005. This rotation then causes the power cables to wrap onto the power cable journal, applying force to the string guide such that the string guide imparts the force to the bow limb (i.e., loads the bow limb). *See id.* As such, the specification of the '015 Patent supports Patent Owner's revision to the proposed construction.

B. The '015 Patent Prosecution History and Subsequent Related Patents

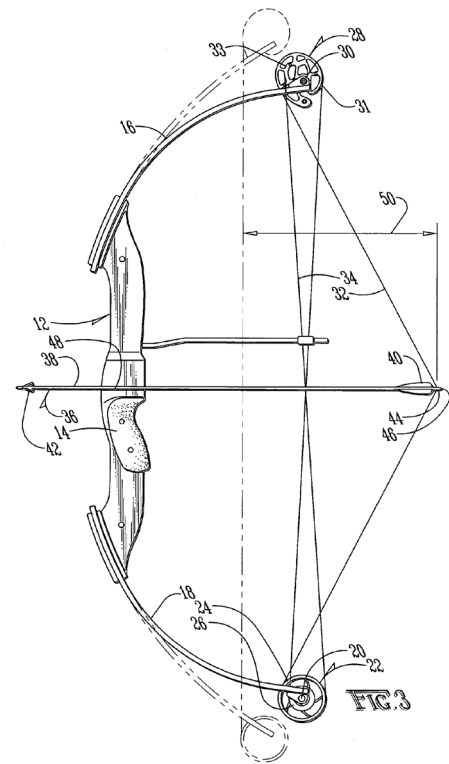
Patent Owner's revision to the Board's proposed construction also comports with how the examiner understood the operative features of the claim as to the functional relationship between the string guide and bow limb during prosecution. Specifically, the examiner determined that U.S. Patent No. 7,708,001 ("Kempf '001") disclosed first/second string guides mounted to the first/second bow limb citing cam 28 and pulley 22, even though Kempf uses a bracket to connect the string guide to the bow limb. EX1002, 105-106. Further, as the examiner stated, Kempf '001 discloses a power cable (34). EX1002, 106.



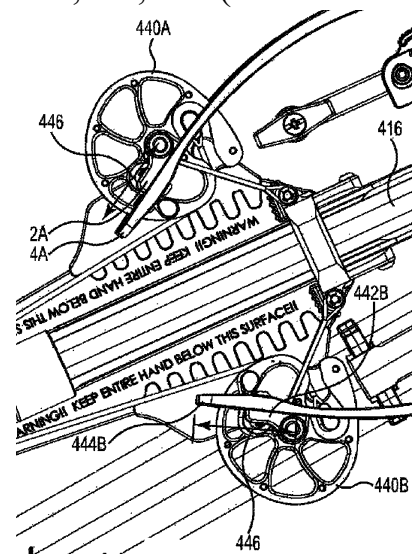
EX1008, Figure 1 excerpts. Patent Owner did not dispute that Kempf '001 disclosed first/second string guides mounted to first/second bow limbs and power cables attached to the string guides. EX1002, 74-75.

Petitioner agrees that the cam and pulley of Kempf '001 are "mounted to" the bow limb via a mounting bracket. Paper 31, 5. As such, the operative features of the

claim as to the draw string, string guide, power cables, and bow limb, as proposed by Patent Owner, is illustrated in Kempf '001. As shown in Figure 3, as the drawstring (32) imparts force to the string guides (28, 22), this causes the string guides (28, 22) to rotate, which then causes the power cable (34) to wrap on to the power cable journal (33), therefore applying force to the string guides (28, 22) such that the string guides (28, 22) then impart that force to the limbs (16, 18). EX1008, Figure 3.



Also relevant to the intrinsic record are the disclosures in patents claiming priority to the '015 Patent. For example, U.S. Patent No. 9,494,379 ("the '379 Patent"), discloses an indirect connection between the string guide and blow limb: "[c]ams 440A, 440B ('440') are attached to the limbs 420 by axle mounts 442A, 442B ('442'). In the illustrated embodiment, the axle mounts 442 are attached to the limbs 420 offset a distance 446 from the proximal ends 444A, 444B ('444') of the limbs 420." EX1006, 8:30-34; Figure 14A.



As with Kempf '001, even with the use of an indirect connection the '379 Patent discloses the operative features of the claim because as the drawstring (620) imparts force on the string guide (440), which causes the string guides (440) to rotate, which then causes the power cables (610) to wrap on to the power cable journals (460), therefore imparting force to the string guides (440), such that the string guides (440) then impart that force to the limbs (400). EX1006, Figures 23A, 24A.

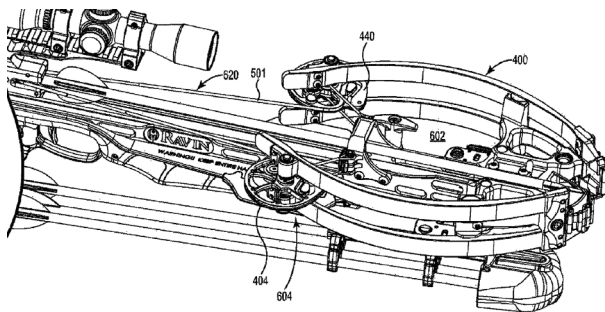


Fig. 23A

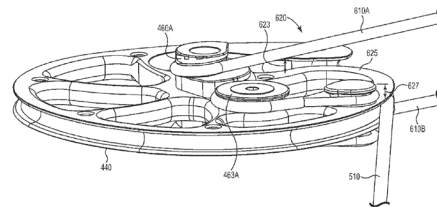


Fig. 24A

EX1006, Figures 23A, 24A. As such the intrinsic record from patents related to the '015 Patent supports the Board's proposed construction as revised by Patent Owner.

C. The Stanziale References

Petitioner relies on its strained construction of “mounted to” for its anticipation arguments surrounding the Stanziale References. However, in contrast to the operative features of claim 1 of the '015 Patent, the Stanziale References disclose a string guide that is not mounted to the bow limb in a manner that is within the scope of proposed construction. Indeed, because the intervening lever between the string guide and the bow limb in each of the Stanziale References provides a mechanical advantage, the force the string guide imparts to the bow limb is changed

by the intervening lever and thus is different than the force the drawstring imparts to the string guide.

As Patent Owner described in its Response, Stanziale '302 discloses that the string guides (pulley assemblies (50)) are mounted to levers (40) and are not mounted to the bows limbs (elastic members) (10)).

Paper 25, 11-14. It is the levers (40) (green) that impart force on the bow limbs (10) (red), rather than the string guides (50) (blue). As shown in Fig. 4, the levers pivot, creating a mechanical advantage apart

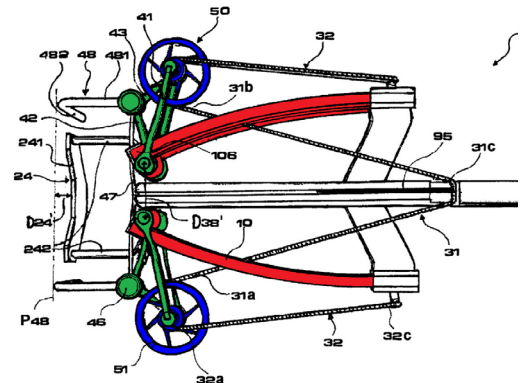


FIG. 4

from the force imparted on the levers (40) by the string guide (50). As such, the force imparted on the bow limb (10) by the levers (40) is not the same as the force imparted on the string guide (50) by the power cables (second flexible element) (32).

Stanziale '062 discloses two intervening structures, first the string guide (pulley assemblies (145-146-147)) (blue)

are attached to auxiliary arms (620) (green) which are then attached to stirrups (630) (yellow), which are attached to the bow limbs (elastic members (610)) (red).

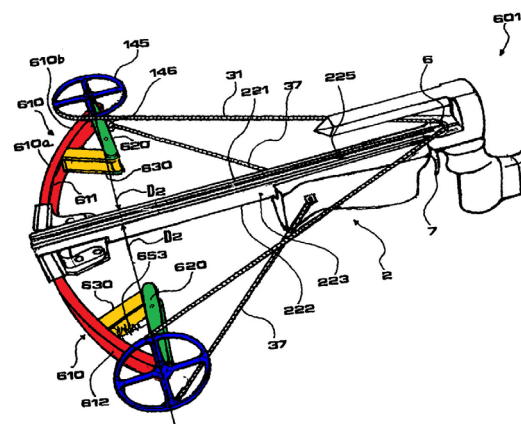


FIG. 1A

Paper 25, 28-31. As with Stanziale '302,

in Stanziale '062 the auxiliary arms (620) function as a lever between the pulley

assemblies (145-146-147) and the elastic members (610) creating a mechanical advantage apart from the force imparted on the auxiliary arms (620) by the string guide (145-145-147). As a result, the force imparted on the bow limbs (610) by the auxiliary arms (620) is not the same as the force imparted on the string guides (145-145-147) by the power cables (flexible force element (37)).

Stanziale '771 also discloses two intervening structures: the string guides (pulley assemblies 145-146-147) are attached to the pushing arms 32 (green) which are attached to elements 27 (yellow), which are then attached to the bow limb (elastic members (10)). Paper 25, 38-41. In Stanziale '771, the

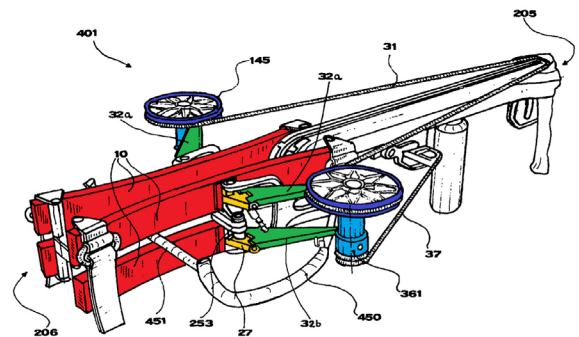


FIG. 12

pushing arm (32) is hinged on the element (27) allowing the pushing arm act as a lever, creating a mechanical advantage apart from the force imparted on the pushing arms (32) by the string guide (145-145-147). As a result, the force imparted on the bow limb (10) by the pushing arms (32) is not the same as the force imparted on the string guide (145-145-147) by the power cables (flexible force member (37)).

As the proper construction of “mounted to” requires the force imparted by the string guide to the bow limb to be the same as the force imparted by the power cables to the string guide, none of the Stanziale References anticipate claim 1 of the '015 Patent.

Dated: May 3, 2024

Respectfully submitted,

/Christopher M. King/
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IPR2023-00407
U.S. Patent No. 9,354,015

Patent Owner's Initial
Claim Construction Brief

CERTIFICATE OF COMPLAINT

This Patent Owner's Initial Claim Construction Brief complies with the Board's Order that it is no more than ten (10) pages. Paper 45, 3.

Dated: May 3, 2024

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IPR2023-00407
U.S. Patent No. 9,354,015

Patent Owner's Initial
Claim Construction Brief

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing **Patent Owner's Initial Claim Construction Brief** was served on May 3, 2024, by email to
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Dated: May 3, 2024

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