

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BOWMAR ARCHERY LLC,
Petitioner,

v.

MATTHEW FUTTERE,¹
Patent Owner.

IPR2024-00401
Patent 8,043,177 B2

Before SCOTT A. DANIELS, CARL M. DEFRANCO, and
SEAN P. O'HANLON, *Administrative Patent Judges*.

Opinion for the Board by DEFRANCO, *Administrative Patent Judge*.

Opinion dissenting by O'HANLON, *Administrative Patent Judge*.

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

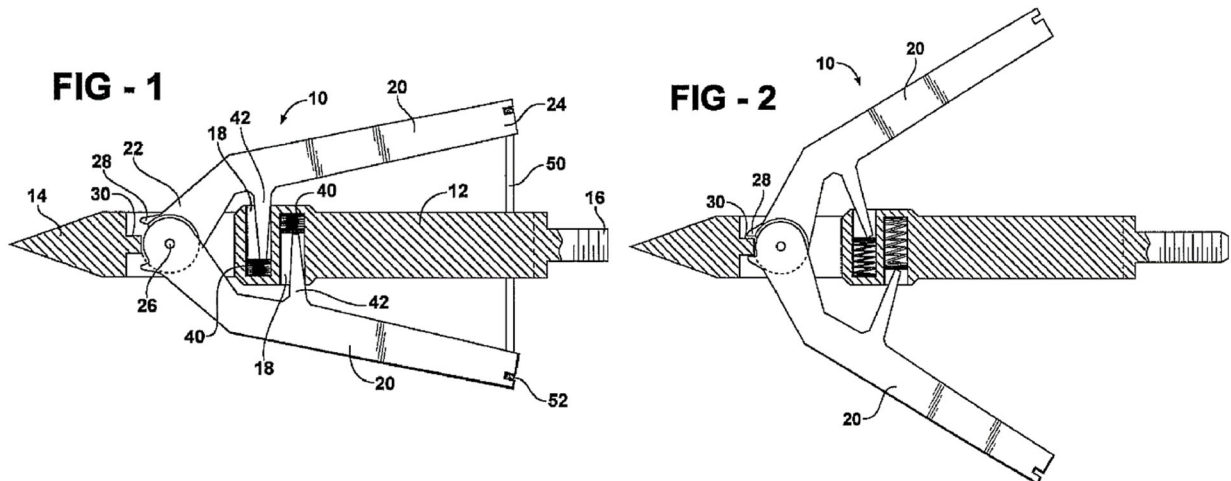
¹ Although the captions of the Petition and Preliminary Response list Veteran's Innovative Products, LLC as the patent owner, the Office's records indicate that Matthew Futtere is the owner of the '177 patent. *See* Paper 4, 2; Paper 6, 8.

Matthew Futtere (“Futtere”) is the owner of U.S. Patent 8,043,117 B2 (“Ex. 1001, “the ’177patent”).² Bowmar Archery LLC (“Bowmar”) filed a petition for *inter partes* review of claims 1–4, 7, 9, 11, 12, 15, and 17 of the ’177 patent. Paper 2 (“Pet.”). Futtere filed a preliminary response. Paper 6 (“Prelim. Resp.”). Exercising our jurisdiction under 35 U.S.C. § 314(a), we institute *inter partes* review of all claims as challenged in the petition.

I. BACKGROUND

A. The Challenged Patent

The ’177 patent discloses “arrowheads with blade members that are collapsible to allow the arrow to pass through bone and outwardly biased to increase the amount of flesh cut by the blade members after passing through the bone.” Ex. 1001, 1:6–10. Figures 1 and 2, reproduced below, illustrate such an arrowhead, also known as a broadhead.



As shown, arrowhead 10 comprises ferrule 12 and blade members 20. *Id.* at 2:51–62. The ferrule includes tip 14, attachment portion 16, and a body extending therebetween. *Id.* at 2:53–58. The blade members are

² Futtere identifies Veteran Innovative Products, LLC as also being a real party in interest. Paper 4, 2.

coupled to the ferrule such that they are movable between a retracted position, as shown in Figure 1, and an extended position, as shown in Figure 2. *Id.* at 2:59–62. Biasing members 40 urge and hold the blade members in the extended position. *Id.* at 3:35–36.

In use, the arrowhead is attached to the shaft of an arrow, and the arrow is fired toward an animal. *Id.* at 4:1. Retaining element 50 maintains the blade members in the retracted position to reduce the size of the arrowhead and thereby increase accuracy of the shot. *Id.* at 3:45–46, 4:1–5. The blade members remain in the retracted position as the arrowhead penetrates the animal until the tissue penetrated by the arrowhead pushes the retaining element rearward to disengage from the blade members. *Id.* at 3:54–59, 4:5–8. The blade members then move to, and are held in, the extended position due to the influence of the biasing member to maximize the cutting surface of the arrowhead through the animal tissue. *Id.* at 4:8–10, 4:21–24. When the arrowhead encounters bone, the blade members collapse toward the retracted position to allow the arrowhead to pass through the bone. *Id.* at 4:10–13. The biasing member returns and holds the blade members in the extended position once the arrowhead passes through the bone. *Id.* at 4:13–16.

B. The Challenged Claims

Of the challenged claims, claims 1 and 11 are independent. Claim 11 is illustrative and reproduced below (with emphasis on limitations in dispute).

11. A broadhead for an arrow having a shaft, the broadhead comprising:
 - a ferrule having a rearward end configured for attachment to the shaft and an opposite forward end with a ferrule body

extending therebetween, the forward end of the ferrule defining the forward tip of the arrow and being fixed with respect to the ferrule body;

a first blade member having a forward end pivotally interconnected with the ferrule body and an opposite rearward end, the first blade member having a retracted position wherein the rearward end is spaced from the ferrule body at a first distance and an extended position wherein the rearward end is spaced from the ferrule body by a distance which is greater than the first distance, the pivotal interconnection between the first blade member and the ferrule body being at a fixed position relative to the ferrule body;

a second blade member having a forward end pivotally interconnected with the ferrule body and an opposite rearward end, the second blade member having a retracted position wherein the rearward end is spaced from the ferrule body at a first distance and an extended position wherein the rearward end is spaced from the ferrule body by a distance which is greater than the first distance, the pivotal interconnection between the second blade member and the ferrule body being at a fixed position relative to the ferrule body; and

at least one biasing member biasing the first and second blade members towards the extended positions.

Ex. 1001, 6:13–41 (emphases added).

C. Asserted Grounds of Unpatentability

Challenged Claims	35 U.S.C. §	Basis
1–4, 7, 9, 11, 12, 15, 17	102(b)	Lint ³
11, 12, 15, 17	102(e)	Vandewater ⁴
1–4, 7, 9, 11, 12, 15, 17	103(a)	Lint, Minisini, ⁵ Krieger ⁶

³ US 3,168,313, issued Feb. 2, 1965 (Ex. 1002, “Lint”).

⁴ US 8,016,704 B1, issued Sep. 13, 2011 (Ex. 1003, “Vandewater”).

⁵ US 2,806,317, issued Sep. 17, 1957 (Ex. 1005, “Minisini”).

⁶ US 2,212,345, issued Aug. 20, 1940 (Ex. 1006, “Krieger”).

Challenged Claims	35 U.S.C. §	Basis
11, 12, 15, 17	103(a)	Hendricks ⁷
1–4, 9, 11, 12, 17	102(b)	Liechty ⁸

Bowmar submits the declaration of Todd A. Kuhn, Ph.D. in support of its challenges. *See* Ex. 1019. Futterer does not submit any declaration with its preliminary response.

II. ANALYSIS

A. Level of Ordinary Skill in the Art

Bowmar contends that one of ordinary skill in the art “would have had either: (1) a bachelor’s degree in the field of mechanical engineering and/or related field, and at least two years of work experience in the development of broadheads; or (2) any education and experience equivalent to (1).” Pet. 5 (citing Ex. 1019 ¶ 22). Futterer responds that one of ordinary skill in the art “would have either 1) minimum of five years’ experience with developing broadheads or 2) a combination of formal mechanical engineering and experience with developing broadheads.” Prelim. Resp. 10.

The level of ordinary skill as proposed by Bowmar and Futterer appears to be consistent with that of the ’177 patent and the asserted prior art. Thus, for purposes of institution, we adopt the ordinary level of skill as defined by the parties, namely, “a bachelor’s degree in the field of mechanical engineering and/or related field, and at least two years of work experience in the development of broadheads” or a “minimum of five years’ experience with developing broadheads.” Pet. 5; Prelim. Resp. 10.

⁷ US 3,600,835, issued Aug. 24, 1971 (Ex. 1013, “Hendricks”).

⁸ US 6,287,224 B1, issued Sep. 11, 2001 (Ex. 1012, “Liechty”).

B. Claim Construction

Bowmar proposes that the claim term “ferrule” should be construed as a “generally cylindrical body.” Pet. 19. Futterer responds with proposed constructions for two other claims terms, namely, that “blade member” be construed as “hav[ing] a cutting edge or flat sharp part” and that “biasing member” be construed as “a structure that pushes against another structure.” Prelim. Resp. 11 (citing Ex. 1001, 1:9–10, 3:35–44, 4:5–6, 4:21–24, 4:58–62; Ex. 1003, 3:37–38, 3:63–66; Ex. 2006).

At the outset, we note that Futterer does not dispute Bowmar’s proposed construction of “ferrule” and, in turn, Bowmar does not dispute Futterer’s proposed construction of “biasing member.” *See* Prelim. Resp. 11; Pet. 46. Thus, for purposes of institution, we adopt the parties’ proposed constructions of those claim terms.

Bowmar does appear to dispute Futterer’s proposed construction of “blade member,” asserting that the plain and ordinary meaning of the term does not require that it have a sharp edge, as proposed by Futterer. *See* Pet. 49. As discussed below, the challenge on which we institute indisputably includes a “blade member” under Futterer’s proposed construction. Thus, we do not need to provide an express construction of “blade member” at this stage. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (alteration in original) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’”)). The parties are free to further explore the meaning of this term at trial.

C. Anticipation by Vandewater

Bowmar challenges independent claim 11 and dependent claims 12, 15, and 17 as being anticipated by Vandewater. Pet. 36–48. In support of this challenge, Bowmar relies upon the declaration testimony of its expert. *Id.* (citing Ex. 1019 ¶¶ 91–107). We begin with independent claim 11.

1. Claim 11

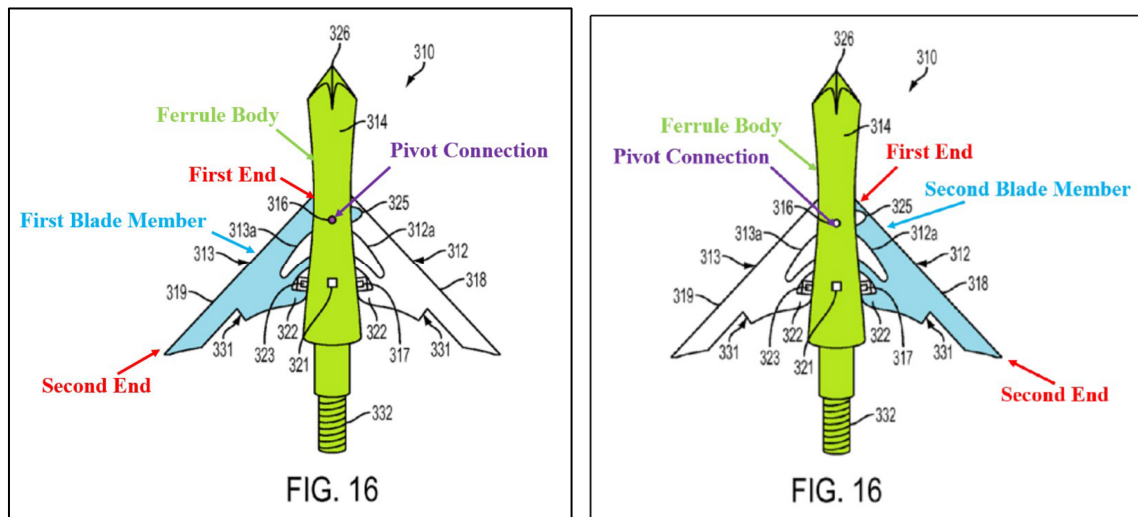
Futere responds that Vandewater lacks two limitations of claim 11, but does not otherwise dispute Vandewater’s disclosure of the claim’s basic elements, such as a ferrule, a first blade member, a second blade member, and at least one biasing member. *See* Prelim. Resp. 16–19. Instead, Futere argues, *first*, that Vandewater’s first and second blade members lack “a forward end pivotally interconnected with the ferrule body,” as claimed, and, *second*, that Vandewater’s biasing member does not bias the first and second blade members “towards the extended positions,” as also claimed. *Id.* We address each of these claim limitations as follows.

a. “a forward end pivotally interconnected with the ferrule body”

Independent claim 11 recites that the arrowhead comprises first and second blade members, each “having *a forward end* pivotally interconnected with the ferrule body.” Ex. 1001, 6:20–21, 6:30–31 (emphasis added). To meet this claim limitation, Bowmar relies on multiple embodiments in Vandewater. *See* Pet. 39–40. First, Bowmar notes Vandewater’s embodiment of *arrowhead 210* as shown in Figures 7–11, stating that “[t]he pivot connection between blades 212 and 213 and body 214 allows the blades to fold or deploy and to pivot after deployment, and may be made with a set screw or other threaded connector or the like. Alternatively, the pivot connection may be established with . . . other such device, as will be

apparent to the skilled artisan.” *Id.* at 39 (citing Ex. 1003, 7:33–39, Figs. 7–11).

Bowmar also relies on Vandewater’s embodiment of *arrowhead 310* as shown in Figures 15–20 of Vandewater, in particular, annotating Figure 16 of Vandewater, reproduced below, to map various components of Vandewater’s arrowhead 310 to the claimed invention. *See id.* at 39, 43.



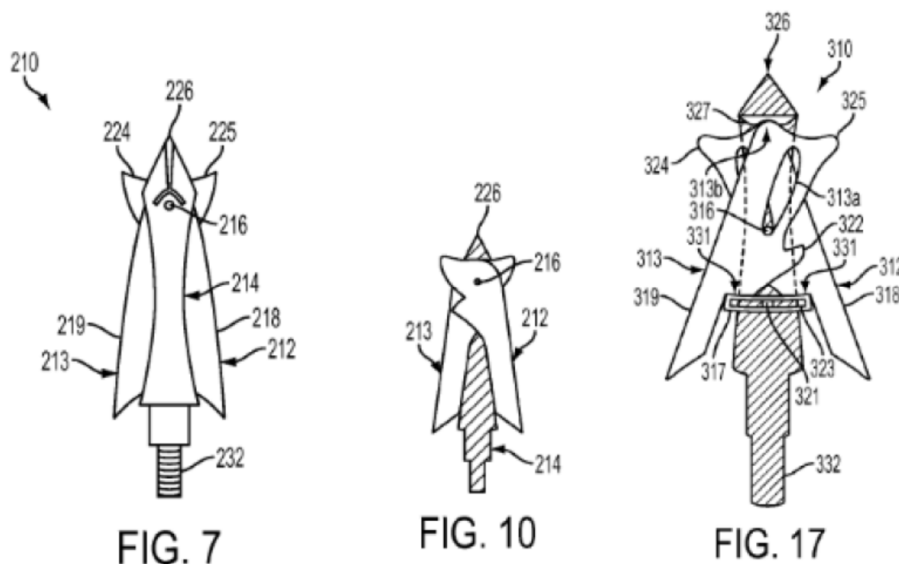
Bowmar’s annotations of Figure 16 are self-explanatory and illustrate how Vandewater’s blade members 312, 313 (blue) have a forward end (labeled “First End”) that is pivotally interconnected to ferrule body 314 (green) via pivot connection 316 and elongate apertures 312a and 313a.

In support of combining the various teachings of the embodiments shown in Figures 7–11 and Figures 15–20, Bowmar notes Vandewater’s disclosure that

Arrowhead 310 [Figures 15–20] may be substantially similar to arrowhead 210 [Figures 7–11], discussed above, such that a detailed discussion of the arrowheads need not be repeated herein. The similar components are referenced in FIGS. 7–12 and 15–20 with like reference numbers, but with the reference numbers of FIGS. 15–20 having 100 added thereto.

Id. at 40 (citing 8:49–52) (emphasis added). That disclosure supports Vandewater’s recognition of alternative pivot connections for the blade members, including a simple hole as shown in Figures 7–11 or an elongate aperture as shown in Figures 15–20.

Futtre responds that Vandewater discloses “a two-arm lever with the connection point disposed *between* the first end and second” and “not a pivot point at the forward end.” Prelim. Resp. 16–17 (emphasis added). In other words, according to Futtre, the pivot point for Vandewater’s blades is at a *midpoint* of the blades, not a *forward end* of the blades. In support, Futtre points to Figures 7, 10, and 17 of Vandewater, which are reproduced below. *Id.* at 17.



We disagree with Futtre’s assertions. At the outset, we note that the claims merely require that the pivotal connection be located at the “forward end” of the blade members, not their forwardmost end. Vandewater’s Figures 7 and 10 clearly depict pivot connection 216 at the forward end of blade members 212 and 213. Under no circumstances do we discern how one skilled in the art would view those figures as depicting the pivot

connection at a midpoint of the blades, as Futtere contends. And, without question, Bowmar relies on the embodiment of arrowhead 210, as shown in Figures 7–11, by referencing Vandewater’s disclosure of “[t]he pivot connection between blades 212 and 213 and body 214.” Pet. 39 (citing Ex. 1003, 7:33–39, Figs. 7–11). Moreover, Bowmar notes Vandewater’s disclosure that similar components of arrowhead 210 (the embodiment in Figures 7–11) may be applied to arrowhead 310 (the embodiment in Figures 15–20). *See id.* at 40 (citing 8:49–52). With that in mind, we find that Vandewater clearly contemplates embodiments of the arrowhead wherein a pivotal connection is located at the forward end of the blade members. *See Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1343–44 (Fed. Cir. 2016) (holding that, although the anticipating prior art reference did not describe a specific example of a computer program that used two differently described functions, i.e., tools, together, “[the reference] did contemplate combining the disclosed functionalities.”). Futtere’s failure to address Vandewater’s express teaching of locating the pivot connection at the forward end of the blade members is fatal to its argument.

As for Futtere’s focus on Vandewater’s Figure 17, we agree it shows pivot connection 316 proximate the midpoint of blade members 312 and 313. But looking at Vandewater’s Figure 17 alone disregards Bowmar’s additional reliance on Vandewater’s Figures 16 and 18 and their corresponding descriptions of how the blade members pivot via elongate apertures 312a and 313a and pivot pin 316. More specifically, Vandewater’s Figures 17 and 18, reproduced below, depict Vandewater’s blade members 312 and 313 in the retracted position (Figure 17) and the deployed position (Figure 18). Ex. 1003, 2:48–50, 10:13–14.

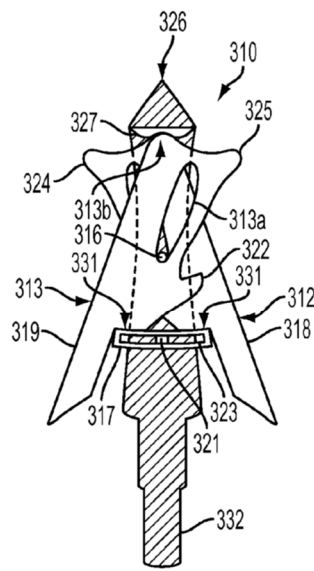


FIG. 17

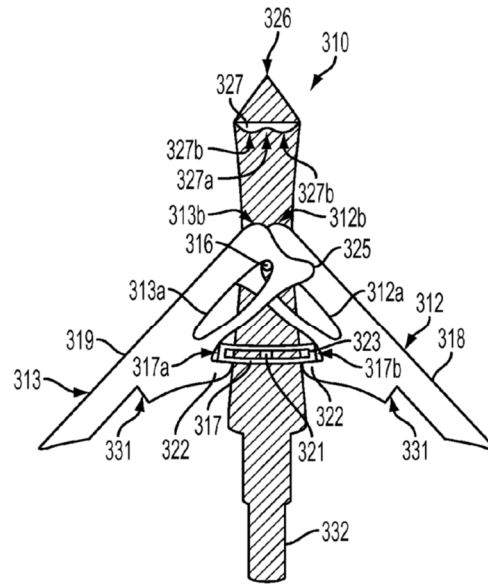


FIG. 18

As shown and described, the blades “move and pivot” from the folded position to the deployed position upon impact of opening levers 324, 325 with an object, such as an animal. *Id.* at 9:19–41. During deployment, the blade members rotate about pivot pin 316 until shelves 331 disengage from pivot-limiter 317. *Id.* at 9:28–33, 10:48–55. Upon disengagement from the shelves, the blade members continue to pivot outward about pivot pin 316 while also sliding aft along elongate apertures 312a, 313a under the guidance of pivot pin 316. *Id.* at 9:41–60; *see also id.* at 10:53–57 (describing “aft movement and pivotal movement of the blades relative to the body and pivot pin” upon disengagement from the shelf regions). Notably, Vandewater describes pivoting movement of the blade members as follows:

The aft motion combined with pivoting motion of the blades during deployment is facilitated by the elongated curved or arcuate shapes of apertures 312a, 313a in blades 312, 313, which *permit pivot pin 316 to travel along the respective apertures from the aft ends of the apertures in the undeployed state*

([Figures] 15 and 17) to the forward ends of the apertures in the deployed state ([Figures] 16 and 18).

Id. at 9:41–48 (emphasis added).

As clearly described, pivotal movement of Vandewater’s blade members occurs from the aft end *to the forward end* of elongate apertures 312a and 313a as the blade members rotate to a deployed state. And because, indisputably, the forward end of the elongate aperture is located at the forwardmost end of the blade member, we reject the notion that Vandewater’s blade members lack “a forward end pivotally interconnected with the ferrule body,” as required by claim 11. Moreover, although Vandewater describes the pivoting motion of the blade members as being combined with an aft motion via the elongate aperture, nothing in the claim language prohibits such additional movement given the open-ended nature of the claim.⁹

In any event, once deployed, Vandewater’s blade members are capable of pivotal movement even after the pivot pin is at the forward ends of the elongate apertures in the blade members. In particular, as described, Vandewater’s blade members may continue to pivot *as a unitary whole blade* about pivot pin 316—

Once the blades are in the deployed state, their respective locking tabs 322 engage opposite end portions 317a, 317b of pivot-limiter 317 and are *capable of pivoting about pivot pin 316 (which is positioned at the forward ends of the apertures 312a,*

⁹ Indeed, the challenged ’177 patent appears to contemplate just such an arrangement. *See* Ex. 1001, 3:25–28 (“It should be appreciated that the front end 22 of the blade members 20 may be coupled to the ferrule 12 near the tip 14 by other arrangements, such as by a pivot pin pivotally *and/or slidably coupled in a slot.*”) (emphasis added).

313a of the blades) to the extent permitted by guide pin 321 in channel 323.

Id. at 9:48–53 (emphasis added).

Importantly, nowhere does the claim language specify whether the pivotal interconnection allows the blade members to pivot independently and/or as a unit. Nor does the claim language specify whether pivotal movement occurs during deployment and/or after deployment. Instead, the claim language simply requires that the forward end of each blade member be “pivotally interconnected with the ferrule body,” regardless of when pivoting of the blade members occurs. Thus, even assuming Vandewater discloses that the blade members may only pivot as a unit when the pivot pin is positioned at the forwardmost end of the elongate apertures, that disclosure nonetheless satisfies the claim limitation of the blade members “having a forward end pivotally interconnected with the ferrule body.”

For the above reasons, we find that Bowmar adequately demonstrates that Vandewater’s blade members have forward ends pivotally interconnected with the ferrule body, as called for by claim 11.

b. “biasing member biasing the first and second blade member towards the extended positions”

Independent claim 11 recites “at least one biasing member biasing the first and second blade members towards the extended positions.” Ex. 1001, 6:40–41. For this claim limitation, Bowmar relies on Vandewater’s disclosure of “a retaining mechanism . . . such as a biasing element with a ball bearing or a spring wheel” that is used to “retain the blades in a centered position when in their deployed position.” Pet. 45 (citing Ex. 1003, 7:55–8:2). Bowmar also provides supporting testimony from its expert to show how one of ordinary skill in the art would have understood

Vandewater’s teaching of the biasing element in conjunction with the blade members depicted in Figure 16. *See id.* at 46.

Futere responds by acknowledging Bowmar’s reference to “a generic paragraph in Vandewater in which *a biasing member is discussed to deploy the blade members.*” Prelim. Resp. 19 (emphasis added). Nonetheless, Futere disputes Vandewater’s so-called “generic” disclosure because “Vandewater fails to provide any enablement of such an idea as the text fails to clarify and the figures . . . fail to disclose such an embodiment.” *Id.* We reject Futere’s reasoning, as it amounts to conclusory attorney argument lacking in meaningful evidentiary support. On the other hand, Bowmar provides *unrebutted* expert testimony to support finding that Vandewater’s biasing member is part of the embodiments of Figures 7–10 and Figures 15–20 relied upon by Bowmar and that such biasing member is used “to deploy the blade members,” as admitted by Futere. Thus, in the absence of rebuttal evidence from Futere, we find that Bowmar adequately explains how Vandewater’s biasing element biases the blade members to a deployed, i.e., extended, position, thereby satisfying the “biasing” limitation of claim 11.

c. Conclusion

For at least the foregoing reasons, Bowmar demonstrates a reasonable likelihood of prevailing in showing that at least independent claim 11 is anticipated by Vandewater.

2. Dependent Claims 12, 15, and 17

At this stage, Futere offers no response to Bowmar’s challenge of dependent claims 12, 15, and 17 as being anticipated by Vandewater, except presumably to rely on its argument against Bowmar’s challenge of base

claim 11. *See* Prelim. Resp. 16–19 (addressing only claim 11). Because Bowmar’s anticipation challenge of claim 11 already satisfies the threshold for institution, we do not further address the dependent claims in the absence of any rebuttal from Futterer.

D. Bowmar’s Additional Challenges

Bowmar challenges claims 1–4, 7, 9, 11, 12, 15, and 17 as anticipated by Lint and as obvious over either Lint alone or Lint in view of either Minisini or Krieger. *See* Pet. 20–36, 48–58. Bowmar also challenges claims 11, 12, 15, and 17 as obvious over Hendricks alone or Hendricks in view of the knowledge in the art. *See id.* at 58–72. Each of these challenges centers on the issue of whether one of ordinary skill in the art would have understood a “barb” as having a sharp or cutting edge akin to a blade member. *See* Ex. 1019 ¶¶ 114–119, 162–163. At this stage, we think analysis of this issue is best left for trial after full development of the record.

Bowmar also challenges claims 1–4, 9, 11, 12, and 17 as anticipated by Liechty. *See* Pet. 73–86. But in doing so, Bowmar maps Liechty’s “fully open position,” as shown in Figure 5 (Ex. 1012, 8:53–56), to the claimed “retracted position.” *Id.* at 76. We fail to see how Liechty’s fully open position qualifies as a retracted position. Thus, we do not find this challenge particularly persuasive.

Nonetheless, because we find that Bowmar’s Vandewater-based challenge satisfies the threshold for institution, we need not further address Bowmar’s other challenges at this time.

III. CONCLUSION

For the above reasons, we determine that Bowmar demonstrates a reasonable likelihood of unpatentability with respect to at least claim 11 of

the '177 patent. And because “[e]qual treatment of claims and grounds for institution purposes has pervasive support in *SAS*,” we institute on all the claims as challenged in the petition. *See* 37 C.F.R. § 42.108(a), (c); *PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018) (citing *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018)).

IV. ORDER

Accordingly, it is:

ORDERED that an *inter partes* review of claims 1–4, 7, 9, 11, 12, 15, and 17 of the '177 patent is *instituted*; and

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

IPR2024-00401
Patent 8,043,177 B2

UNITED STATES PATENT AND TRADEMARK OFFICE

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Patent 8,043,177 B2

Opinion dissenting by O'HANLON, *Administrative Patent Judge*.

INTRODUCTION

I respectfully dissent from my colleagues’ decision to institute *inter partes* review. In my view, Petitioner has failed to set forth a reasonable likelihood that it would prevail with respect to any of its challenges to the claims of the ’177 patent and the majority improperly makes arguments on behalf of Petitioner. As the majority opinion discusses only Petitioner’s anticipation challenge based on Vandewater, I likewise direct my comments only to this challenge.

ANALYSIS

Pivotally Interconnected

Independent claim 11 recites a broadhead comprising first and second blade members, each “having a forward end pivotally interconnected with the ferrule body.” Ex. 1001, 6:20–21, 6:30–31. Petitioner appears to map a portion of Vandewater’s blades 312, 313 adjacent body 314 in the deployed position to the recited forward ends. Pet. 39, 43 (reproducing and annotating Vandewater Figure 16 to add “First End” labels to Vandewater’s blades 312, 313).

Patent Owner argues that “Vandewater . . . discloses a two-arm lever with a pivot point in between, not a pivot point at the forward end.” Prelim. Resp. 17. Patent Owner reproduces Figures 7, 10, and 17 in support of its arguments. *Id.* at 16–17.

I agree with Patent Owner. To map Vandewater’s disclosure to the recited forward end, Petitioner merely reproduces and annotates Vandewater Figure 16. Pet. 39, 43. Petitioner’s annotation regarding Vandewater’s second blade 313 is reproduced below.

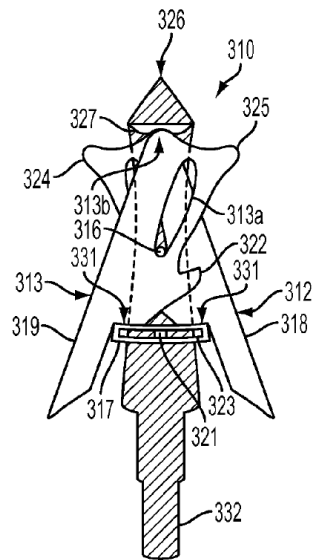


FIG. 17

Figure 17 is a partial sectional view of arrowhead 310 with blades 312, 313 in the folded position. Ex. 1003, 2:48–50, 10:13–14. The blades move from the folded position to the deployed position upon influence of the arrow's impact forces upon opening levers 324, 325. *Id.* at 9:19–26, 9:28–33. The blades initially pivot until the shelf regions 331 disengage from the pivot-limiter 317. *Id.* at 10:48–53. As seen in Figure 17, the blades rotate about pivot pin 316 at a middle position of the blades rather than at a forward end thereof. Once the shelves are disengaged from the pivot limiter, the blades continue to pivot outward and also move aft. *Id.* at 10:57–60. Thus, the blades move with “aft motion combined with pivoting motion.” *Id.* at 9:41–48.

The aft motion combined with pivoting motion of the blades during deployment is facilitated by the elongated curved or arcuate shapes of apertures 312a, 313a in blades 312, 313, which permit pivot pin 316 to travel along the respective apertures from the aft ends of the apertures in the undeployed state ([Figures] 15 and 17) to the forward ends of the apertures in the deployed state ([Figures] 16 and 18).

Id. Thus, when the blades have moved to a position such that pivot pin 316 is adjacent the forward ends of the blades, the blades are locked in the deployed position and are no longer in movement. *See id.* at Fig. 18. In my view, Petitioner fails to explain adequately how Vandewater discloses first and second blade members having a *forward end* pivotally interconnected to the ferrule body as recited in claim 11. Petitioner’s conclusory annotations of Vandewater Figure 16, devoid of any discussion, lacks the requisite level of particularity required for a petition. *See* 35 U.S.C. § 312(a)(3); *Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016) (“It is of the utmost importance that petitioners in the IPR proceedings adhere to the requirement that the initial petition identify ‘with particularity’ the ‘evidence that supports the grounds for the challenge to each claim.’”).

The majority refers to Vandewater’s embodiment illustrated in Figures 7 and 10 as depicting a pivot connection and characterizes the Petition as having “express reliance on that ‘alternative’ embodiment for locating the pivot connection at the forward end of the blade members.” Maj. Op. 9–10. In my view, the majority improperly supplements the arguments advanced by Petitioner, as the Board is not “free to adopt arguments on behalf of petitioners that could have been, but were not, raised by the petitioner” *In re Magnum Oil*, 829 F.3d 1364, 1381 (Fed. Cir. 2016). The Petition relies on the embodiment disclosed in Figures 15–20. *See* Pet. 36–46 (reproducing and annotating Vandewater Figures 15 and 16). Although Petitioner notes that Vandewater describes the embodiment depicted in Figures 15–20 as being similar to the embodiment depicted in Figures 7–12 (*see* Pet. 40 (citing Ex. 1001, 8:49–52)), it is precisely the

manner in which the blades are attached and deployed that is different (that is, *not* similar) between these embodiments. Thus, in my view, it is improper to suggest that the blades of the embodiment depicted in Figures 15–20 and relied upon by Petitioner could instead be connected in the manner of the embodiment depicted in Figures 7–12. I note that such a connection would prevent the aft motion of the blades required for the blade locking tabs to snap onto the pivot-limiter. *See* Ex. 1003, 9:57–62.

I also disagree with the majority’s interpretation of Petitioner’s reference to “‘alternative’ pivot connections.” *See* Maj. Op. 9 (citing Pet. 39, 43). The “alternative[]” language referred to by Petitioner discusses using an interference-fit pin, cotter pin, or similar device in place of a set screw in the embodiment depicted in Figures 7–12. *See* Pet. 39, 43 (citing Ex. 1003, 7:33–39).

The majority also states that the deployed configuration of Vandewater’s blades satisfies claim 11 because the blades pivot as a unitary whole blade about pivot pin 316. Maj. Op. 12–13. I respectfully disagree. When in the deployed position, “the locking tab of each blade snaps over a respective side of pivot-limiter 317, thereby substantially locking the two blades in their deployed configuration to form a substantially unitary whole blade that moves with pivot-limiter 317” and, “[w]hen so locked, the two blades may pivot together about pivot pin 316 in the manner of a single blade.” Ex. 1003, 9:57–62. In this configuration, however, the blades are locked together and therefore do not a retracted position as recited in claim 11. *See* Ex. 1001, 6:20–24, 6:30–34.

Biasing Member

Independent claim 11 recites “at least one biasing member biasing the first and second blade members towards the extended positions.” Ex. 1001, 6:40–41. Petitioner maps Vandewater’s retaining mechanism, including biasing member 36, to the recited biasing member. Pet. 45–46. Petitioner also appears to map Vandewater’s pivot limiter 317 to the recited biasing element. *Id.* at 46 (reproducing and annotating Vandewater Figure 16).

Patent Owner argues that Vandewater discloses a biasing member as part of embodiments not relied upon by Petitioner and that such biasing member “is not related to deployment of the blades or biasing them to the extended position.” Prelim. Resp. 18 (citing Ex. 1003, 3:55–4:13). Rather, Patent Owner argues, the biasing member acts to keep a single blade member in a centered position. *Id.* (citing Ex. 1003, 4:3–13). Patent Owner notes that Petitioner maps element 317 in Figure 16 to the recited biasing member and argues that “[e]lement 317 is not a biasing member, . . . but instead a ‘pivot limiter’” that is “merely a structural element to lock the tabs of the blade members.” *Id.* at 18–19 (citing Ex. 1003, 10:3–5, 10:13–21).

I agree with Patent Owner. Vandewater discloses that “[a]rrowhead 310 may be substantially similar to arrowhead 210” and that arrowhead 210 may include a retaining member “such as a biasing element with a ball bearing or a spring wheel in accordance with retaining mechanisms disclosed herein.” Ex. 1003, 7:55–58, 8:47–49. Vandewater explains that,

[i]f a retaining mechanism is employed, first blade 212 and second blade 213 may each comprise a notched portion of a rear edge (not shown) to create a rear edge substantially similar to those described above when in the deployed position. The

retaining mechanism may retain the blades in their folded or aligned positions to provide a straighter flight, and/or the retaining mechanism may *retain the blades in a centered position when in their deployed position*.

Id. at 7:58–66 (emphasis added). Thus, Vandewater discloses the use of a retaining mechanism to maintain first and second blades 312, 313 in a centered position while deployed. However, Petitioner does not explain adequately how such a retaining mechanism biases the blades towards the extended position, as recited in claim 11.

I further agree that Petitioner does not explain adequately how Vandewater’s pivot-limiter 317 acts as a biasing member. *See* Pet. 46 (reproducing and annotating Vandewater Figure 16 to add a “Retaining Mechanism With Biasing Element” label to Vandewater’s pivot-limiter). Vandewater’s pivot-limiter retains the blades in the folded position (Ex. 1003, 10:36–40), locks the blades together to form a unitary blade (*id.* at 10:60–62), and limits the rotation of the unitary blade (*id.* at 18–21). In my view, Petitioner’s annotation of Vandewater Figure 16 does not explain adequately how the pivot-limiter acts as a biasing member as recited in claim 11.

CONCLUSION

For at least the foregoing reasons, in my view, Petitioner has failed to satisfy its burden to set forth a reasonable likelihood that it would prevail in establishing the unpatentability of the challenged claims of the ’177 patent. Therefore, I would deny institution.

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