UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BOWMAR ARCHERY LLC,
Petitioner,

v.

MATTHEW FUTTERE,
Patent Owner.

IPR2024-00401
Patent 8,043,177 B2

PETITIONER'S DEMONSTRATIVES

Bowmar, Ex. 1052
Bowmar v. Matthew Futtere
IPR2024-00401

GROUND 1 - Lint Anticipates

A. The meaning of the term "blade"

The ordinary and customary meaning of "blade" is "a tool or device with an edge." Ex.1046, ¶96; Ex.1047, ¶16,24. Patent Owner's interpretation of "blade" requiring "a cutting edge or sharp part" is overly restrictive because it improperly excludes blades commonly used in the industry that have "dull," blunt," and "unsharpened" edges. Ex.1046, ¶97-98; Ex.1047, ¶17-23. Notably, the words "cutting edge' and "sharp" do not appear anywhere in the claims, the specification, or prosecution history of the '177 patent.

Paper 19, Petitioner's Corrected Reply, p. 26
***See also* Paper 2, pg. 49**
Paper 1019, Kuhn Decl., ¶ 114

GROUND 1 - Lint Anticipates

94. Mr. Willkomm did not dispute in his Declaration that Lint discloses the claim's basic elements, such as a ferrule and a biasing member. In his declaration, he contends that Lint does disclose a "blade members" or that "the biasing member being the only element operable to hold the blade members in the extended position."

95. As detailed below, Mr. Willkomm's opinions are wrong. Also, as detailed below, his testimony during his deposition on November 19, 2024, contradicts his opinions in his declaration and demonstrates that Lint discloses all of the limitations of claims 1 and 11. I respond to Mr. Willkomm's incorrect opinions below, and identify his testimony during his deposition that confirms that Lint discloses all of the limitations of claims 1 and 11.

A. Interpretation of the term "blade"

96. In my opinion, the ordinary and customary meaning of "blade" is "a tool or device with an edge." I explained this during my deposition on September 6, 2024: "You asked me what a blade was, and I said that it's a -- it's part of a tool or a device, something to that effect, that generally has an edge." Ex. 1040, 87:15-17.

97. Mr. Willkomm states in his declaration that "the plain and ordinary meaning of blade member" requires it "to have a cutting edge or flat sharp part." I disagree with Mr. Willkomm because he provides a flawed interpretation of the term "blade" that is contrary to the claim language, specification, prosecution history, and

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A. Interpretation of the term "blade"

96. In my opinion, the ordinary and customary meaning of "blade" is "a tool or device with an edge." I explained this during my deposition on September 6, 2024: "You asked me what a blade was, and I said that it's a -- it's part of a tool or a device, something to that effect, that generally has an edge." Ex. 1040, 87:15-17.

Ex. 1046, Kuhn Decl., ¶ 96
***See also* Paper 19, p. 26**

15. I also understand that care must be taken in consulting the specification and prosecution history as the interpretative process should not import limitations from the specification into the defining language of the claims. It is also my understanding that, absent clear evidence to the contrary, claims should not be limited to specific embodiments of the invention set forth in the specification. It is my understanding that even when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction.

B. The Ordinary and Customary Meaning of "Blade"

16. I have reviewed the claims in the Flanagan patent. I have read the specification and the prosecution history file of the Flanagan patent. The claims recite a "first blade member" and a "second blade member." As explained below, a person of ordinary skill in the art knows that the ordinary and customary meaning of "blade" is a "device that has an edge." The term "blade" is not unique to the archery industry. The term "blade" does not have a specialized meaning in the archery industry. The specification of the Flanagan patent does not expressly define the term "blade" or "blade member."

17. I have read the Declaration of Wayne Willkomm relating to his opinion that the plain and ordinary meaning of "blade member" requires "a cutting edge or

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B. The Ordinary and Customary Meaning of "Blade"

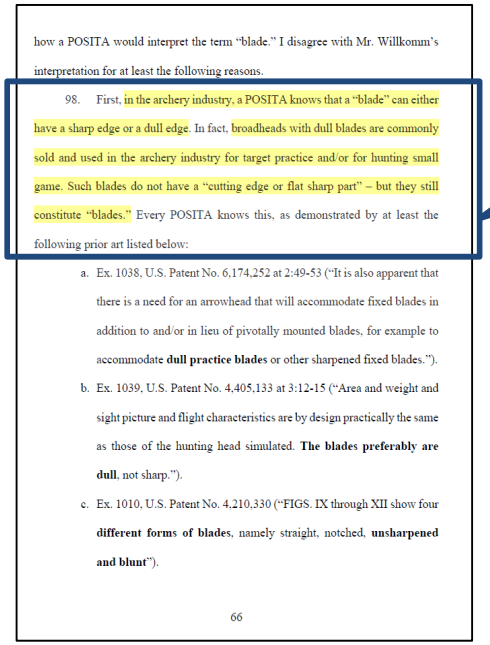
16. I have reviewed the claims in the Flanagan patent. I have read the specification and the prosecution history file of the Flanagan patent. The claims recite a "first blade member" and a "second blade member." As explained below, a person of ordinary skill in the art knows that the ordinary and customary meaning of "blade" is a "device that has an edge." The term "blade" is not unique to the archery industry. The term "blade" does not have a specialized meaning in the archery industry. The specification of the Flanagan patent does not expressly define the term "blade" or "blade member."

Ex. 1047, Mizek Decl., ¶ 16
***See also* Paper 19, p. 26**

GROUND 1 - Lint Anticipates

98. First, in the archery industry, a POSITA knows that a "blade" can either have a sharp edge or a dull edge. In fact, broadheads with dull blades are commonly sold and used in the archery industry for target practice and/or for hunting small game. Such blades do not have a "cutting edge or flat sharp part" – but they still constitute "blades." Every POSITA knows this, as demonstrated by at least the following prior art listed below:

Ex. 1046, Kuhn Decl., ¶ 98
***See also* Paper 19, p. 26**



how a POSITA would interpret the term "blade." I disagree with Mr. Willkomm's interpretation for at least the following reasons.

98. First, in the archery industry, a POSITA knows that a "blade" can either have a sharp edge or a dull edge. In fact, broadheads with dull blades are commonly sold and used in the archery industry for target practice and/or for hunting small game. Such blades do not have a "cutting edge or flat sharp part" – but they still constitute "blades." Every POSITA knows this, as demonstrated by at least the following prior art listed below:

a. Ex. 1038, U.S. Patent No. 6,174,252 at 2:49-53 ("It is also apparent that there is a need for an arrowhead that will accommodate fixed blades in addition to and/or in lieu of pivotally mounted blades, for example to accommodate **dull practice blades** or other sharpened fixed blades.").

b. Ex. 1039, U.S. Patent No. 4,405,133 at 3:12-15 ("Area and weight and sight picture and flight characteristics are by design practically the same as those of the hunting head simulated. **The blades preferably are dull**, not sharp.").

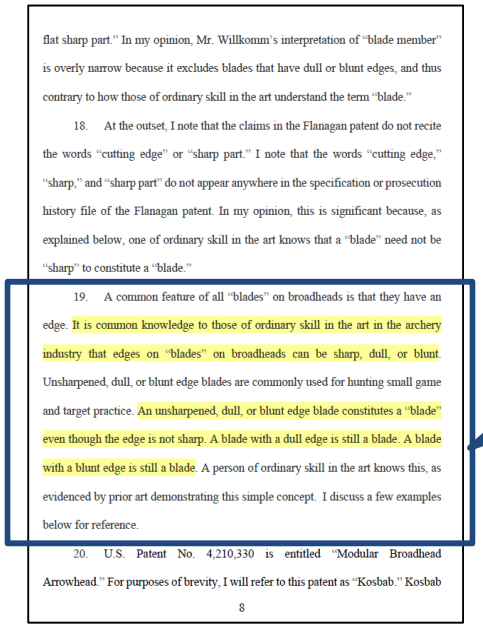
c. Ex. 1010, U.S. Patent No. 4,210,330 ("FIGS. IX through XII show four **different forms of blades**, namely straight, notched, **unsharpened and blunt**").

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GROUND 1 - Lint Anticipates

19. A common feature of all "blades" on broadheads is that they have an edge. It is common knowledge to those of ordinary skill in the art in the archery industry that edges on "blades" on broadheads can be sharp, dull, or blunt. Unsharpened, dull, or blunt edge blades are commonly used for hunting small game and target practice. An unsharpened, dull, or blunt edge blade constitutes a "blade" even though the edge is not sharp. A blade with a dull edge is still a blade. A blade with a blunt edge is still a blade. A person of ordinary skill in the art knows this, as evidenced by prior art demonstrating this simple concept. I discuss a few examples below for reference.

Ex. 1047, Mizek Decl., ¶ 19
***See also* Paper 19, p. 26**



flat sharp part." In my opinion, Mr. Willkomm's interpretation of "blade member" is overly narrow because it excludes blades that have dull or blunt edges, and thus contrary to how those of ordinary skill in the art understand the term "blade."

18. At the outset, I note that the claims in the Flanagan patent do not recite the words "cutting edge" or "sharp part." I note that the words "cutting edge," "sharp," and "sharp part" do not appear anywhere in the specification or prosecution history file of the Flanagan patent. In my opinion, this is significant because, as explained below, one of ordinary skill in the art knows that a "blade" need not be "sharp" to constitute a "blade."

19. A common feature of all "blades" on broadheads is that they have an edge. It is common knowledge to those of ordinary skill in the art in the archery industry that edges on "blades" on broadheads can be sharp, dull, or blunt. Unsharpened, dull, or blunt edge blades are commonly used for hunting small game and target practice. An unsharpened, dull, or blunt edge blade constitutes a "blade" even though the edge is not sharp. A blade with a dull edge is still a blade. A blade with a blunt edge is still a blade. A person of ordinary skill in the art knows this, as evidenced by prior art demonstrating this simple concept. I discuss a few examples below for reference.

20. U.S. Patent No. 4,210,330 is entitled "Modular Broadhead Arrowhead." For purposes of brevity, I will refer to this patent as "Kosbab." Kosbab

GROUND 1 - Lint Anticipates

"'a general usage dictionary cannot overcome art-specific evidence of the meaning' of a claim term". *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005)

Ex. 1038, U.S. Patent No. 6,174,252 at 2:49-53 ("It is also apparent that there is a need for an arrowhead that will accommodate fixed blades in addition to and/or in lieu of pivotally mounted blades, for example to accommodate **dull practice blades** or other sharpened fixed blades.").

Ex. 1039, U.S. Patent No. 4,405,133 at 3:12-15 ("Area and weight and sight picture and flight characteristics are by design practically the same as those of the hunting head simulated. **The blades preferably are dull**, not sharp.").

Ex. 1010, U.S. Patent No. 4,210,330 ("FIGS. IX through XII show four **different forms of blades**, namely straight, notched, **unsharpened and blunt**").

Paper 19, p. 26
Ex. 1019, ¶ 122-123
Ex. 1046, ¶ 66
Ex. 1047, ¶ 19-22

GROUND 1 - Lint Anticipates

22. U.S. Patent No. 6,174,252 is entitled "Arrowhead with Interchangeable Blades." I am the named inventor of this patent, which issued on January 16, 2001. My patent explains "there is a need for an arrowhead that will accommodate fixed blades in addition to and/or in lieu of pivotally mounted blades, for example to accommodate dull practice blades or other sharpened fixed blades. 2:49-53 My patent states the broadhead has "interchangeable blades wherein a dull blade or a sharpened blade can be interchanged with a pivotally mounted blade." Col. 2, Lines 57-59. The "blade 80 comprises leading edge 81" and "leading edge 81 is blunt and such blade 80 can be used as a target or practice blade." Col. 12, Lines 64-67. A person of ordinary skill knows that the "blunt" blades disclosed in my patent are still "blades" even though that do contain a sharp edge.

23. As noted above, I have reviewed the deposition testimony of Mr. Wayne Willkomm. Mr. Willkomm testified that he did not consider any such prior art when forming his opinion. His interpretation of the term "blade" is therefore incorrect and clearly does not account for the fact that the term "blade" is routinely and consistently used in the archery industry to refer to blades that have sharp edges, dull edges, and blunt edges. As previously, stated, a blade with a dull edge is still a blade. A blade with blunt edge is still a blade. Consequently and respectfully, in my opinion, Mr. Willkomm's interpretation of "blade" is uninformed and misguided.

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23. As noted above, I have reviewed the deposition testimony of Mr. Wayne Willkomm. Mr. Willkomm testified that he did not consider any such prior art when forming his opinion. His interpretation of the term "blade" is therefore incorrect and clearly does not account for the fact that the term "blade" is routinely and consistently used in the archery industry to refer to blades that have sharp edges, dull edges, and blunt edges. As previously, stated, a blade with a dull edge is still a blade. A blade with blunt edge is still a blade. Consequently and respectfully, in my opinion, Mr. Willkomm's interpretation of "blade" is uninformed and misguided.

Ex. 1047, Mizek Decl., ¶ 23
***See also* Paper 19, pp. 26-27**
Ex. 1034, 150:24-151:10

GROUND 1 - Lint Anticipates

99. Second, a POSITA knows that the edge of a blade does not need to be "sharp" in order to cut flesh. For example, prior to the filing date of the '177 patent, the Patent Owner, Matthew Futterre, confirmed what every POSITA knows, which is a "safe to handle edge" can achieve cutting of flesh with the addition of velocity and pressure. For example, in a video published by Mr. Futterre, he displays the words "Cut = Velocity + Pressure + Edge." Ex. 1041, starting at 00:38 minute mark (except below).

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100. At the 00:38-1:57 minute mark in the video, Mr. Futterre states that a "safe to handle edge" "can achieve capillary level cutting that is based on the laws of physics" and all you need "is an edge to do the cutting plus velocity plus pressure." He states that it is a "myth that you need scalpel sharp broadhead blades" to achieve cutting. He explains that "any compound bow today even recurves" will cause a broadhead to travel "well in excess of 125-130 miles an hour" and "that velocity coupled with the pressure of being forced through an animal takes this safe to handle

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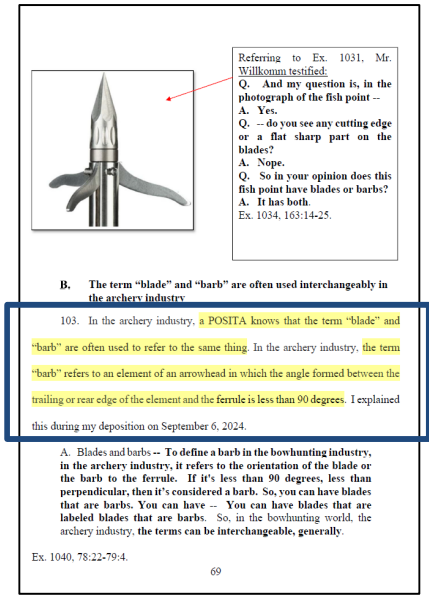
Ex. 1046, Kuhn Decl., ¶ 99
***See also* Paper 19, pp. 27-28**

GROUND 1 - Lint Anticipates



Ex. 1041, Video
See also Paper 19, pp. 27-28

GROUND 1 - Lint Anticipates



Referring to Ex. 1031, Mr. Willkomm testified:
Q. And my question is, in the photograph of the fish point --
A. Yes.
Q. -- do you see any cutting edge or a flat sharp part on the blades?
A. Nope.
Q. So in your opinion does this fish point have blades or barbs?
A. It has both.
Ex. 1034, 163:14-25.

B. The term "blade" and "barb" are often used interchangeably in the archery industry

103. In the archery industry, a POSITA knows that the term "blade" and "barb" are often used to refer to the same thing. In the archery industry, the term "barb" refers to an element of an arrowhead in which the angle formed between the trailing or rear edge of the element and the ferrule is less than 90 degrees. I explained this during my deposition on September 6, 2024.

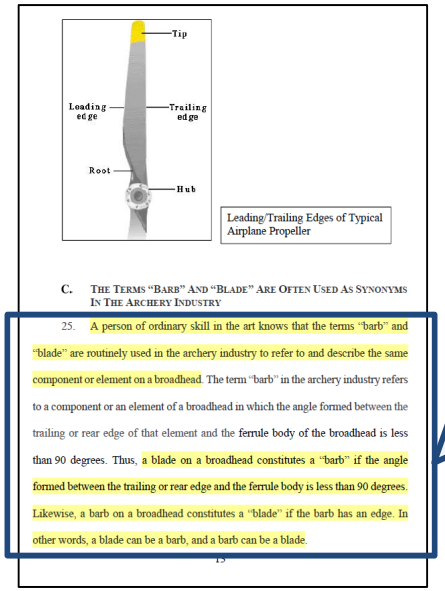
A. Blades and barbs -- **To define a barb in the bowhunting industry, in the archery industry, it refers to the orientation of the blade or the barb to the ferrule. If it's less than 90 degrees, less than perpendicular, then it's considered a barb. So, you can have blades that are barbs. You can have -- You can have blades that are labeled blades that are barbs.** So, in the bowhunting world, the archery industry, **the terms can be interchangeable, generally**.

Ex. 1040, 78:22-79:4.

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103. In the archery industry, a POSITA knows that the term "blade" and "barb" are often used to refer to the same thing. In the archery industry, the term "barb" refers to an element of an arrowhead in which the angle formed between the trailing or rear edge of the element and the ferrule is less than 90 degrees. I explained this during my deposition on September 6, 2024.

Ex. 1046, Kuhn Decl., ¶ 103
***See also* Paper 19, pp. 29-30**



Leading/Trailing Edges of Typical Airplane Propeller

C. THE TERMS "BARB" AND "BLADE" ARE OFTEN USED AS SYNONYMS IN THE ARCHERY INDUSTRY

25. A person of ordinary skill in the art knows that the terms "barb" and "blade" are routinely used in the archery industry to refer to and describe the same component or element on a broadhead. The term "barb" in the archery industry refers to a component or an element of a broadhead in which the angle formed between the trailing or rear edge of that element and the ferrule body of the broadhead is less than 90 degrees. Thus, a blade on a broadhead constitutes a "barb" if the angle formed between the trailing or rear edge and the ferrule body is less than 90 degrees. Likewise, a barb on a broadhead constitutes a "blade" if the barb has an edge. In other words, a blade can be a barb, and a barb can be a blade.

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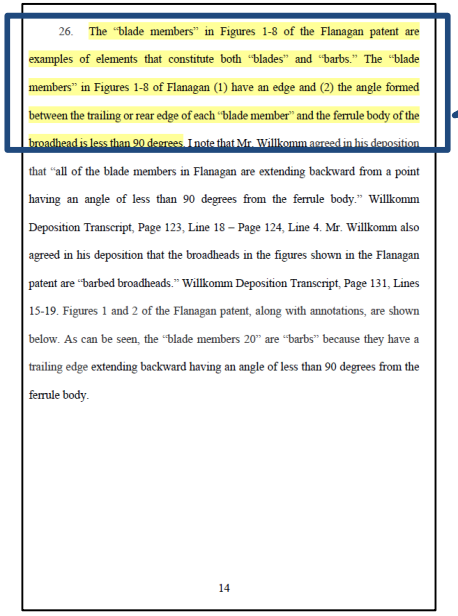
25. A person of ordinary skill in the art knows that the terms "barb" and "blade" are routinely used in the archery industry to refer to and describe the same component or element on a broadhead. The term "barb" in the archery industry refers to a component or an element of a broadhead in which the angle formed between the trailing or rear edge of that element and the ferrule body of the broadhead is less than 90 degrees. Thus, a blade on a broadhead constitutes a "barb" if the angle formed between the trailing or rear edge and the ferrule body is less than 90 degrees. Likewise, a barb on a broadhead constitutes a "blade" if the barb has an edge. In other words, a blade can be a barb, and a barb can be a blade.

Ex. 1047, Mizek Decl., ¶ 25
***See also* Paper 19, pp. 29-30**

GROUND 1 - Lint Anticipates

26. The "blade members" in Figures 1-8 of the Flanagan patent are examples of elements that constitute both "blades" and "barbs." The "blade members" in Figures 1-8 of Flanagan (1) have an edge and (2) the angle formed between the trailing or rear edge of each "blade member" and the ferrule body of the broadhead is less than 90 degrees. I note that Mr. Willkomm agreed in his deposition

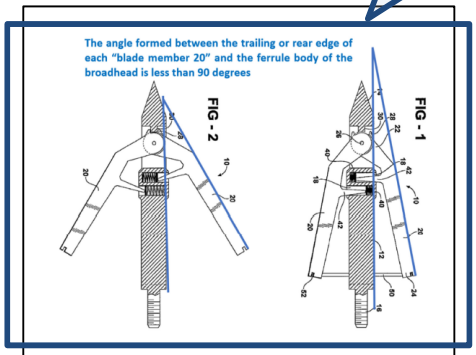
Ex. 1047, Mizek Decl., ¶ 26
***See also* Paper 19, pp. 29-30**



26. The "blade members" in Figures 1-8 of the Flanagan patent are examples of elements that constitute both "blades" and "barbs." The "blade members" in Figures 1-8 of Flanagan (1) have an edge and (2) the angle formed between the trailing or rear edge of each "blade member" and the ferrule body of the broadhead is less than 90 degrees. I note that Mr. Willkomm agreed in his deposition that "all of the blade members in Flanagan are extending backward from a point having an angle of less than 90 degrees from the ferrule body." Willkomm Deposition Transcript, Page 123, Line 18 – Page 124, Line 4. Mr. Willkomm also agreed in his deposition that the broadheads in the figures shown in the Flanagan patent are "barbed broadheads." Willkomm Deposition Transcript, Page 131, Lines 15-19. Figures 1 and 2 of the Flanagan patent, along with annotations, are shown below. As can be seen, the "blade members 20" are "barbs" because they have a trailing edge extending backward having an angle of less than 90 degrees from the ferrule body.

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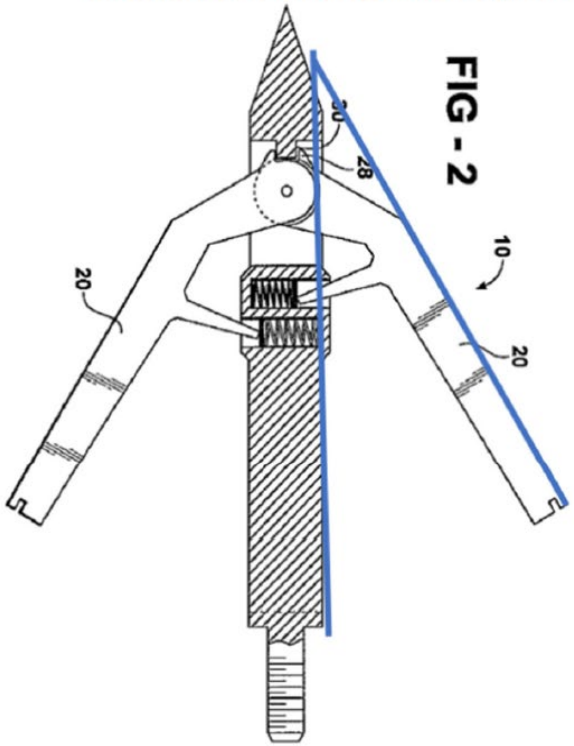
GROUND 1 - Lint Anticipates

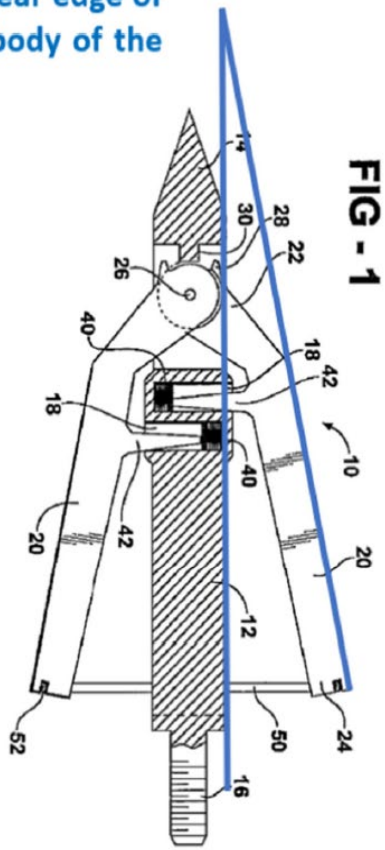


27. Another example of a broadhead that contains both a "blade" and a "barb" is U.S. Patent No. 3,168,313. For purposes of brevity, I will refer to this patent as the Lint patent. The broadhead disclosed in the Lint patent contains two "barbs 19." Each "barb 19" constitutes a blade because it is a device with an edge. The edge(s) of the broadhead in Lint is clearly shown in Figure 1. Each "barb 19" also constitutes a "barb" because the angle formed between the trailing or rear edge

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The angle formed between the trailing or rear edge of each "blade member 20" and the ferrule body of the broadhead is less than 90 degrees





Ex. 1047, Mizek Decl., pg. 15
***See also* Paper 19, pp. 29-30**

GROUND 1 - Lint Anticipates

Q. Yes. **In paragraph 77 of your declaration you state that the plain and ordinary meaning of the term "barb" is a projection extending backward from a point, having an angle of less than 90 degrees from the body.**
A. Uh-huh.
Q. Do you disagree with that?
A. No.

Ex. 1034, 133:23-134:4.

Q. Well, why don't we do this. We reviewed Figures 1 through 8 already. Why don't you take just a couple of minutes and review Figures 1 through 8 and then I'll march through some of my questions, and if we need to go back to a specific figure we can do that.
A. Okay. Okay.
Q. Okay. **So all of the blade members in Flanagan are extending backward from a point having an angle of less than 90 degrees from the ferrule body; correct?**
A. Yes.

Ex. 1034, 123:18-124:4.

Ex. 1034, Willkomm Transcript
***See also* Paper 19, pp. 29-30**

GROUND 1 - Lint Anticipates

2013 North Dakota Game and Fish. The Idaho Administrative Code bans the use of "arrows or bolts having barbed broadheads" on "big game animals" and defines a barbed broadhead as "a broadhead which has any portion of the rear edge of the broadhead forming an angle less than ninety (90) degrees with the shaft or ferrule."

Ex. 2012. Barbed broadheads have been disfavored in the hunting of big game for

Ex. 2008, Willkomm Decl., ¶ 35
***See also* Paper 19, pp. 29-30**

Q. So under the Idaho definition of barbed broadheads, all of the broadheads in **Figures 1 through 8 of Flanagan are barbed broadheads; correct?**
A. They meet the requirements.

Ex. 1034, 131:15-19.

Ex. 1034, Willkomm Transcript
***See also* Paper 19, pp. 29-30**

GROUND 1 - Lint Anticipates



Ex. 1031

Referring to Ex. 1031, Mr. Willkomm testified:

Q. And my question is, in the photograph of the fish point --

A. Yes.

Q. -- do you see any cutting edge or a flat sharp part on the blades?

A. Nope.

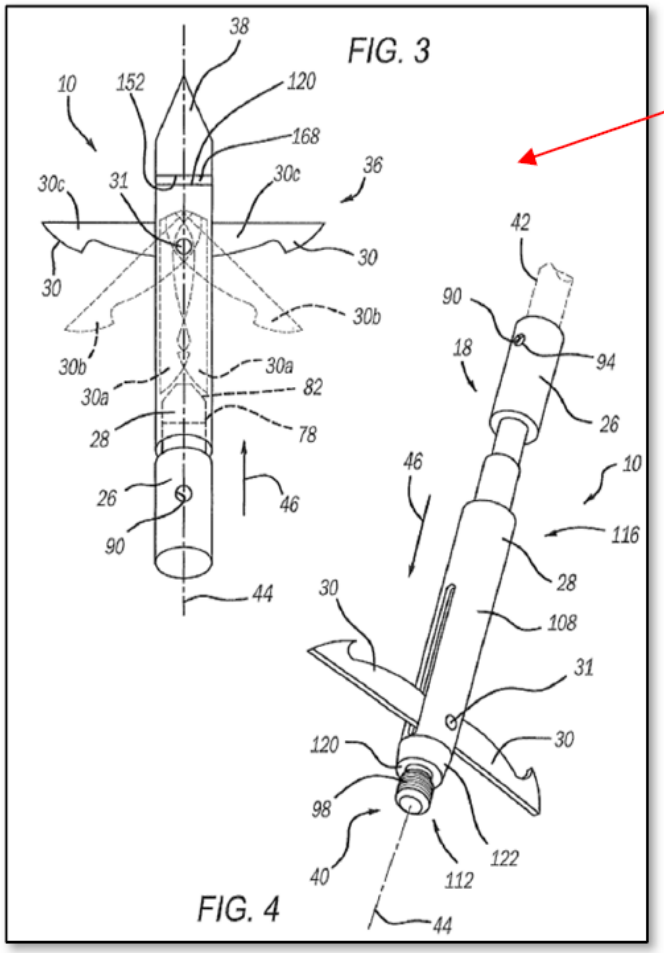
Q. So in your opinion does this fish point have blades or barbs?

A. It has both.

Ex. 1034, 163:14-25.

Ex. 1034, Willkomm Transcript
***See also* Paper 19, pp. 29-30**

GROUND 1 - Lint Anticipates



Ex. 1030

Referring to Ex. 1030, Mr. Willkomm testified:

Q. So in your opinion are the elements labeled 30 blades or barbs?

A. Let's see. I'll go back up the other way now.

(Witness peruses document.)

Q. Are you still looking?

A. Yes. I'm looking through. There's 14 figures there, sir.

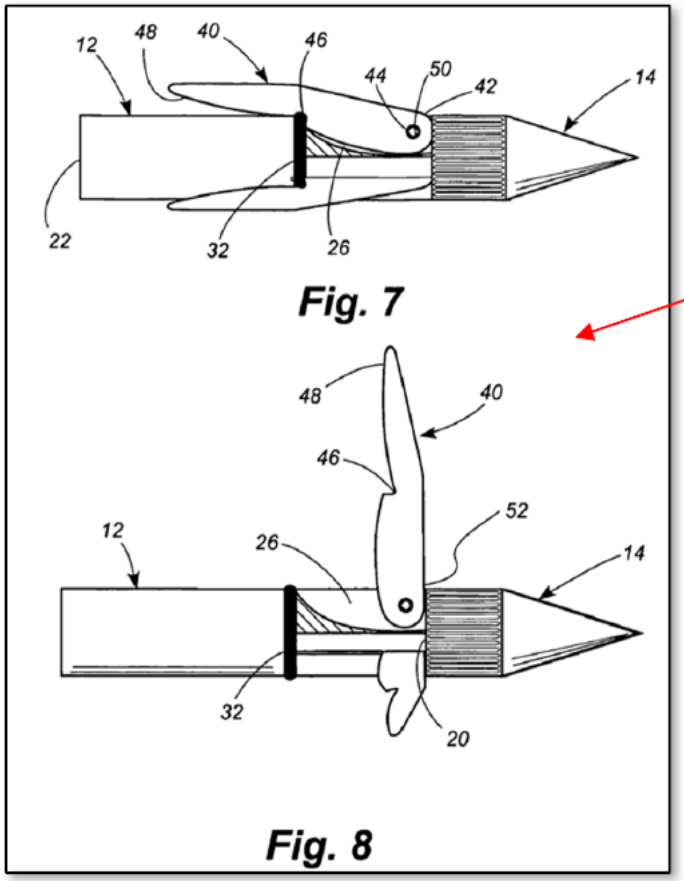
(Witness peruses document.)

A. Okay. Has characteristics of a barb and some characteristic of blade, but no sharp cutting edge.

Ex. 1034, 160:2-12.

Ex. 1034, Willkomm Transcript
***See also* Paper 19, pp. 29-30**

GROUND 1 - Lint Anticipates



Ex. 1029

Referring to Ex. 1029, Mr. Willkomm testified:

Referring to Ex. 1029:

Q. So in your opinion are the elements labeled 40 blades or barbs?

A. They don't appear to have a cutting edge. So they're another cross, it's between a blade and a barb.

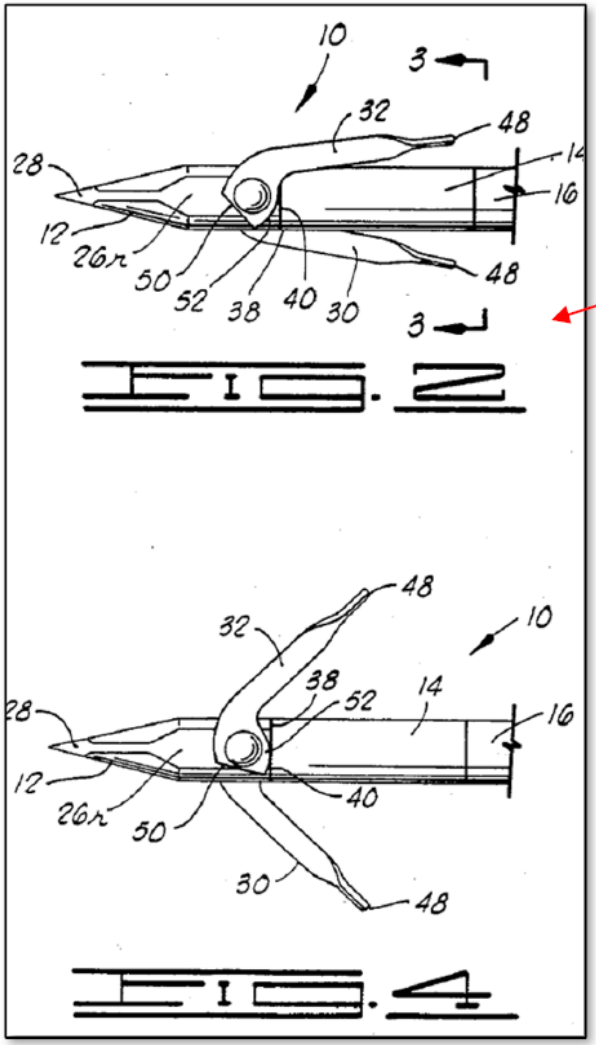
Q. So in your opinion the elements labeled 40 are both blades and barbs; correct?

A. It has elements of both but maybe neither.

Ex. 1034, 158:15-22.

Ex. 1034, Willkomm Transcript
***See also* Paper 19, pp. 29-30**

GROUND 1 - Lint Anticipates



Ex. 1028

Referring to Ex. 1028, Mr. Willkomm testified:

Q. So in your opinion the elements labeled 30 and 32 would be both blades and barbs; correct?

A. They define them as blades. They have characteristics of both.

Ex. 1034, 156:21-24.

Ex. 1034, Willkomm Transcript
***See also* Paper 19, pp. 29-30**

GROUND 1 - Lint Anticipates

"'a general usage dictionary cannot overcome art-specific evidence of the meaning' of a claim term". *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005)

Ex. 1028, U.S. Patent No. 4,819,360 at 1:17-20 ("arrowheads are primarily concerned with the adjustable presentment of **barbs or blades** which prevent escape of the fish or other prey after piercing of the flesh.").

Ex. 1029, U.S. Patent No. 7,485,056 at 1:21-23 ("Arrowheads are known in which **blades or barbs** are folded against the body while the arrow is in flight and then open on or after impact with the target.").

Ex. 1048, U.S. Patent No. 3,022,077 at 2:1-2 ("**the blades constitute barb elements** for inflicting wide and deadly wounds in the game.") (underlining added).

Ex. 1042, U.S. Patent No. 2,909,372 at 2:3-5 ("The member 5 is formed from sheet metal and is substantially triangular in form with **cutting blades or barbs 7 and 8**").

Paper 19, p. 29-30
Ex. 1046, ¶ 70-71

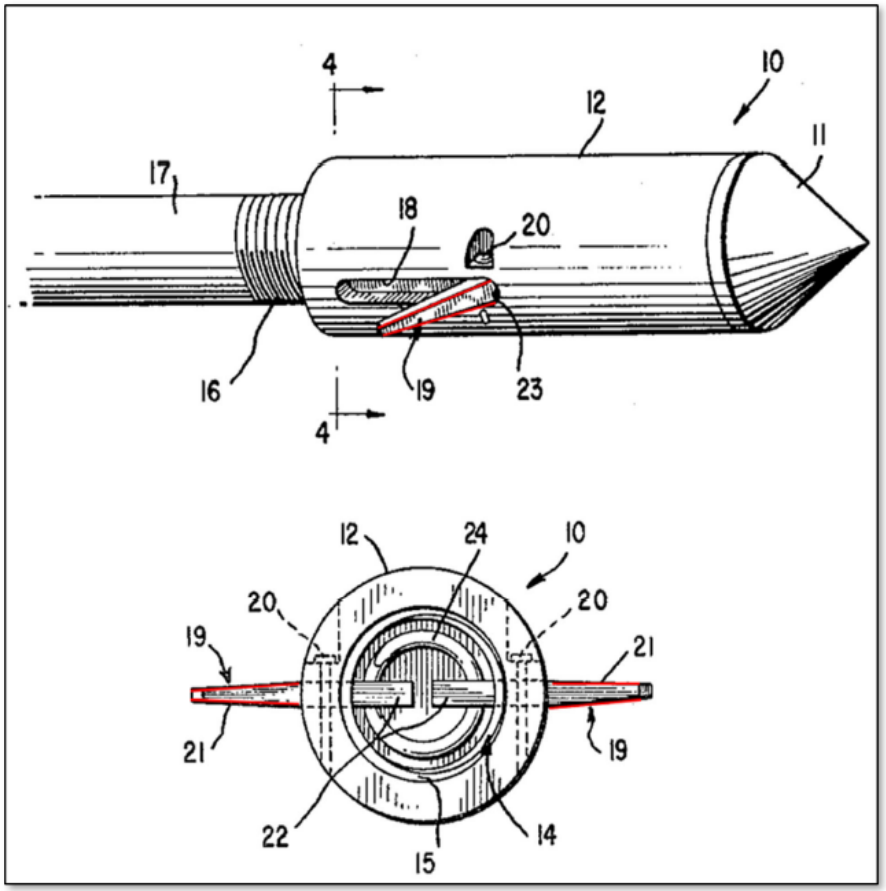
Ex. 1043, U.S. Patent No. 7,314,419 at 4:62-65 ("**additional blades or smaller projections or barbs 121** can be added to enhance the immobilization of the arrowhead 120.").

Ex. 1044, U.S. Patent No. 2,373,216 at 3:20-22 ("The rear edges of the **blades 13 may be pointed at 15 to provide barbs**, if it is so desired") and at 3:49, 4:2, 4:15 and 5:4 (**using "barb" and "blade" interchangeably** throughout when referring to "blade 22" and "barb 22").

Ex. 1045, U.S. Patent No. 2,816,766 at 1:62-64 ("**blade element** of the composite arrowhead which is unusually elongated and sharp-pointed and **has wing-like barbs**").

GROUND 1 - Lint Anticipates

109. Figures 1 and 4 from Lint are reproduced below and annotated to identify the edges (outlined in red) on each of the "barbs 19."

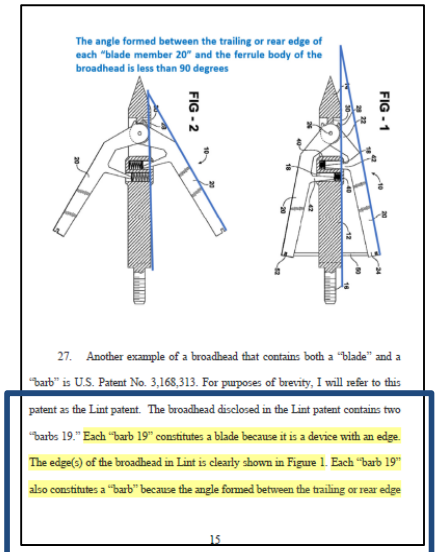


110. Lint refers to the blade members as "barbs" because the angles formed between the trailing or rear edge of the blade members and the ferrule is less than 90 degrees. A POSITA knows that just because Lint's use of the word "barb" does not change the fact each "barb 19" in Lint is a "blade" – i.e., a tool or device that has an edge. As discussed above, a POSITA knows that the terms "barb" and "blade" are

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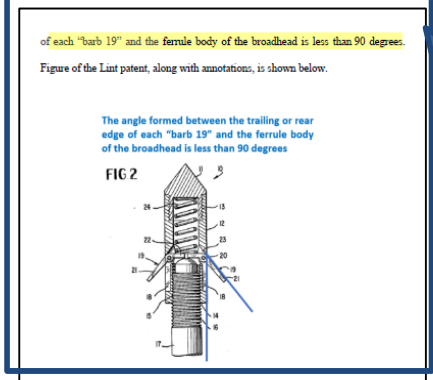
Ex. 1046, Kuhn Decl., ¶ 109
***See also* Paper 19, p. 31**

GROUND 1 - Lint Anticipates



27. Another example of a broadhead that contains both a "blade" and a "barb" is U.S. Patent No. 3,168,313. For purposes of brevity, I will refer to this patent as the Lint patent. The broadhead disclosed in the Lint patent contains two "barbs 19." Each "barb 19" constitutes a blade because it is a device with an edge. The edge(s) of the broadhead in Lint is clearly shown in Figure 1. Each "barb 19" also constitutes a "barb" because the angle formed between the trailing or rear edge

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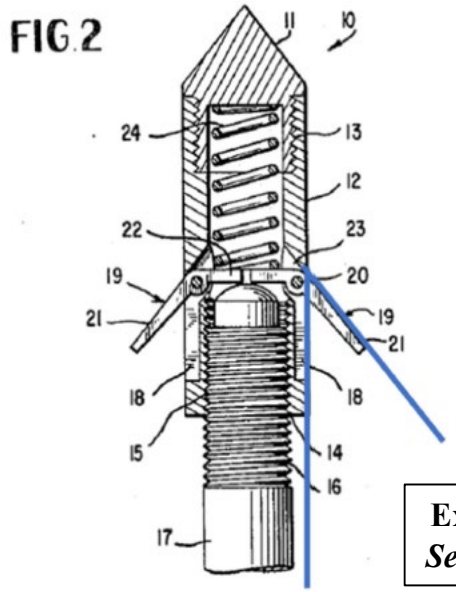


28. I note that during his deposition Mr. Willkomm was shown a well-known bowfishing broadhead sold by Feradyne under the brand "Muzzy." Feradyne and its Muzzy brand of products are well-known and reputable in the archery industry. Mr. Willkomm testified that the Muzzy broadhead (shown in Exhibit 1031) contains both "barbs" and "blades." Willkomm Deposition Transcript, Page 163, Lines 14-25. His testimony demonstrates what one of ordinary skill in the art knows,

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patent as the Lint patent. The broadhead disclosed in the Lint patent contains two "barbs 19." Each "barb 19" constitutes a blade because it is a device with an edge. The edge(s) of the broadhead in Lint is clearly shown in Figure 1. Each "barb 19" also constitutes a "barb" because the angle formed between the trailing or rear edge of each "barb 19" and the ferrule body of the broadhead is less than 90 degrees. Figure of the Lint patent, along with annotations, is shown below.

The angle formed between the trailing or rear edge of each "barb 19" and the ferrule body of the broadhead is less than 90 degrees



Ex. 1047, Mizek Decl., ¶ 27
***See also* Paper 19, pp. 30-31**

GROUND 1 - Lint Anticipates

often used to describe the same element of component of a broadhead, and Mr. Willkomm's deposition testimony, discussed above, confirms this.

111. A POSITA knows each "barb 19" of Lint constitutes a "blade" even though Lint does expressly describe each "barb 19" as being "sharp." As discussed above, the ordinary and customary meaning of "blade" does not require a sharp edge.

E. Each "barb 19" in Lint meets Mr. Willkomm's definition of "blade"

112. Even assuming arguendo that Mr. Willkomm's definition of "blade" is correct, the "barbs" in Lint satisfy Mr. Willkomm's definition because they have both "cutting edge" and a "flat sharp part." The "cutting edge" and "flat sharp part" are shown in the annotated Figures 1 and 4 above.

113. A POSITA knows that the outer edge on each "barb 19" in Lint can cut flesh. As discussed above, a POSITA knows that all that is needed for such an edge to achieve cutting of flesh is velocity and pressure. Mr. Futterre acknowledged this well-known principle in his public statements, as discussed above. Exs. 1041, 1050.

During my deposition, I explained:

Q. You're referencing Roman numeral 19 that is referred to as a barb by Lint; is that accurate?
A. I'm referring to the edge that's obvious in that drawing.
Q. And you're stating that is a cutting edge?
A. I am stating it's a cutting edge.
Q. And you're stating that that is deployed while in the flesh of the animal while the arrow is moving?
A. **That is deployed in the animal as the broadhead is moving through and it has an edge. You asked me what a blade was, and**

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112. Even assuming arguendo that Mr. Willkomm's definition of "blade" is correct, the "barbs" in Lint satisfy Mr. Willkomm's definition because they have both "cutting edge" and a "flat sharp part." The "cutting edge" and "flat sharp part" are shown in the annotated Figures 1 and 4 above.

113. A POSITA knows that the outer edge on each "barb 19" in Lint can cut flesh. As discussed above, a POSITA knows that all that is needed for such an edge to achieve cutting of flesh is velocity and pressure. Mr. Futterre acknowledged this well-known principle in his public statements, as discussed above. Exs. 1041, 1050.

Ex. 1046, Kuhn Decl., ¶¶ 112, 113
***See also* Paper 19, p. 31**

GROUND 1 - Lint Anticipates

Q. Okay. And it's the spring of the Lint broadhead that causes the outer barbs to move forward or extend; correct?
A. Yes.
Ex. 1034, 48:25-49:3

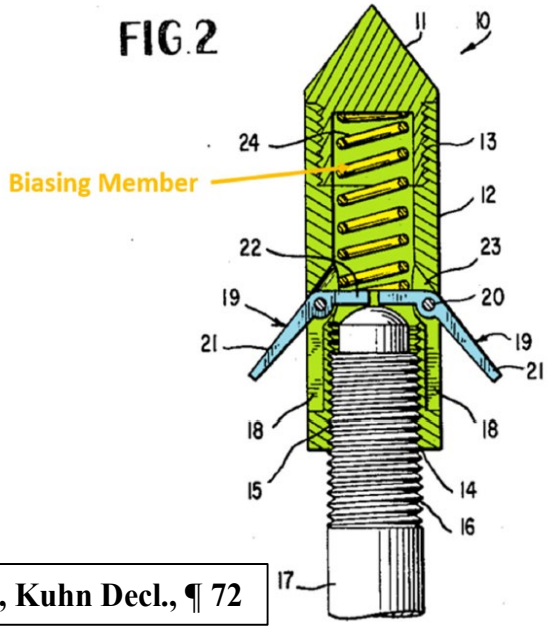
So in your opinion the phrase "the biasing member being the only element operable to hold the blade member in the extended position" means that the biasing member is the only element operable to exert a force on the blade member in the extended position; correct?
A. Yes.
Q. In your own words.
A. Yes. In my own words I followed the prior statement, "at least one biasing member biasing the first and second blade members towards the extended positions," and that the biasing member being the only element operable to hold them in that extended position, sir.
Q. Yeah.
A. Context is very important in that sentence.
Q. Sure. And my previous question was, what does "operable to hold" mean? And your answer was that means to exert a force. Correct?
A. That is correct. That is correct.
Ex. 1034, 91:14-92:8.

Ex. 1034, Willkomm Transcript
***See also* Paper 19, pp. 32-33**

GROUND 1 - Lint Anticipates

Q. Okay. **So Lint at column 2, lines 59 through 64, states**: "In the operation of the arrowhead 10, when the shaft 17 is retracted away from the inner barb portions 22 of the barbs 19, **the spring 24 acts to hold the barbs 19 in the open position of** the Figure 2. Under these circumstances, the arrowhead is in condition for hunting live game ...."
Did I read that correctly?
A. Yes, you have read that correctly.
Q. And do you agree with that?
A. Yes, it is in condition to hunt live game.
Ex. 1034, 58:3-15.

Ex. 1034, Willkomm Transcript
***See also* Paper 19, pp. 32-33**



Ex. 1019, Kuhn Decl., ¶ 72

GROUND 1 - Lint Anticipates

Q. Sure. **There's nothing in the claim language in claim 1 that dictates when the blade members must move from a retracted position to an extended position.**

A. There's no timing element noted. Just that it has to be when the positions are in certain ways.

Q. And likewise, **there's no timing element in claim 1 that dictates when the blades must move from an extended position to a retracted position.**

A. You're asking of a timing element, sir?

Q. Well, your answer said there is no timing element in claim 1.

A. **Yes, that is correct. There is no timing element that I observed. Only definition of the position -- different positions.**

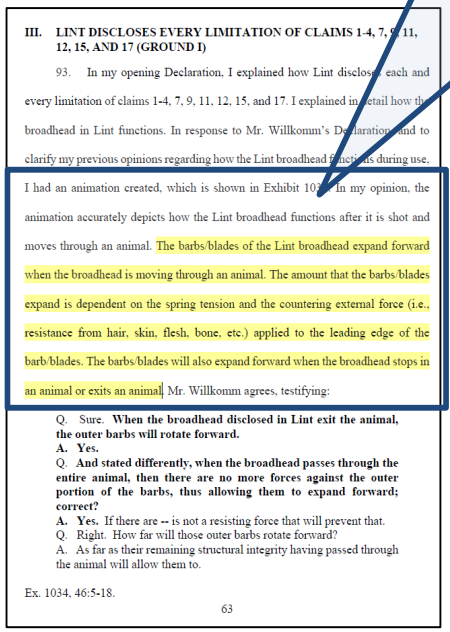
Ex. 1034, 81:2-17.

Ex. 1034, Willkomm Transcript
***See also* Paper 19, p. 6**

GROUND 1 - Lint Anticipates

I had an animation created, which is shown in Exhibit 1037. In my opinion, the animation accurately depicts how the Lint broadhead functions after it is shot and moves through an animal. The barbs/blades of the Lint broadhead expand forward when the broadhead is moving through an animal. The amount that the barbs/blades expand is dependent on the spring tension and the countering external force (i.e., resistance from hair, skin, flesh, bone, etc.) applied to the leading edge of the barb/blades. The barbs/blades will also expand forward when the broadhead stops in an animal or exits an animal. Mr. Willkomm agrees, testifying:

Ex. 1046, Kuhn Decl., ¶ 93
***See also* Paper 19, p. 32**



III. LINT DISCLOSES EVERY LIMITATION OF CLAIMS 1-4, 7, 9, 11, 12, 15, AND 17 (GROUND I)

93. In my opening Declaration, I explained how Lint discloses each and every limitation of claims 1-4, 7, 9, 11, 12, 15, and 17. I explained in detail how the broadhead in Lint functions. In response to Mr. Willkomm's Declaration and to clarify my previous opinions regarding how the Lint broadhead functions during use, I had an animation created, which is shown in Exhibit 1037. In my opinion, the animation accurately depicts how the Lint broadhead functions after it is shot and moves through an animal. The barbs/blades of the Lint broadhead expand forward when the broadhead is moving through an animal. The amount that the barbs/blades expand is dependent on the spring tension and the countering external force (i.e., resistance from hair, skin, flesh, bone, etc.) applied to the leading edge of the barb/blades. The barbs/blades will also expand forward when the broadhead stops in an animal or exits an animal. Mr. Willkomm agrees, testifying:

Q. Sure. **When the broadhead disclosed in Lint exit the animal, the outer barbs will rotate forward.**
A. Yes.
Q. **And stated differently, when the broadhead passes through the entire animal, then there are no more forces against the outer portion of the barbs, thus allowing them to expand forward; correct?**
A. Yes. If there are -- is not a resisting force that will prevent that.
Q. Right. How far will those outer barbs rotate forward?
A. As far as their remaining structural integrity having passed through the animal will allow them to.

Ex. 1034, 46:5-18.

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GROUND 1 - Lint Anticipates

Q. Sure. When the broadhead disclosed in Lint exit the animal, the outer barbs will rotate forward.
A. Yes.
Q. And stated differently, when the broadhead passes through the entire animal, then there are no more forces against the outer portion of the barbs, thus allowing them to expand forward; correct?
A. Yes. If there are -- is not a resisting force that will prevent that.
Ex. 1034, 46:5-13

Q. So if the broadhead passes completely through the animal, the barbs will expand completely forward; correct?
A. They will expand to the extent forward that they can, given their retained structural integrity and function in the medium on the off side. For example, if it's fish, they will still have the resistance through the water on the back side, which may keep them, along with the change in structural integrity, from fully expanding. But they will expand toward that direction as best they can.
Q. Well, that would depend on the spring tension; correct? If the spring tension was set at a certain rate
A. That is correct. That is –
Q. -- fully expand.
A. That is correct, sir.
Q. Okay. And it's the spring of the Lint broadhead that causes the outer barbs to move forward or extend; correct?
A. Yes.
Ex. 1034, 48:7-49:3.

Ex. 1034, Willkomm Transcript
***See also* Paper 19, pp. 32-33**

GROUND 1 - Lint Anticipates

Q. Yeah, let me – let me say it a little bit different. So when the broadhead of Lint gets embedded in an animal, depending on the density of the flesh of the animal, the outer barbs will expand at least some amount.

A. All the inner layers from the -- whether it's hair, skin, flesh, bone, that is true. But there will be different amounts because of all those different layers having different resistances.

Q. So depending on the different resistances, the barbs could expand slightly differently.

A. Very small amount or a larger amount, but not fully if they're -- because there'll be too much resistance in most cases.

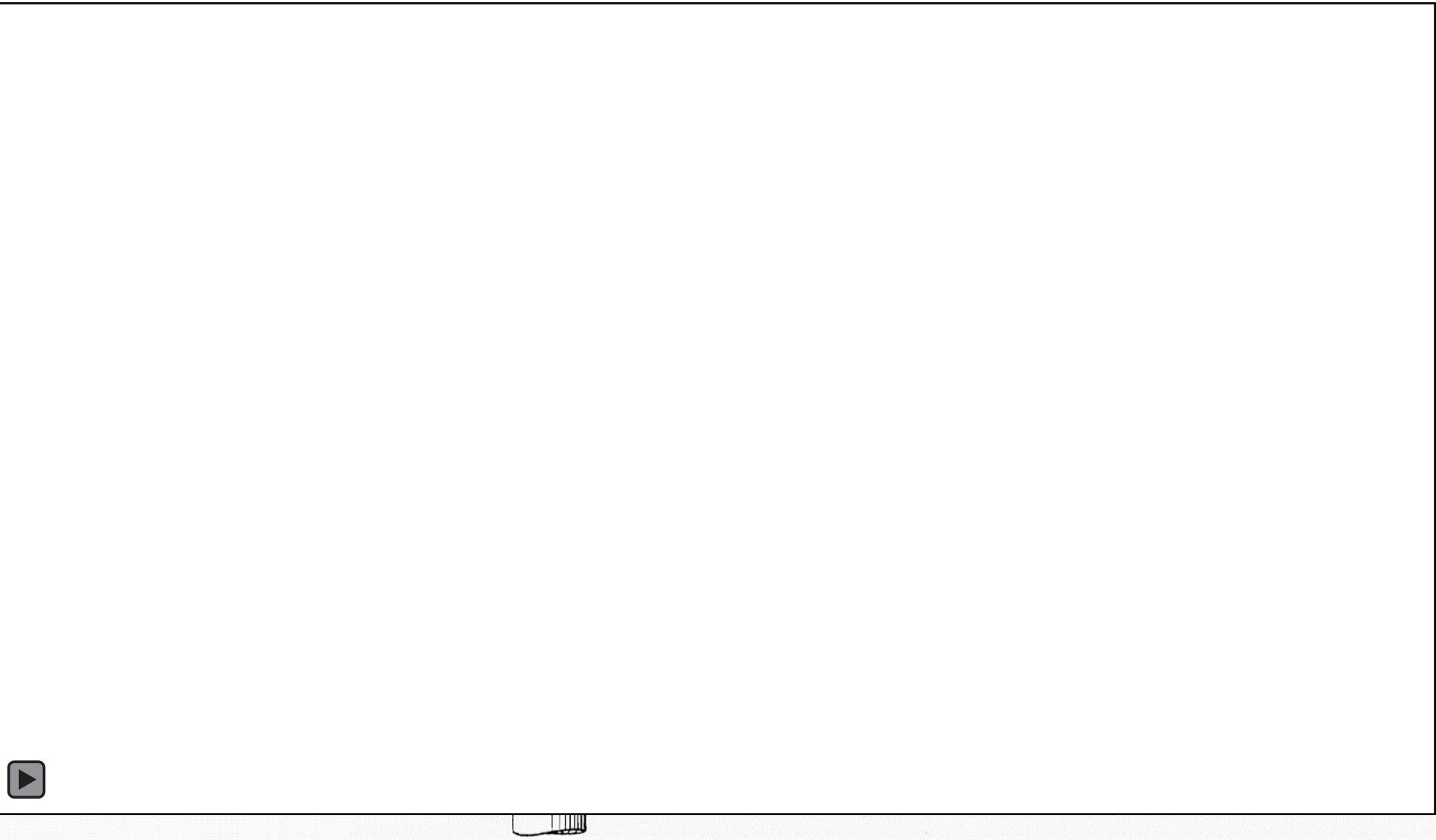
Q. Under what circumstances will the barbs expand forward when the broadhead is embedded in an animal?

A. I related one in terms of using the example of a white-tail deer, and most other mammal quarry, if they're shot in the abdominal cavity there is a small gap of air in the very top that would not offer resistance. If the blades -- both -- if a blade, either of the blades, are in that void area or air -- dead-air area, they will go as far forward as they can given their remaining structural integrity, having passed through the portion of the animal to get to that point.

Ex. 1034, 47:3-48:6.

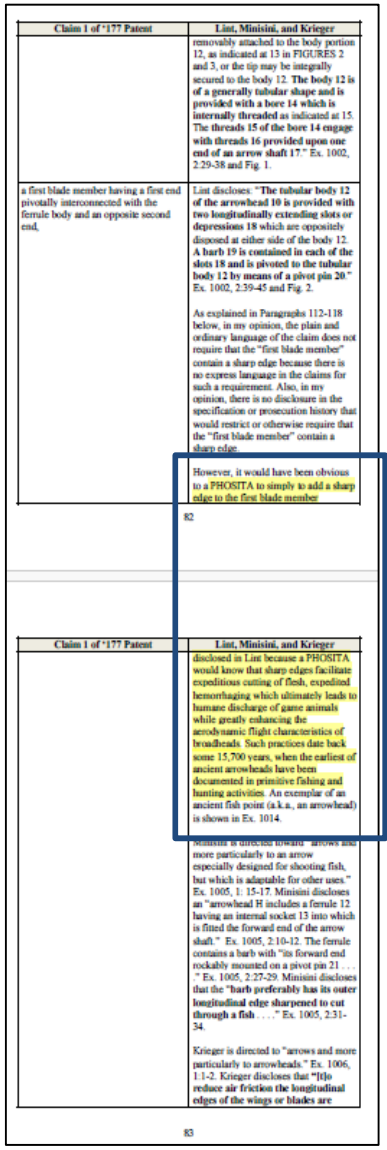
Ex. 1034, Willkomm Transcript
***See also* Paper 19, pp. 32-33**

GROUND 1 - Lint Anticipates



Ex. 1037, Video
See also Paper 19, pp. 32-33

GROUND 3 - Obvious to Add Sharp Edge to Lint



Claim 1 of '177 Patent	Lint, Minisini, and Krieger
	removably attached to the body portion 12, as indicated at 13 in FIGURES 2 and 3, or the tip may be integrally secured to the body 12. **The body 12 is of a generally tubular shape and is provided with a bore 14 which is internally threaded** as indicated at 15. **The threads 15 of the bore 14 engage with threads 16 provided upon one end of an arrow shaft 17.**" Ex. 1002, 2:29-38 and Fig. 1.
a first blade member having a first end pivotally interconnected with the ferrule body and an opposite second end,	Lint discloses: "**The tubular body 12 of the arrowhead 10 is provided with two longitudinally extending slots or depressions 18** which are oppositely disposed at either side of the body 12. **A barb 19 is contained in each of the slots 18 and is pivoted to the tubular body 12 by means of a pivot pin 20.**" Ex. 1002, 2:39-45 and Fig. 2. As explained in Paragraphs 112-118 below, in my opinion, the plain and ordinary language of the claim does not require that the "first blade member" contain a sharp edge because there is no express language in the claims for such a requirement. Also, in my opinion, there is no disclosure in the specification or prosecution history that would restrict or otherwise require that the "first blade member" contain a sharp edge. However, it would have been obvious to a PHOSITA to simply to add a sharp edge to the first blade member

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Claim 1 of '177 Patent	Lint, Minisini, and Krieger
	disclosed in Lint because a PHOSITA would know that sharp edges facilitate expeditious cutting of flesh, expedited hemorrhaging which ultimately leads to humane discharge of game animals while greatly enhancing the aerodynamic flight characteristics of broadheads. Such practices date back some 15,700 years, when the earliest of ancient arrowheads have been documented in primitive fishing and hunting activities. An exemplar of an ancient fish point (a.k.a., an arrowhead) is shown in Ex. 1014. Minisini is directed towards "arrows and more particularly to an arrow especially designed for shooting fish, but which is adaptable for other uses." Ex. 1005, 1: 15-17. Minisini discloses an "arrowhead H includes a ferrule 12 having an internal socket 13 into which is fitted the forward end of the arrow shaft." Ex. 1005, 2:10-12. The ferrule contains a barb with "its forward end rockably mounted on a pivot pin 21 . . ." Ex. 1005, 2:27-29. Minisini discloses that the "**barb preferably has its outer longitudinal edge sharpened to cut through a fish** . . . ." Ex. 1005, 2:31-34. Krieger is directed to "arrows and more particularly to arrowheads." Ex. 1006, 1:1-2. Krieger discloses that "**[t]o reduce air friction the longitudinal edges of the wings or blades are**

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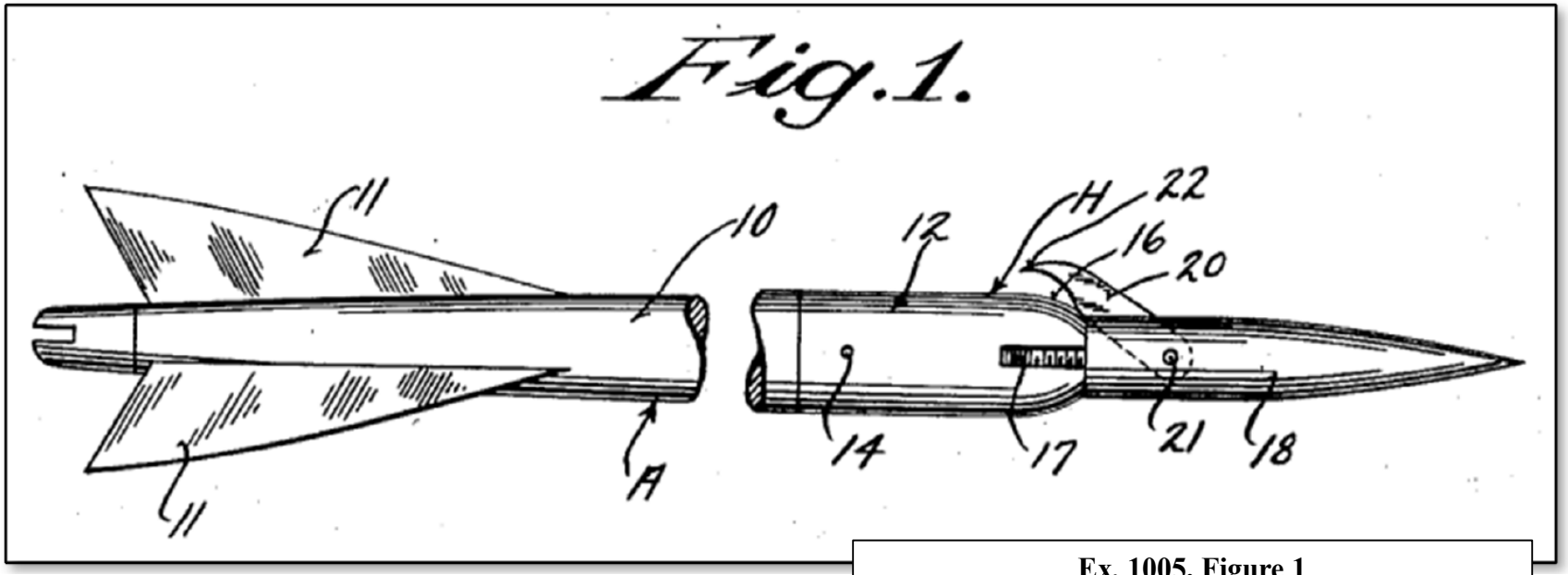
However, it would have been obvious to a PHOSITA to simply to add a sharp edge to the first blade member disclosed in Lint because a PHOSITA would know that sharp edges facilitate expeditious cutting of flesh, expedited hemorrhaging which ultimately leads to humane discharge of game animals while greatly enhancing the aerodynamic flight characteristics of broadheads. Such practices date back some 15,700 years, when the earliest of ancient arrowheads have been documented in primitive fishing and hunting activities. An exemplar of an ancient fish point (a.k.a., an arrowhead) is shown in Ex. 1014.

Ex. 1019, Kuhn Decl., pp. 82-83
***See also* Paper 2, pp. 49-52**
Paper 19, pp. 33-35

GROUND 3 - Obvious to Add Sharp Edge to Lint

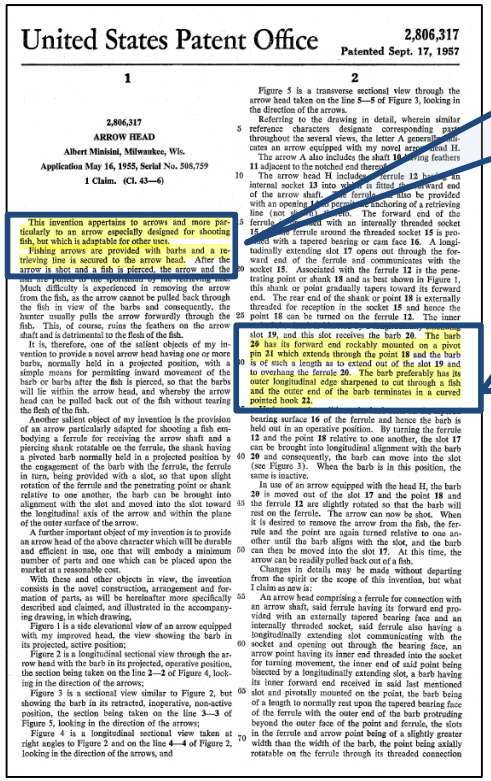
Minisini: "barb [20] preferably has its outer longitudinal edge sharpened to cut through a fish."

Ex. 1005, 2:31-34



Ex. 1005, Figure 1
***See also* Ex. 1019, Kuhn Decl., pp. 83, 86, 91-92, 94**
Paper 2, pp. 49-52
Paper 19, pp. 33-35

GROUND 3 - Obvious to Add Sharp Edge to Lint



United States Patent Office 2,806,317 Patented Sept. 17, 1957

1

2,806,317
ARROW HEAD
Albert Minisini, Milwaukee, Wis.
Application May 16, 1955, Serial No. 508,759
1 Claim. (Cl. 43—6)

This invention appertains to arrows and more particularly to an arrow especially designed for shooting fish, but which is adaptable for other uses.

Fishing arrows are provided with barbs and a retrieving line is secured to the arrow head. After the arrow is shot and a fish is pierced, the arrow and the

Much difficulty is experienced in removing the arrow from the fish, as the arrow cannot be pulled back through the fish in view of the barbs and consequently, the hunter usually pulls the arrow forwardly through the fish. This, of course, ruins the feathers on the arrow shaft and is detrimental to the flesh of the fish.

It is, therefore, one of the salient objects of my invention to provide a novel arrow head having one or more barbs, normally held in a projected position, with a simple means for permitting inward movement of the barb or barbs after the fish is pierced, so that the barbs will lie within the arrow head, and whereby the arrow head can be pulled back out of the fish without tearing the flesh of the fish.

Another salient object of my invention is the provision of an arrow particularly adapted for shooting a fish embodying a ferrule for receiving the arrow shaft and a piercing shank rotatable on the ferrule, the shank having a pivoted barb normally held in a projected position by the engagement of the barb with the ferrule, the ferrule in turn, being provided with a slot, so that upon slight rotation of the ferrule and the penetrating point or shank relative to one another, the barb can be brought into alignment with the slot and moved into the slot toward the longitudinal axis of the arrow and within the plane of the outer surface of the arrow.

A further important object of my invention is to provide an arrow head of the above character which will be durable and efficient in use, one that will embody a minimum number of parts and one which can be placed upon the market at a reasonable cost.

With these and other objects in view, the invention consists in the novel construction, arrangement and formation of parts, as will be hereinafter more specifically described and claimed, and illustrated in the accompanying drawing, in which drawing,

Figure 1 is a side elevational view of an arrow equipped with my improved head, the view showing the barb in its projected, active position;

Figure 2 is a longitudinal sectional view through the arrow head with the barb in its projected, operative position, the section being taken on the line 2—2 of Figure 4, looking in the direction of the arrows;

Figure 3 is a sectional view similar to Figure 2, but showing the barb in its retracted, inoperative, non-active position, the section being taken on the line 3—3 of Figure 5, looking in the direction of the arrows;

Figure 4 is a longitudinal sectional view taken at right angles to Figure 2 and on the line 4—4 of Figure 2, looking in the direction of the arrows, and

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Figure 5 is a transverse sectional view through the arrow head taken on the line 5—5 of Figure 3, looking in the direction of the arrows.

Referring to the drawing in detail, wherein similar reference characters designate corresponding parts throughout the several views, the letter A generally indicates an arrow equipped with my novel arrow head H.

The arrow A also includes the shaft 10 having feathers 11 adjacent to the notched end thereof.

The arrow head H includes a ferrule 12 having an internal socket 13 into which the shaft is fitted. The forward end of the arrow shaft and ferrule also may be provided with an opening 14 for the purpose of anchoring of a retrieving line (not shown) thereto. The forward end of the ferrule is provided with an internally threaded socket 15 and the ferrule around the threaded socket 15 is provided with a tapered bearing or cam face 16. A longitudinally extending slot 17 opens out through the forward end of the ferrule and communicates with the socket 15. Associated with the ferrule 12 is the penetrating point or shank 18 and as best shown in Figure 1, this shank or point gradually tapers toward its forward end. The rear end of the shank or point 18 is externally threaded for reception in the socket 15 and hence the point 18 can be turned on the ferrule 12. The inner slot 19, and this slot receives the barb 20. The barb 20 has its forward end rockably mounted on a pivot pin 21 which extends through the point 18 and the barb is of such a length as to extend out of the slot 19 and to overhang the ferrule 20. The barb preferably has its outer longitudinal edge sharpened to cut through a fish and the outer end of the barb terminates in a curved pointed hook 22.

bearing surface 16 of the ferrule and hence the barb is held out in an operative position. By turning the ferrule 12 and the point 18 relative to one another, the slot 17 can be brought into longitudinal alignment with the barb 20 and consequently, the barb can move into the slot (see Figure 3). When the barb is in this position, the same is inactive.

In use of an arrow equipped with the head H, the barb 20 is moved out of the slot 17 and the point 18 and the ferrule 12 are slightly rotated so that the barb will rest on the ferrule. The arrow can now be shot. When it is desired to remove the arrow from the fish, the ferrule and the point are again turned relative to one another until the barb aligns with the slot, and the barb can then be moved into the slot 17. At this time, the arrow can be readily pulled back out of a fish.

Changes in details may be made without departing from the spirit or the scope of this invention, but what I claim as new is:

An arrow head comprising a ferrule for connection with an arrow shaft, said ferrule having its forward end provided with an externally tapered bearing face and an internally threaded socket, said ferrule also having a longitudinally extending slot communicating with the socket and opening out through the bearing face, an arrow point having its inner end threaded into the socket for turning movement, the inner end of said point being bisected by a longitudinally extending slot, a barb having its inner forward end received in said last mentioned slot and pivotally mounted on the point, the barb being of a length to normally rest upon the tapered bearing face of the ferrule with the outer end of the barb protruding beyond the outer face of the point and ferrule, the slots in the ferrule and arrow point being of a slightly greater width than the width of the barb, the point being axially rotatable on the ferrule through its threaded connection

This invention appertains to arrows and more particularly to an arrow especially designed for shooting fish, but which is adaptable for other uses.

Fishing arrows are provided with barbs and a retrieving line is secured to the arrow head. After the arrow is shot and a fish is pierced, the arrow and the

Ex. 1005, 1:15-20
***See also* Paper 2, pp. 49-52**
Paper 19, pp. 33-35

slot **19**, and this slot receives the barb **20**. The barb **20** has its forward end rockably mounted on a pivot pin **21** which extends through the point **18** and the barb is of such a length as to extend out of the slot **19** and to overhang the ferrule **20**. The barb preferably has its outer longitudinal edge sharpened to cut through a fish and the outer end of the barb terminates in a curved pointed hook **22**.

Ex. 1005, 2:27-34
***See also* Paper 2, pp. 49-52**
Paper 19, pp. 33-35

GROUND 3 - Obvious to Add Sharp Edge to Lint

portions 22. This spring operates to bias the barbs 19 in the open position illustrated by FIGURE 2." Ex. 1002, 2:53-58 and Fig. 2.

1. Motivation to Combine

162. As discussed above, it is my opinion, Lint discloses all the requirements of 1-4, 7, 9, 11, 12, 15, and 17 of the '177 patent. If the Patent Owner contends that the blades, or barbs, of Lint require a sharp edge, I disagree for at least the reasons discussed above. In any event, in my opinion, it would have been obvious to a PHOSITA to add sharp edge to the blades, or barbs, of Lint. A PHOSITA would have known that doing so would have been a predictable use of prior art elements according to their established functions. A PHOSITA would have been aware of the teachings of Lint, Minisini, and Krieger and would have been motivated and readily able to combine their teachings to simply add sharp edges to the blades, or barbs, of Lint. As demonstrated by Minisini and Krieger, a PHOSITA would have known that adding sharp edges to such blades, or barbs, would facilitate cutting flesh and improve the flight characteristics of the broadhead. A PHOSITA would have recognized that adding sharp edges to such blades, or barbs, is nothing more than an anticipated, obvious, and routine application of known elements.

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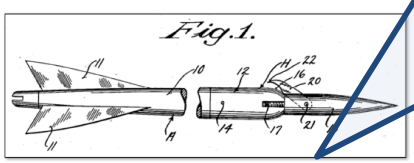
according to their established functions. A PHOSITA would have been aware of the teachings of Lint, Minisini, and Krieger and would have been motivated and readily able to combine their teachings to simply add sharp edges to the blades, or barbs, of Lint. As demonstrated by Minisini and Krieger, a PHOSITA would have known that adding sharp edges to such blades, or barbs, would facilitate cutting flesh and improve the flight characteristics of the broadhead. A PHOSITA would have recognized that adding sharp edges to such blades, or barbs, is nothing more than an anticipated, obvious, and routine application of known elements.

Ex. 1019, Kuhn Decl., ¶ 162
***See also* Paper 2, pp. 49-52**
Paper 19, pp. 33-35

GROUND 3 - Obvious to Add Sharp Edge to Lint

125. Also, published in 1957, Minisini expressly teaches sharpening the leading edge of an expandable barb, stating the "barb preferably has its outer longitudinal edge sharpened to cut through a fish." Ex. 1005, 2:31-34. An exemplary figure from Minisini is reproduced below and it shows the outer edge of the expandable barb 20.

Fig. 1.



126. Adding a sharp edge is an easy and simple process and well within the known capabilities of a POSITA. A POSITA knows that a sharp edge can be added to a barb by using a sharpening stone (whetstone), file, or, alternatively, a "pull through" sharpener. In doing so, a POSITA would maintain a consistent angle along the barb while gently drawing the barb across the stone or file, or alternatively pulling the barb through the "pull-through" sharpener, repeating on both sides until a sharp edge is achieved. During his deposition, Mr. Willkomm described a similar way to do it, which takes little time and effort:

"Q. I asked you, how would you do it? How would you add a sharp edge to a barb?

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126. Adding a sharp edge is an easy and simple process and well within the known capabilities of a POSITA. A POSITA knows that a sharp edge can be added to a barb by using a sharpening stone (whetstone), file, or, alternatively, a "pull through" sharpener. In doing so, a POSITA would maintain a consistent angle along the barb while gently drawing the barb across the stone or file, or alternatively pulling the barb through the "pull-through" sharpener, repeating on both sides until a sharp edge is achieved. During his deposition, Mr. Willkomm described a similar way to do it, which takes little time and effort:

Ex. 1046, Kuhn Decl., ¶ 126
***See also* Paper 2, pp. 49-52**
Paper 19, pp. 33-35

GROUND 3 - Obvious to Add Sharp Edge to Lint

Q. I asked you, how would you do it? How would you add a sharp edge to a barb?
A. If I were to do it, I would probably hold it in a vise so that a portion of the barb was exposed, and then use a file at an angle to file on it. And depending on how hard or what kind of material and the hardness of the barb would determine how long it would take to put an edge on the barb. And I'd have to do it first on one side and then on the other side, to put a sharp edge on it.

Ex. 1034, 166:16-167:2.

Q. How is the cutting edge formed? Is it filed in the fashion that you described earlier, taking a file and created an edge?
A. Yes.

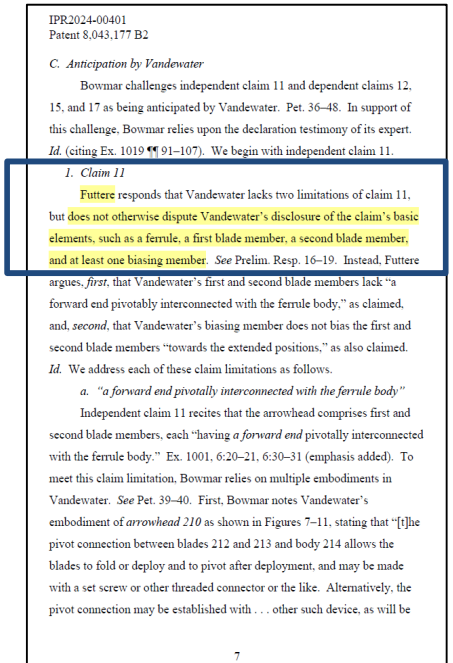
Ex. 1034, 172:7-10.

Ex. 1034, Willkomm Transcript
***See also* Paper 19, pp. 34-35**

GROUND 2 – Vandewater Anticipates

NOT DISPUTED that that Vandewater discloses the claim's basic elements:

- a ferrule with a rearward end and opposite forward end
- a first blade member with a first end pivotally connected to the ferrule and an opposite end,
- a second blade member with a first end pivotally connected to the ferrule and an opposite end, and
- a biasing member.


IPR2024-00401
Patent 8,043,177 B2

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

Futtere 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, Futtere argues, *first*, that Vandewater's first and second blade members lack "a forward end pivotably 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

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1. Claim 11

Futtere 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, Futtere

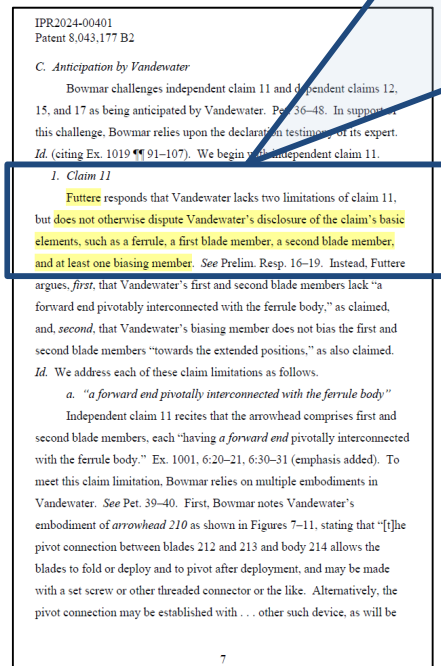
Institution Decision, pg. 7
***See also* Paper 19, pp. 16-25**

GROUND 2 – Vandewater Anticipates

Body 14 (1st and 2nd Embodiments) + Blades 212, 213 (Third Embodiment) = Arrowhead 210

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

Institution Decision, pg. 7
***See also* Paper 2, pp. 39-40**



IPR2024-00401
Patent 8,043,177 B2

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

Futtere 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, Futtere argues, *first*, that Vandewater's first and second blade members lack "a forward end pivotably 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

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GROUND 2 – Vandewater Anticipates

Body 14 (1st and 2nd Embodiments) + Blades 212, 213 (Third Embodiment) = Arrowhead 210

retracted within the slots i8, as illustrated by FIGURE 3." (Exs. 1002, 2:70-3:4; 1019, ¶¶64, 89). An annotated version of Figure 3 is shown above in Section VII.E.

J. Dependent Claim 17

Dependent claim 17 depends from claim 11 and adds "wherein: the biasing member is a coil spring." Lint discloses a "spring 24 that "operates to bias the barbs 19 in the open position illustrated by FIGURE 2." (Exs. 1002, 2:53-58 and Fig. 2; 1019, ¶¶64, 90).

VIII. CLAIM-BY-CLAIM EXPLANATION OF GROUND 2 FOR UNPATENTABILITY OF CLAIMS 11, 12, 15, AND 17

Pursuant to Rule 42.104(b)(4)-(5), the specific grounds discussed below and in the Declaration of Dr. Kuhn demonstrate that the challenged claims are invalid because they are anticipated by Vandewater.

A. Independent Claim 11

The preamble to claim 11 recites: "A broadhead for an arrow having a shaft, the broadhead comprising:" Vandewater discloses a "pivotable arrowhead for an arrow . . . ." (Exs. 1003, 1:33-34; 1019, ¶¶91, 93). Vandewater discloses that the arrowhead has a "body 14" and "may further include an externally threaded portion 32 for connection to an arrow shaft. (Exs. 1003, 3:29-36; 1019, ¶¶91, 93).

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1. "a ferrule having a rearward end configured for attachment to the shaft and an opposite forward end with a ferrule body extending therebetween,"

Vandewater discloses that "body 14 has an elongated shape, such as a cylindrical shape, and may have a substantially pointed portion or tip 26." (Exs. 1003, 3:13-15; 1019, ¶¶91, 94). Vandewater further discloses that body 14 "may further include an externally threaded portion 32 for connection to an arrow shaft." (Exs. 1003, 3:29-30; 1019, ¶¶91, 94). An annotated version of Figure 16, taken from the Declaration of Dr. Kuhn[18], is shown below.

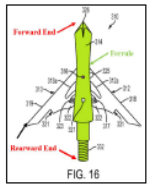


FIG. 16

[18] (Ex. 1019, ¶94).

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A. Independent Claim 11

The preamble to claim 11 recites: "A broadhead for an arrow having a shaft, the broadhead comprising:" Vandewater discloses a "pivotable arrowhead for an arrow . . . ." (Exs. 1003, 1:33-34; 1019, ¶¶91, 93). Vandewater discloses that the arrowhead has a "body 14" and "may further include an externally threaded portion 32 for connection to an arrow shaft. (Exs. 1003, 3:29-36; 1019, ¶¶91, 93).

1. "a ferrule having a rearward end configured for attachment to the shaft and an opposite forward end with a ferrule body extending therebetween,"

Vandewater discloses that "body 14 has an elongated shape, such as a cylindrical shape, and may have a substantially pointed portion or tip 26." (Exs. 1003, 3:13-15; 1019, ¶¶91, 94). Vandewater further discloses that body 14 "may further include an externally threaded portion 32 for connection to an arrow shaft." (Exs. 1003, 3:29-30; 1019, ¶¶91, 94). An annotated version of Figure 16, taken from

Paper 2, pp. 36-37

GROUND 2 – Vandewater Anticipates

Body 14 (1st and 2nd Embodiments) + Blades 212, 213 (Third Embodiment) = Arrowhead 210

2. "the forward end of the ferrule defining the forward tip of the arrow and being fixed with respect to the ferrule body;"

Vandewater discloses that a "body 14 has an elongated shape, such as a cylindrical shape, and may have a substantially pointed portion or tip 26." (Exs. 1003, 3:13-15; 1019, ¶¶91, 95). As shown in Figure 16 in Vandewater, for example, the forward tip is fixed with respect to the ferrule body. (Ex. 1019, ¶95). An annotated version of Figure 16, taken from the Declaration of Dr. Kuhn[19], is shown below.

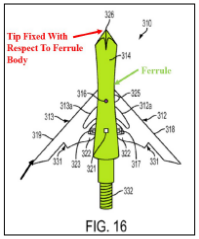


FIG. 16

[19] (Ex. 1019, ¶95).

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Paper 2, pg. 38

3. "a first blade member having a forward end pivotally interconnected with the ferrule body and an opposite rearward end,"

Vandewater discloses: "The 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 an interference-fit pin, cotter pin, or other such device, as will be apparent to the skilled artisan." (Exs. 1003, 7:33-39 and Figs. 7-11 and 15-20; 1019, ¶¶91, 96). An annotated version of Figure 16, taken from the Declaration of Dr. Kuhn[20], is shown below.

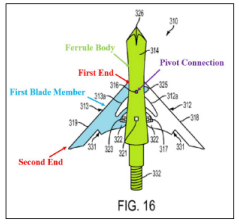


FIG. 16

[20] (Ex. 1019, ¶96).

Paper 2, pg. 39

GROUND 2 – Vandewater Anticipates

Body 14 (1st and 2nd Embodiments) + Blades 212, 213 (Third Embodiment) = Arrowhead 210

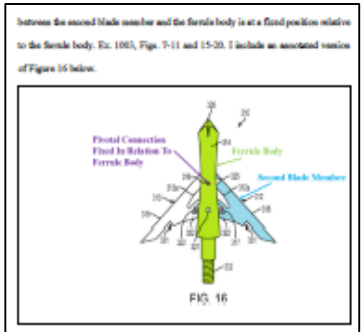
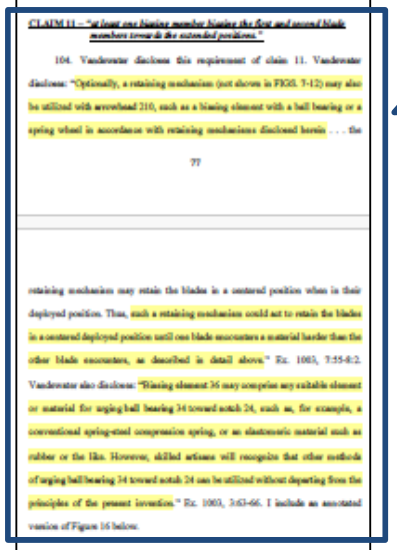

between the second blade member and the ferrule body is at a fixed position relative to the ferrule body. Ex. 1003, Figs. 7-11 and 15-20. I include an annotated version of Figure 16 below.

FIG. 16


CLAIM 11 – *"at least one biasing member biasing the first and second blade members towards the extended positions."*

104. Vandewater discloses this requirement of claim 11. Vandewater discloses: "Optionally, a retaining mechanism (not shown in FIGS. 7-12) may also be utilized with arrowhead 210, such as a biasing element with a ball bearing or a spring wheel in accordance with retaining mechanisms disclosed herein . . . the

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retaining mechanism may retain the blades in a centered position when in their deployed position. Thus, such a retaining mechanism could act to retain the blades in a centered deployed position until one blade encounters a material harder than the other blade encounters, as described in detail above." Ex. 1003, 7:55-8:2. Vandewater also discloses: "Biasing element 36 may comprise any suitable element or material for urging ball bearing 34 toward notch 24, such as, for example, a conventional spring-steel compression spring, or an elastomeric material such as rubber or the like. However, skilled artisans will recognize that other methods of urging ball bearing 34 toward notch 24 can be utilized without departing from the principles of the present invention." Ex. 1003, 3:63-66. I include an annotated version of Figure 16 below.

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Ex. 1019, Kuhn Decl., ¶ 104
***See also* Paper 2, pp. 45-46**

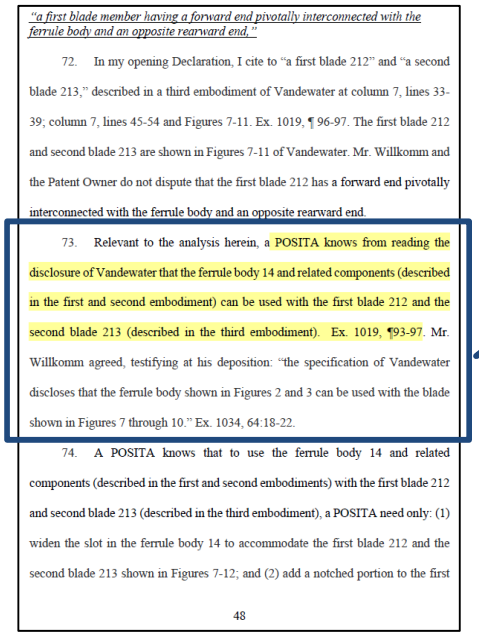
CLAIM 11 – *"at least one biasing member biasing the first and second blade members towards the extended positions."*

104. Vandewater discloses this requirement of claim 11. Vandewater discloses: "Optionally, a retaining mechanism (not shown in FIGS. 7-12) may also be utilized with arrowhead 210, such as a biasing element with a ball bearing or a spring wheel in accordance with retaining mechanisms disclosed herein . . . the retaining mechanism may retain the blades in a centered position when in their deployed position. Thus, such a retaining mechanism could act to retain the blades in a centered deployed position until one blade encounters a material harder than the other blade encounters, as described in detail above." Ex. 1003, 7:55-8:2. Vandewater also discloses: "Biasing element 36 may comprise any suitable element or material for urging ball bearing 34 toward notch 24, such as, for example, a conventional spring-steel compression spring, or an elastomeric material such as rubber or the like. However, skilled artisans will recognize that other methods of urging ball bearing 34 toward notch 24 can be utilized without departing from the principles of the present invention." Ex. 1003, 3:63-66. I include an annotated

GROUND 2 – Vandewater Anticipates

73. Relevant to the analysis herein, a POSITA knows from reading the disclosure of Vandewater that the ferrule body 14 and related components (described in the first and second embodiment) can be used with the first blade 212 and the second blade 213 (described in the third embodiment). Ex. 1019, ¶93-97. Mr. Willkomm agreed, testifying at his deposition: "the specification of Vandewater discloses that the ferrule body shown in Figures 2 and 3 can be used with the blade shown in Figures 7 through 10." Ex. 1034, 64:18-22.

Ex. 1046, Kuhn Decl., ¶ 73
***See also* Paper 19, pp. 17-18**



"a first blade member having a forward end pivotally interconnected with the ferrule body and an opposite rearward end,"

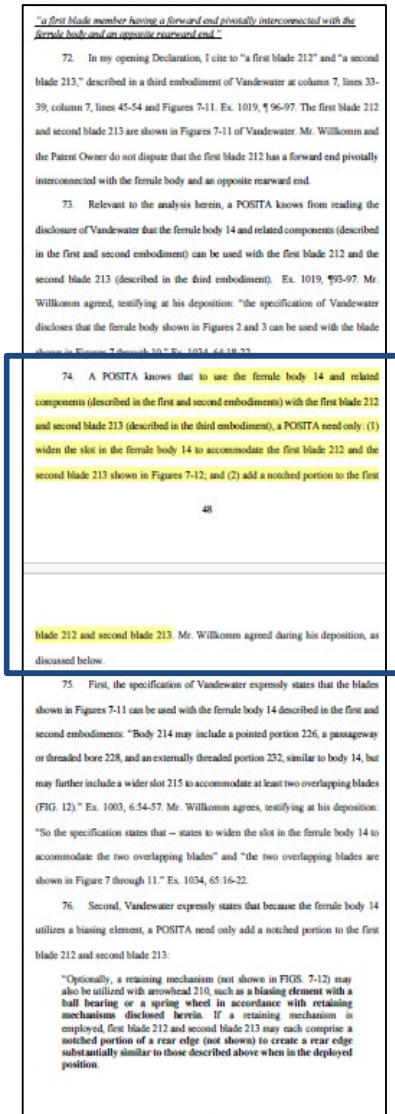
72. In my opening Declaration, I cite to "a first blade 212" and "a second blade 213," described in a third embodiment of Vandewater at column 7, lines 33-39; column 7, lines 45-54 and Figures 7-11. Ex. 1019, ¶ 96-97. The first blade 212 and second blade 213 are shown in Figures 7-11 of Vandewater. Mr. Willkomm and the Patent Owner do not dispute that the first blade 212 has a forward end pivotally interconnected with the ferrule body and an opposite rearward end.

73. Relevant to the analysis herein, a POSITA knows from reading the disclosure of Vandewater that the ferrule body 14 and related components (described in the first and second embodiment) can be used with the first blade 212 and the second blade 213 (described in the third embodiment). Ex. 1019, ¶93-97. Mr. Willkomm agreed, testifying at his deposition: "the specification of Vandewater discloses that the ferrule body shown in Figures 2 and 3 can be used with the blade shown in Figures 7 through 10." Ex. 1034, 64:18-22.

74. A POSITA knows that to use the ferrule body 14 and related components (described in the first and second embodiments) with the first blade 212 and second blade 213 (described in the third embodiment), a POSITA need only: (1) widen the slot in the ferrule body 14 to accommodate the first blade 212 and the second blade 213 shown in Figures 7-12; and (2) add a notched portion to the first

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GROUND 2 – Vandewater Anticipates



"a first blade member having a forward end pivotally interconnected with the ferrule body and an opposite rearward end."

72. In my opening Declaration, I cite to "a first blade 212" and "a second blade 213," described in a third embodiment of Vandewater at column 7, lines 33-39; column 7, lines 45-54 and Figures 7-11. Ex. 1019, ¶ 96-97. The first blade 212 and second blade 213 are shown in Figures 7-11 of Vandewater. Mr. Willkomm and the Patent Owner do not dispute that the first blade 212 has a forward end pivotally interconnected with the ferrule body and an opposite rearward end.

73. Relevant to the analysis herein, a POSITA knows from reading the disclosure of Vandewater that the ferrule body 14 and related components (described in the first and second embodiment) can be used with the first blade 212 and the second blade 213 (described in the third embodiment). Ex. 1019, ¶93-97. Mr. Willkomm agreed, testifying at his deposition: "the specification of Vandewater discloses that the ferrule body shown in Figures 2 and 3 can be used with the blade shown in Figures 7 through 10." Ex. 1034, 66:18-22.

74. A POSITA knows that to use the ferrule body 14 and related components (described in the first and second embodiments) with the first blade 212 and second blade 213 (described in the third embodiment), a POSITA need only: (1) widen the slot in the ferrule body 14 to accommodate the first blade 212 and the second blade 213 shown in Figures 7-12; and (2) add a notched portion to the first

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blade 212 and second blade 213. Mr. Willkomm agreed during his deposition, as discussed below.

75. First, the specification of Vandewater expressly states that the blades shown in Figures 7-11 can be used with the ferrule body 14 described in the first and second embodiments: "Body 214 may include a pointed portion 226, a passageway or threaded bore 228, and an externally threaded portion 232, similar to body 14, but may further include a wider slot 215 to accommodate at least two overlapping blades (FIG. 12)." Ex. 1003, 6:54-57. Mr. Willkomm agrees, testifying at his deposition: "So the specification states that -- states to widen the slot in the ferrule body 14 to accommodate the two overlapping blades" and "the two overlapping blades are shown in Figure 7 through 11." Ex. 1034, 65:16-22.

76. Second, Vandewater expressly states that because the ferrule body 14 utilizes a biasing element, a POSITA need only add a notched portion to the first blade 212 and second blade 213:

> "Optionally, a retaining mechanism (not shown in FIGS. 7-12) may also be utilized with arrowhead 210, such as **a biasing element with a ball bearing or a spring wheel in accordance with retaining mechanisms disclosed herein.** If 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.**

74. A POSITA knows that to use the ferrule body 14 and related components (described in the first and second embodiments) with the first blade 212 and second blade 213 (described in the third embodiment), a POSITA need only: (1) widen the slot in the ferrule body 14 to accommodate the first blade 212 and the second blade 213 shown in Figures 7-12; and (2) add a notched portion to the first blade 212 and second blade 213. Mr. Willkomm agreed during his deposition, as

Ex. 1046, Kuhn Decl., ¶ 74
***See also* Paper 19, pp. 17-18**

GROUND 2 – Vandewater Anticipates

blade 212 and second blade 213. Mr. Willkomm agreed during his deposition, as discussed below.

75. First, the specification of Vandewater expressly states that the blades shown in Figures 7-11 can be used with the ferrule body 14 described in the first and second embodiments: "Body 214 may include a pointed portion 226, a passageway or threaded bore 228, and an externally threaded portion 232, similar to body 14, but may further include a wider slot 215 to accommodate at least two overlapping blades (FIG. 12)." Ex. 1003, 6:54-57. Mr. Willkomm agrees, testifying at his deposition: "So the specification states that -- states to widen the slot in the ferrule body 14 to accommodate the two overlapping blades" and "the two overlapping blades are shown in Figure 7 through 11." Ex. 1034, 65:16-22.

76. Second, Vandewater expressly states that because the ferrule body 14 utilizes a biasing element, a POSITA need only add a notched portion to the first blade 212 and second blade 213:

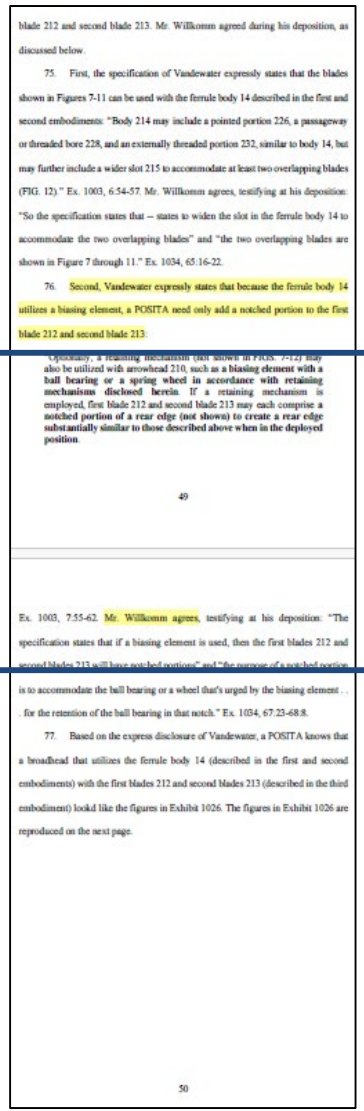
> "Optionally, a retaining mechanism (not shown in FIGS. 7-12) may also be utilized with arrowhead 210, such as **a biasing element with a ball bearing or a spring wheel in accordance with retaining mechanisms disclosed herein**. If a retaining mechanism is employed, first blade 212 and second blade 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**.

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Ex. 1046, Kuhn Decl., ¶ 75
***See also* Paper 19, pp. 17-18**

GROUND 2 – Vandewater Anticipates



blade 212 and second blade 213. Mr. Willkomm agreed during his deposition, as discussed below.

75. First, the specification of Vandewater expressly states that the blades shown in Figures 7-11 can be used with the ferrule body 14 described in the first and second embodiments: "Body 214 may include a pointed portion 226, a passageway or threaded bore 228, and an externally threaded portion 232, similar to body 14, but may further include a wider slot 215 to accommodate at least two overlapping blades (FIG. 12)." Ex. 1003, 6:54-57. Mr. Willkomm agrees, testifying at his deposition: "So the specification states that -- states to widen the slot in the ferrule body 14 to accommodate the two overlapping blades" and "the two overlapping blades are shown in Figure 7 through 11." Ex. 1034, 65:16-22.

76. Second, Vandewater expressly states that because the ferrule body 14 utilizes a biasing element, a POSITA need only add a notched portion to the first blade 212 and second blade 213:

> "Optionally, a retaining mechanism (not shown in FIGS. 7-12) may also be utilized with arrowhead 210, such as **a biasing element with a ball bearing or a spring wheel in accordance with retaining mechanisms disclosed herein**. If 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**.

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Ex. 1003, 7:55-62. Mr. Willkomm agrees, testifying at his deposition: "The specification states that if a biasing element is used, then the first blades 212 and second blades 213 will have notched portions" and "the purpose of a notched portion is to accommodate the ball bearing or a wheel that's urged by the biasing element . . . for the retention of the ball bearing in that notch." Ex. 1034, 67:23-68:8.

77. Based on the express disclosure of Vandewater, a POSITA knows that a broadhead that utilizes the ferrule body 14 (described in the first and second embodiments) with the first blades 212 and second blades 213 (described in the third embodiment) lookd like the figures in Exhibit 1026. The figures in Exhibit 1026 are reproduced on the next page.

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76. Second, Vandewater expressly states that because the ferrule body 14 utilizes a biasing element, a POSITA need only add a notched portion to the first blade 212 and second blade 213:

> "Optionally, a retaining mechanism (not shown in FIGS. 7-12) may also be utilized with arrowhead 210, such as **a biasing element with a ball bearing or a spring wheel in accordance with retaining mechanisms disclosed herein**. If 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**.

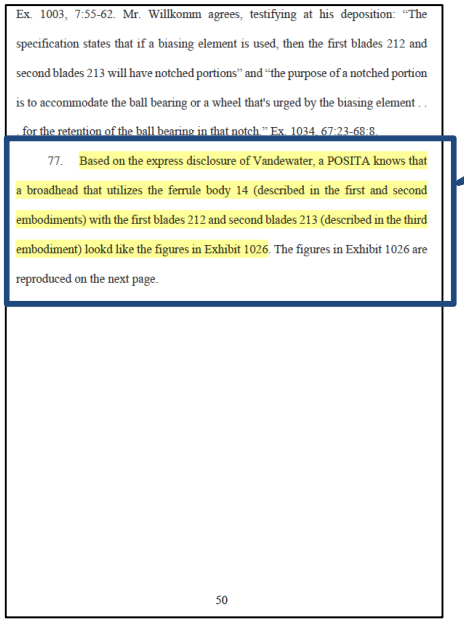
Ex. 1003, 7:55-62. Mr. Willkomm agrees, testifying at his deposition: "The specification states that if a biasing element is used, then the first blades 212 and second blades 213 will have notched portions" and "the purpose of a notched portion is to accommodate the ball bearing or a wheel that's urged by the biasing element . . . for the retention of the ball bearing in that notch." Ex. 1034, 67:23-68:8.

Ex. 1046, Kuhn Decl., ¶ 76
***See also* Paper 19, pp. 17-18**

GROUND 2 – Vandewater Anticipates

77. Based on the express disclosure of Vandewater, a POSITA knows that a broadhead that utilizes the ferrule body 14 (described in the first and second embodiments) with the first blades 212 and second blades 213 (described in the third embodiment) lookd like the figures in Exhibit 1026. The figures in Exhibit 1026 are reproduced on the next page.

Ex. 1046, Kuhn Decl., ¶ 77
***See also* Paper 19, pp. 17-18**

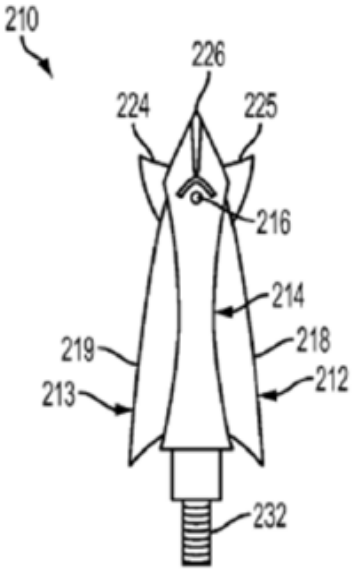


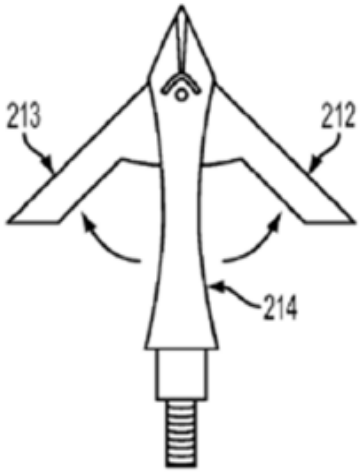
Ex. 1003, 7:55-62. Mr. Willkomm agrees, testifying at his deposition: "The specification states that if a biasing element is used, then the first blades 212 and second blades 213 will have notched portions" and "the purpose of a notched portion is to accommodate the ball bearing or a wheel that's urged by the biasing element . . . for the retention of the ball bearing in that notch." Ex. 1034, 67:23-68:8.

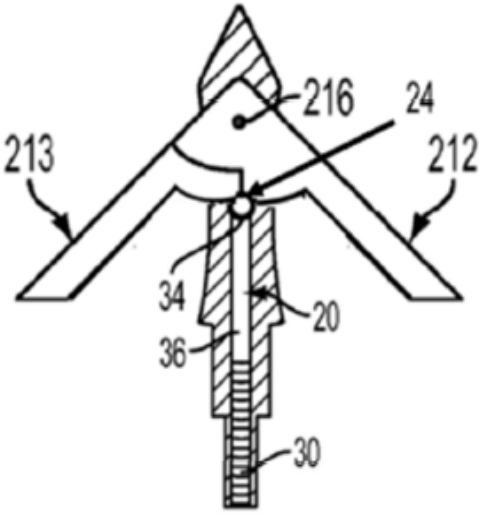
77. Based on the express disclosure of Vandewater, a POSITA knows that a broadhead that utilizes the ferrule body 14 (described in the first and second embodiments) with the first blades 212 and second blades 213 (described in the third embodiment) lookd like the figures in Exhibit 1026. The figures in Exhibit 1026 are reproduced on the next page.

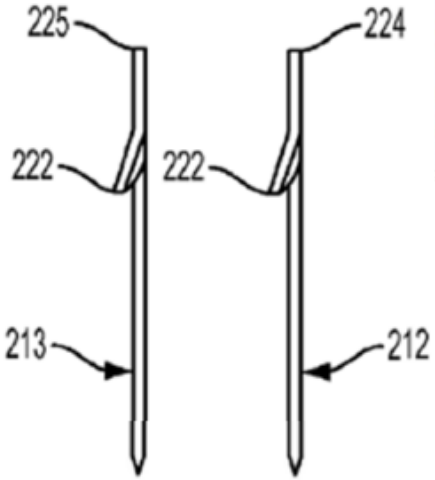
50

GROUND 2 – Vandewater Anticipates









20 –retaining mechanism
30 – threaded portion for receiving retaining mechanism
34 – ball bearing
36 – biasing element
210 – arrowhead
212 – first blade member
213 – second blade member
214 – body
216 – pivot pin
218 - sharpened portion
219 – sharpened portion
222 – tabs
224 – first opening lever
225 – second opening lever

Ex. 1026
***See also* Ex. 1046, Kuhn Decl., ¶ 77**
Paper 19, pp. 17-18

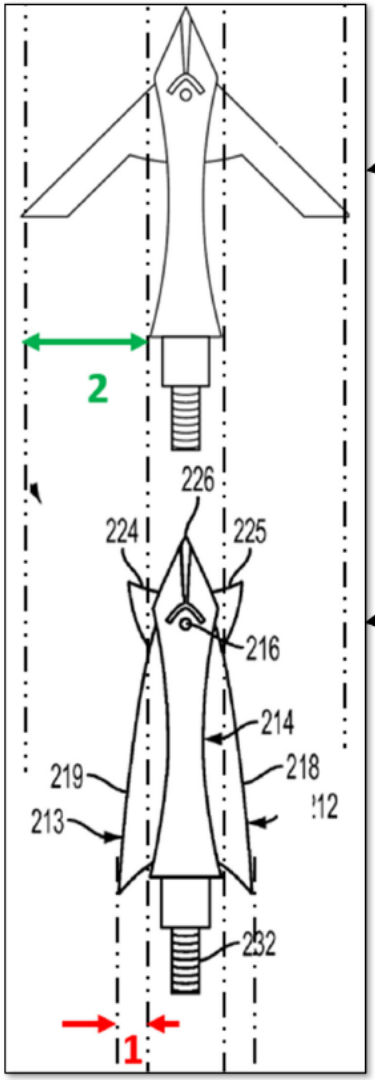
GROUND 2 – Vandewater Anticipates

Vandewater discloses "at least one biasing member biasing the first and second blade members towards the extended positions

"biasing element that biases or urges an engaging element into the notch to retain the blade and limit or impede pivotal movement of the blade."
Ex. 1003, 1:42-45.

"biasing force . . . retains the blade in its initial or centered position."
Ex. 1003, 1:64-65.

"In addition to holding blade 12 in a centered position relative to body 14, retaining mechanism 20 may also function to dampen pivotal movement of blade 12 . . . a desired resistance to pivotal movement can be achieved by selecting a biasing element 36 capable of delivering a desired amount of force and damping. Pivotal movement or resistance to pivotal movement of blade 12 may be limited or controlled by the configuration of rear edge 22 and/or spring force and/or engagement of the ball bearing 34 with the blade."
Ex. 1003, 4:27-41.



"an extended position" – i.e., the rearward end being spaced from the ferrule body by a distance which is greater than the first distance

"a retracted position" – i.e., a first distance between the ferrule body and the rearward end of the blade member

Ex. 1046, Kuhn Decl., ¶ 86
See also Paper 19, pp. 22-23

GROUND 2 – Vandewater Anticipates

Ex. 1036, Video
See also Paper 19, pp. 22-23

GROUND 5 - Liechty, II Anticipates

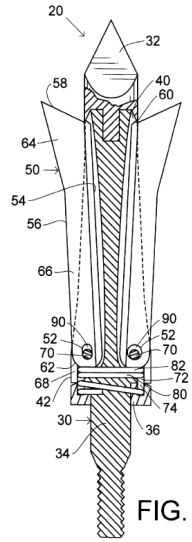


FIG. 2

Ex. 1012, Fig. 2

"fully closed"

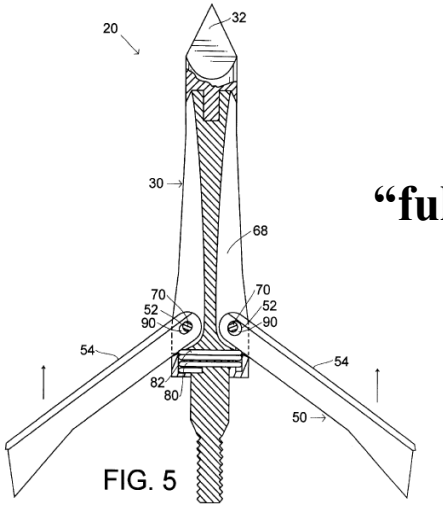
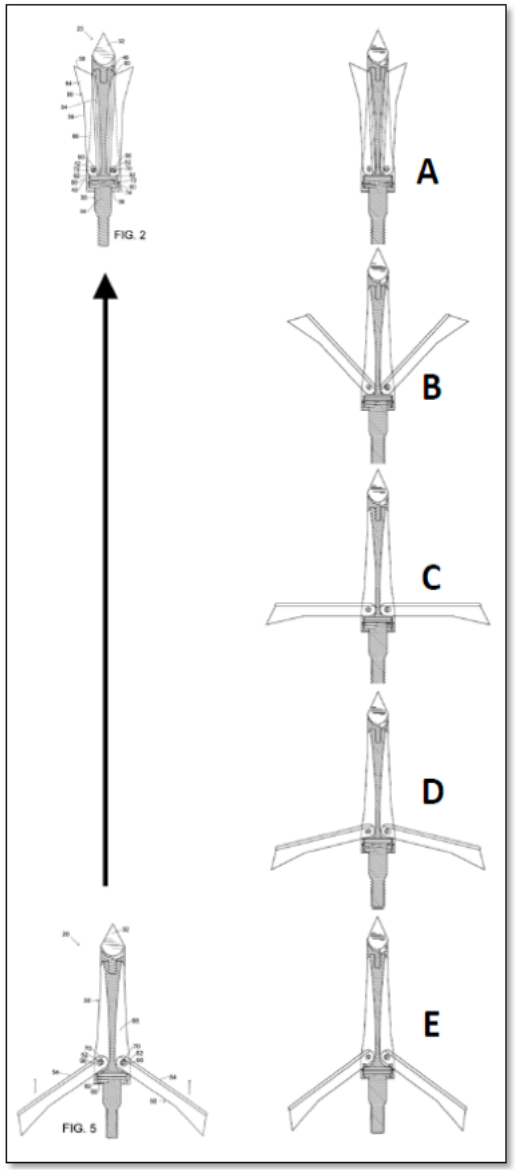


FIG. 5

Ex. 1012, Fig. 5

"fully open"



Ex. 1023

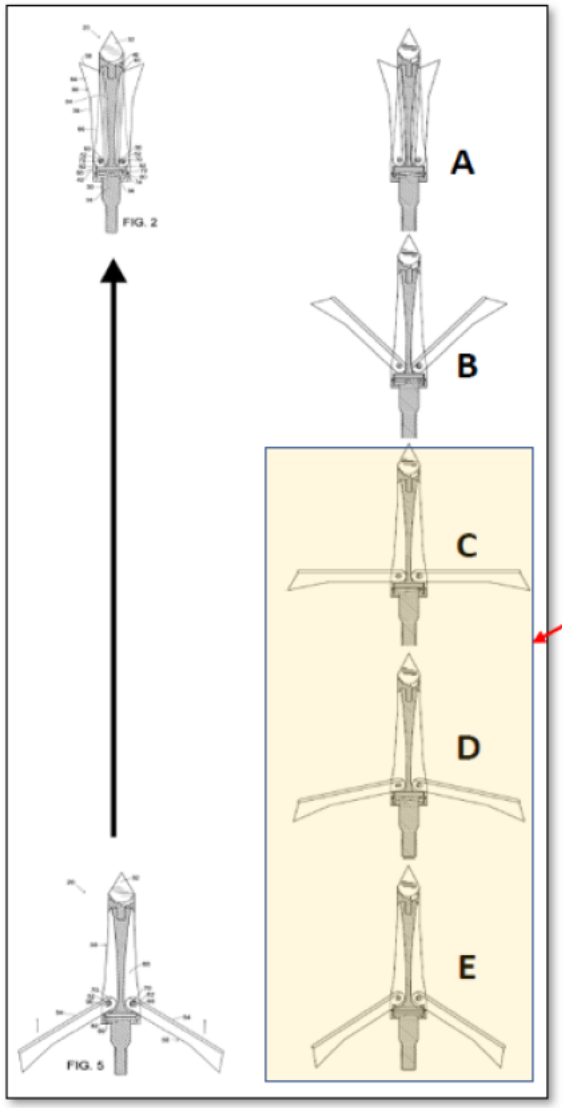
Referring to Ex. 1023, Mr. Willkomm testified:

"Q. Okay . . do the figures otherwise depict what the broadhead looks like as the blades move or progress from the fully open position back to the fully closed position?
A. Yes."
Ex. 1034, 34:17-22.

"Q. And the spring causes the blades to move forward in that circumstance; correct?
A. The springs are acting upon the blades, yes. In that direction."
Ex. 1034, 30:22-25.

Ex. 1034, Willkomm Transcript Paper 19, pp. 5-10

GROUND 5 - Liechty, II Anticipates

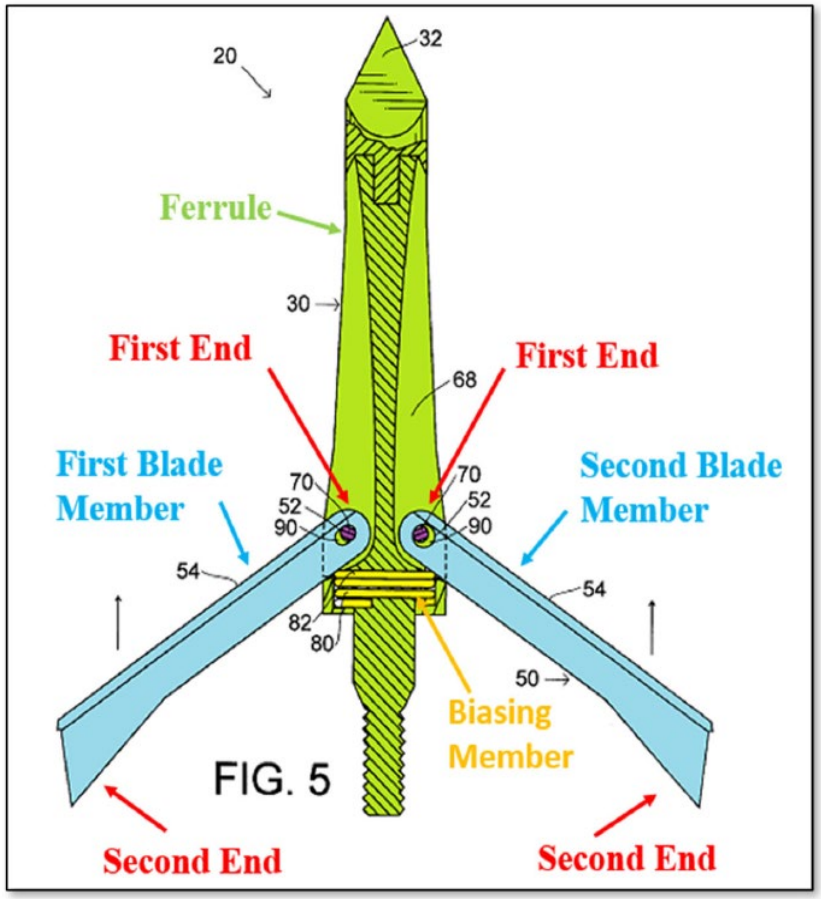


A prior art reference that sometimes, but not always, embodies a claim nonetheless anticipates that claim. *Power Integrations*, 843 F.3d. At 1336-37.

Liechty embodies the claims when the blades move forward from E to C.

Ex. 1023
See also Paper 19, pp. 1-3

GROUND 5 - Liechty, II Anticipates



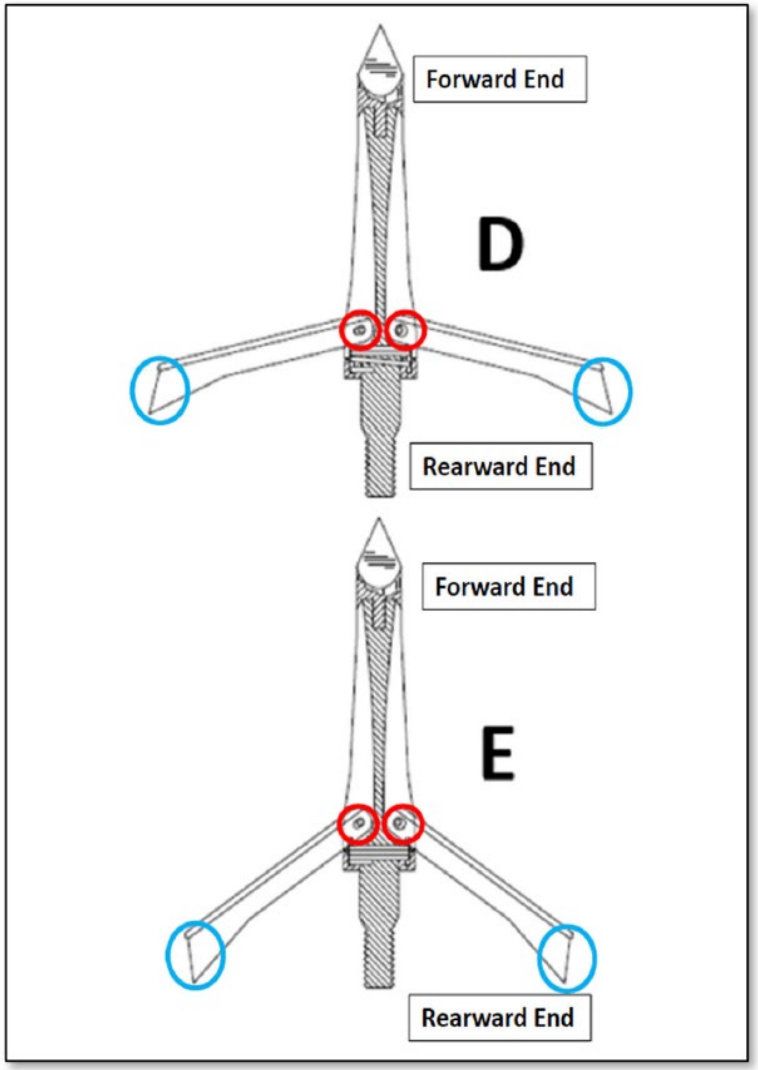
Ex. 1046, Kuhn Decl., ¶ 18

Q. Yes. And in Figure 5 the blades have a first end that are pivotally connected to the ferrule body by a hinge pin.
A. The blades have an end which is connected to the ferrule by the pivot point.
Ex. 1034, 22:22-23:5.

Q. And the blades have a second end -- we'll call that the free end, right? -- that's able to rotate freely, which is not connected to the ferrule body?
A. That is correct.
Ex. 1034, 23:6-10.

Ex. 1034, Willkomm Transcript Paper 19, pp. 4-5

GROUND 5 - Liechty, II Anticipates



Ex. 1025

Q. Sure. So the first ends of the blades, which are circled red, are forward of the second ends of the blades, which are circled blue; correct?

A. Yes.

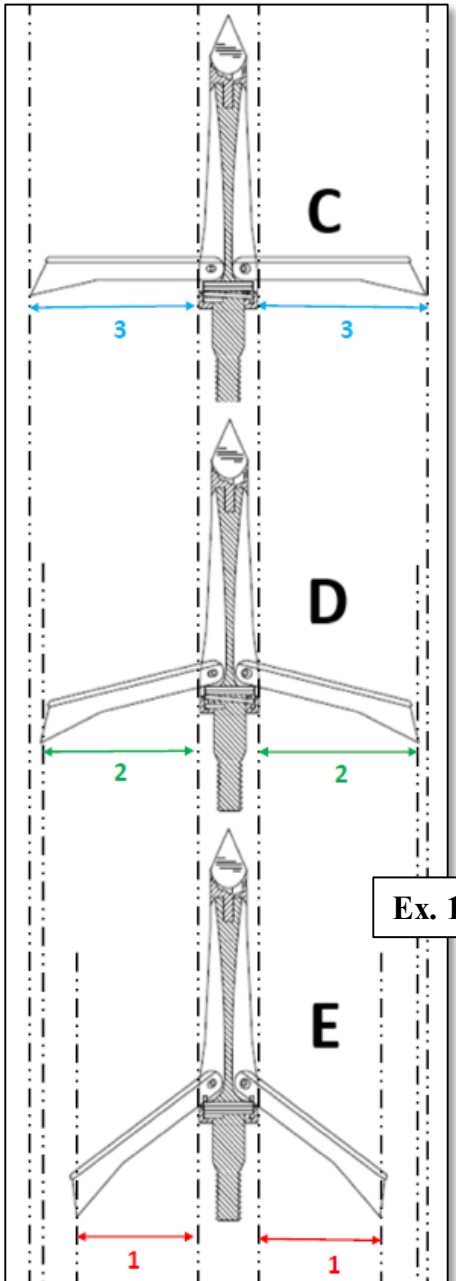
Q. In Figure D, the first end of each blade, which is circled red, is forward of the second end of the blades, which is circled blue; correct?

A. Yes. The ends circled in red are forward of the ends circled in blue. Yes.

Ex. 1034, 44:1-9.

Ex. 1034, Willkomm Transcript
Paper 19, pp. 13-14

GROUND 5 - Liechty, II Anticipates



Ex. 1024

22. During normal use of the Liechty, II broadhead, the blades will move forward as depicted in Exhibit 1024 when the broadhead: (1) is moving through an animal; (2) the broadhead stops in an animal; or (3) exits an animal. Mr. Willkomm agrees. Ex. 1034, 36:1-38:14. For example, Mr. Willkomm testified:

Ex. 1046, Kuhn Decl., ¶ 22
Paper 19, pp. 5-10

22. During normal use of the Liechty, II broadhead, the blades will move forward as depicted in Exhibit 1024 when the broadhead: (1) is moving through an animal; (2) the broadhead stops in an animal; or (3) exits an animal. Mr. Willkomm agrees. Ex. 1034, 36:1-38:14. For example, Mr. Willkomm testified:

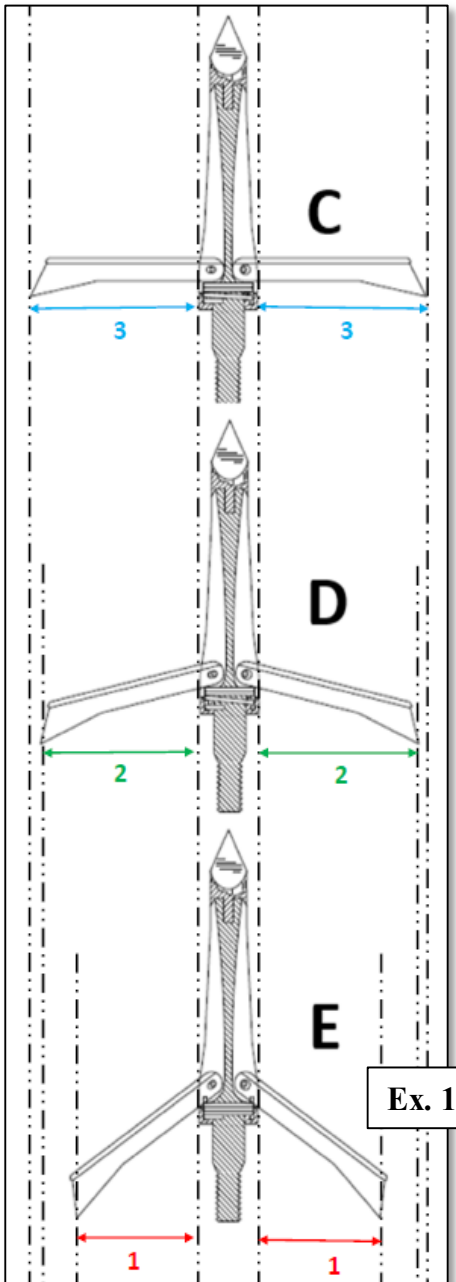
Q. And then, after the broadhead is in the fully open position, when do the blades start moving back forward, in your experience?
A. When the resistance of the medium through which it's traveling is less than the spring force, then the blades will then move forward toward the closed position.
Q. Could that occur while the broadhead is moving in an animal?
A. Yes.
Q. Could that occur when the broadhead exits an animal if you're hunting deer?
A. Yes.

Ex. 1034, 36:1-13.

In your experience as an expert, will the blades of the Liechty broadhead move forward as depicted in the figures of Exhibit 1023 after the broadhead comes to a stop in the animal?
A. No, not against, for example, ribs either going in or going out.
Q. What if it stops in the stomach of the deer?
A. In the stomach, it depends upon which part of the abdominal section you're referring to. Any one of the four stomachs and also the large and small intestines all have different coefficients of resistance. So answering your question is a yes and no. **There are situations where it will. For example, if it does not have in the abdominal section hitting where there is not a resisting force that's enough to keep the spring fully compressed, it will decompress and push those blades somewhat forward. In the abdominal cavity, only at the very top where there is a gap and air on the inside of the abdominal cavity would -- and it would stop right at that point, that would allow some movement forward.**
Q. How much movement forward?
A. Of the blades.

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GROUND 5 - Liechty, II Anticipates



Ex. 1024

Q. And then, after the broadhead is in the fully open position, when do the blades start moving back forward, in your experience?

A. When the resistance of the medium through which it's traveling is less than the spring force, then the blades will then move forward toward the closed position.

Q. Could that occur while the broadhead is moving in an animal?

A. Yes.

Q. Could that occur when the broadhead exits an animal if you're hunting deer?

A. Yes.

Ex. 1034, 36:1-13.

Ex. 1034, Willkomm Transcript Paper 19, pp. 5-10

GROUND 5 - Liechty, II Anticipates

In your experience as an expert, will the blades of the Liechty broadhead move forward as depicted in the figures of Exhibit 1023 after the broadhead comes to a stop in the animal?

A. No, not against, for example, ribs either going in or going out.

Q. What if it stops in the stomach of the deer?

A. In the stomach, it depends upon which part of the abdominal section you're referring to. Any one of the four stomachs and also the large and small intestines all have different coefficients of resistance. So answering your question is a yes and no. **There are situations where it will. For example, if it does not have in the abdominal section hitting where there is not a resisting force that's enough to keep the spring fully compressed, it will decompress and push those blades somewhat forward. In the abdominal cavity, only at the very top where there is a gap and air on the inside of the abdominal cavity would -- and it would stop right at that point, that would allow some movement forward.**

Q. How much movement forward?

A. Of the blades.

Q. How much movement forward?

A. It depends on where it stops in the animal. If it stops where let's say the tip, for example, is touching the far side, then the blades would only go so far forward until they touch the inside of the rib cage. **If it hit on the inside of the intestines, depending on the resistance of the walls of the large or small intestines, or the stomachs themselves can offer enough resistance so they would not allow the blades to go fully forward.**

Q. But the blades will move somewhat forward; correct?

A. Yes.

Ex. 1034, 36:18-38:8.

Ex. 1034, Willkomm Transcript

GROUND 5 - Liechty, II Anticipates



GROUND 5 - Liechty, II Anticipates

Claim 1:

"retracted position wherein the second end is spaced from the ferrule body at a first distance"

"extended position wherein the second end is spaced from the ferrule body by a distance which is greater than the first distance"

Ex. 1001, 5:27-31

Specification:

"retracted position wherein the second end is spaced from the ferrule body at a first distance"

"extended position wherein the second end is spaced from the ferrule body by a distance which is greater than the first distance"

Ex. 1001, 1:40-45
***See also* Paper 19, pg. 6, fn. 3**

"Retract" means "to draw or pull back." https://www.merriam-webster.com/dictionary/retract.
"Extend" means "to stretch out in distance." https://www.merriam-webster.com/dictionary/extend.

GROUND 5 - Liechty, II Anticipates

Q. Claim 1 defines retracted position as a first distance between the ferrule body and the second end of the blade member.
A. Uh-huh. Yes, I think that's correct."
Ex. 1034, 75:8-11.

Q. So claim 1 defines extended position as the second end being spaced from the ferrule body by a distance which is greater than the first distance; correct?
A. Yes.
Ex. 1034, 75:18-22.

Q. And the specification uses the same language when describing the retracted and extended positions; correct?
A. Yes.
Ex. 1034, 75:23-76:1.

Ex. 1034, Willkomm Transcript
***See* Paper 19, pp. 5-6**

GROUND 5 - Liechty, II Anticipates

20. Notably, nothing in the claim prohibits when (1) the blades must be in the "retracted position" or "extended position;" or (2) when the blades must move from an "retracted position" to an "extended position." Mr. Willkomm agrees. Ex. 1034, 81:2-17 (reproduced below).

Ex. 1046, Kuhn Decl., ¶ 20
***See also* Paper 19, pg. 6**

"the first blade member having a retracted position wherein the second end is spaced from the ferrule body at a first distance and an extended position wherein the second end is spaced from the ferrule body by a distance which is greater than the first distance;"

19. Liechty, II discloses the blades in a "retracted position" and an "extended position." "Claim 1 defines 'retracted position' as 'a first distance between the ferrule body and the second end of the blade member." Ex. 1034, 75:8-11; Ex. 1001, 5:27-29. "Claim 1 defines 'extended position' as the second end being spaced from the ferrule body by a distance which is greater than the first distance." Ex. 1034, 75:18-21; Ex. 1001, 5:29-31. The specification of the '177 patent uses the exact same language to define the "retracted position" and "extended position." Ex. 1034, 75:23-76:1; Ex. 1001, 1:40-45.

20. Notably, nothing in the claim prohibits when (1) the blades must be in the "retracted position" or "extended position;" or (2) when the blades must move from an "retracted position" to an "extended position." Mr. Willkomm agrees. Ex. 1034, 81:2-17 (reproduced below).

Q. Sure. **There's nothing in the claim language in claim 1 that dictates when the blade members must move from a retracted position to an extended position.**
A. There's no timing element noted. Just that it has to be when the positions are in certain ways.
Q. And likewise, **there's no timing element in claim 1 that dictates when the blades must move from an extended position to a retracted position.**
A. You're asking of a timing element, sir?
Q. Well, your answer said there is no timing element in claim 1.
A. **Yes, that is correct. There is no timing element that I observed. Only definition of the position -- different positions.**

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GROUND 5 - Liechty, II Anticipates

Q. Sure. **There's nothing in the claim language in claim 1 that dictates when the blade members must move from a retracted position to an extended position.**

A. There's no timing element noted. Just that it has to be when the positions are in certain ways.

Q. And likewise, **there's no timing element in claim 1 that dictates when the blades must move from an extended position to a retracted position.**

A. You're asking of a timing element, sir?

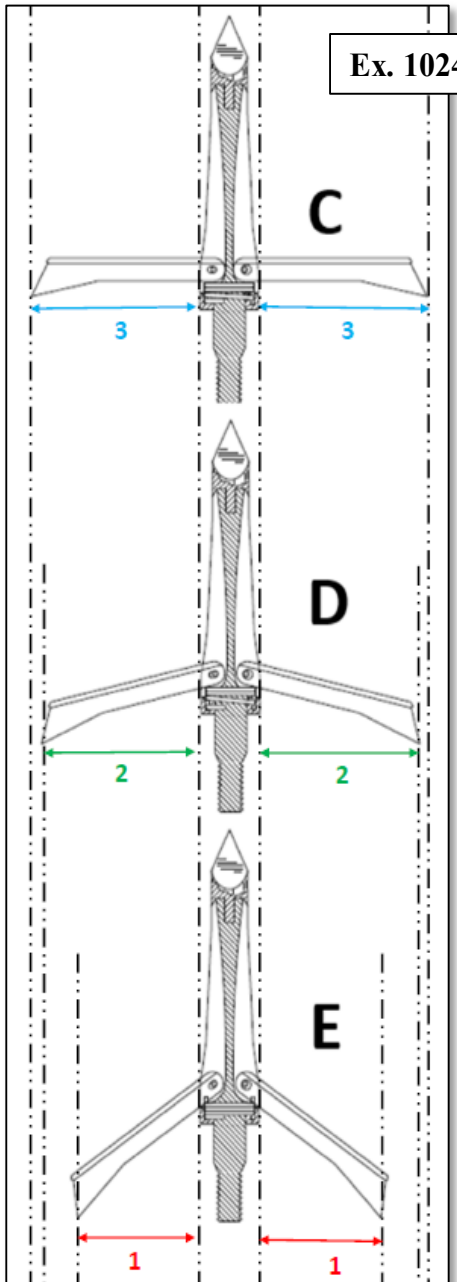
Q. Well, your answer said there is no timing element in claim 1.

A. **Yes, that is correct. There is no timing element that I observed. Only definition of the position -- different positions.**

Ex. 1034, 81:2-17.

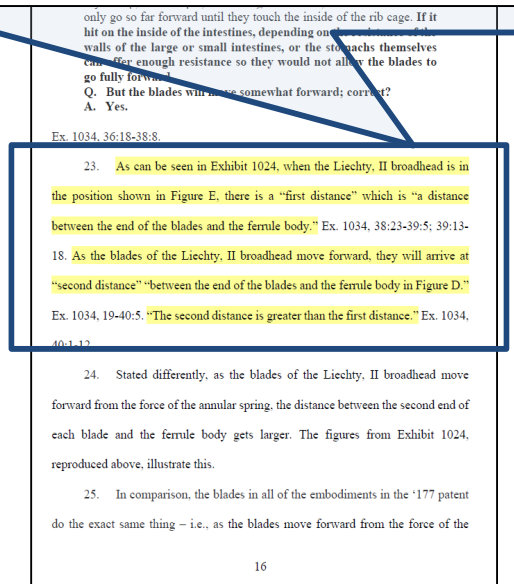
Ex. 1034, Willkomm Transcript
***See also* Paper 19, p. 6**

GROUND 5 - Liechty, II Anticipates



23. As can be seen in Exhibit 1024, when the Liechty, II broadhead is in the position shown in Figure E, there is a "first distance" which is "a distance between the end of the blades and the ferrule body." Ex. 1034, 38:23-39:5; 39:13-18. As the blades of the Liechty, II broadhead move forward, they will arrive at "second distance" "between the end of the blades and the ferrule body in Figure D." Ex. 1034, 19-40:5. "The second distance is greater than the first distance." Ex. 1034, 40:1-12.

Ex. 1046, Kuhn Decl., ¶ 23
***See also* Paper 2, pp. 75-79**
Paper 19, pp. 5-10



only go so far forward until they touch the inside of the rib cage. **If it hit on the inside of the intestines, depending on [illegible] walls of the large or small intestines, or the stomachs themselves can offer enough resistance so they would not allow the blades to go fully forward.**
Q. But the blades will move somewhat forward; correct?
A. Yes.

Ex. 1034, 36:18-38:8.

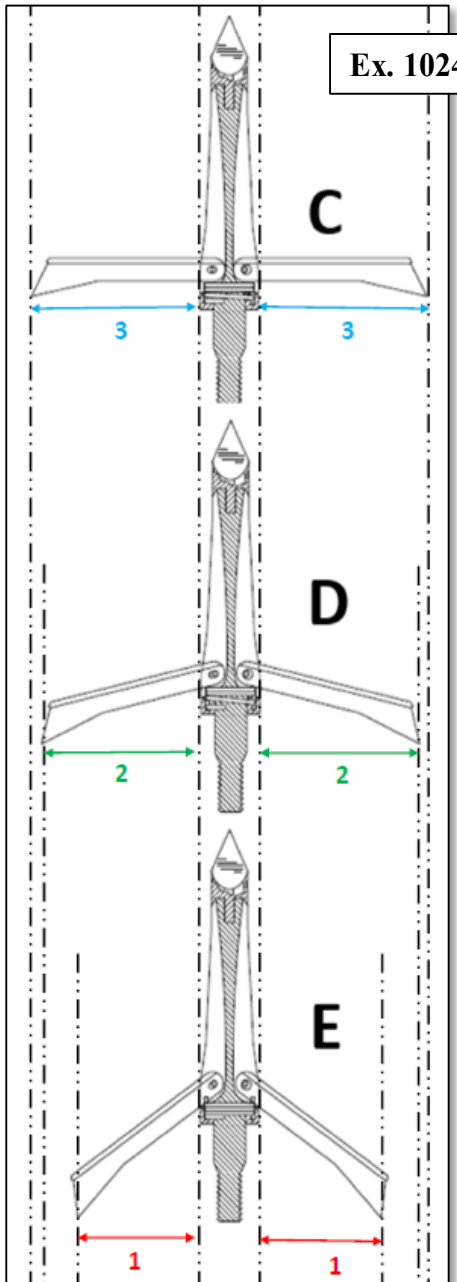
23. As can be seen in Exhibit 1024, when the Liechty, II broadhead is in the position shown in Figure E, there is a "first distance" which is "a distance between the end of the blades and the ferrule body." Ex. 1034, 38:23-39:5; 39:13-18. As the blades of the Liechty, II broadhead move forward, they will arrive at "second distance" "between the end of the blades and the ferrule body in Figure D." Ex. 1034, 19-40:5. "The second distance is greater than the first distance." Ex. 1034, 40:1-12.

24. Stated differently, as the blades of the Liechty, II broadhead move forward from the force of the annular spring, the distance between the second end of each blade and the ferrule body gets larger. The figures from Exhibit 1024, reproduced above, illustrate this.

25. In comparison, the blades in all of the embodiments in the '177 patent do the exact same thing – i.e., as the blades move forward from the force of the

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GROUND 5 - Liechty, II Anticipates



Q. Okay. Now look at Figure D. Figure D, there's a distance between the end of the blades and the ferrule body in Figure D. We have a green double arrow showing that distance. We labeled that with a number 2, a second distance. Do you see that?

A. Yes.

Q. Okay. So my question is, the second distance, which is in green in Figure D, is greater than the first distance, which is red in Figure E; correct?

A. That is correct.

* * *

Q. So now look at Figure C. In Figure C there's a distance between the end of the blades and the ferrule body. We have a blue double arrow showing that distance. We've labeled that with a number 3, a third distance. Do you see that?

A. Yes.

Q. And a third distance, which is in blue in Figure C, is greater than the second distance, which is in green in Figure D; correct?

A. Appears to be slightly greater, yes.

Q. So when comparing Figure C and D, the third distance, which is in blue, is greater than the second distance, which is in green; correct?

A. Yes.

Q. So the third distance is greater than the second distance.

A. Yes.

Q. So the distance in Figure C is greater than the distance in Figure E.

A. Appears to be slightly so.

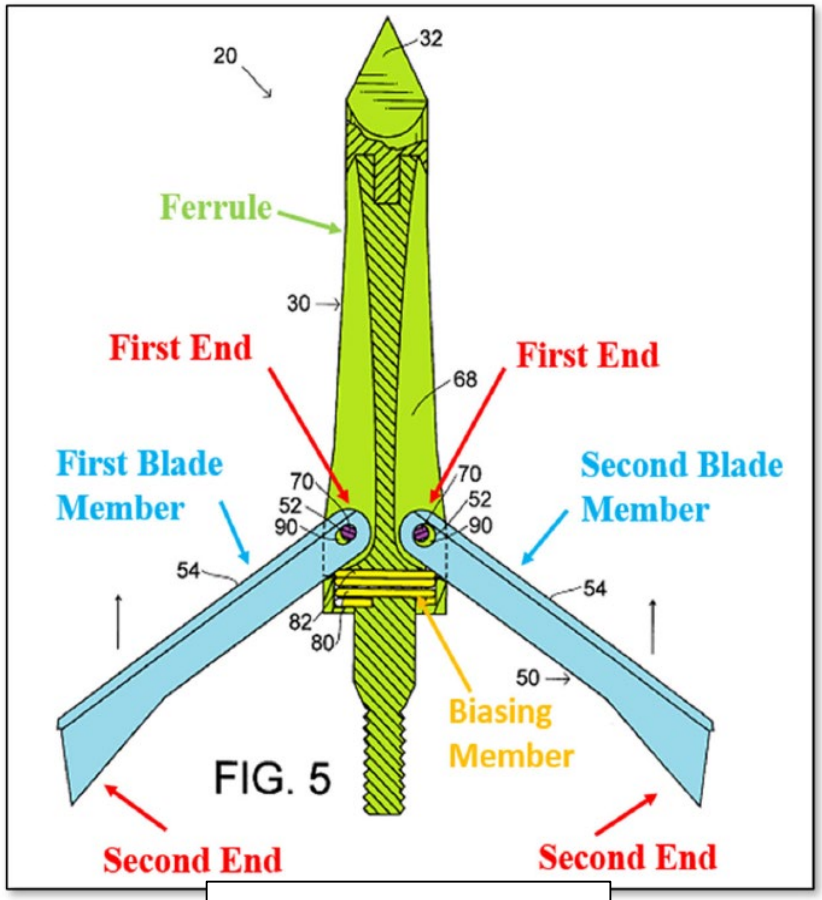
Ex. 1034, 39:13-41:7.

Ex. 1034, Willkomm Transcript Paper 19, pp. 5-10

GROUND 5 - Liechty, II Anticipates

the blade into the receiving notch to keep it in the closed position. As seen in Figure 5, the spring 80 is fully compressed which translates to a biasing force towards the forward end resulting in biasing the blade to the closed position.

Ex. 2008, Willkomm Decl., ¶ 116



Ex. 1046, Kuhn Decl., ¶ 18

Q. And the spring causes the blades to move forward in that circumstance; correct?
A. The springs are acting upon the blades, yes. In that direction."
Ex. 1034, 30:22-25.

Q. So in your opinion the phrase "the biasing member being the only element operable to hold the blade member in the extended position" means that the biasing member is the only element operable to exert a force on the blade member in the extended position; correct?
A. Yes.
Ex. 1034, 91:14-20.

Ex. 1034, Willkomm Transcript
See also Paper 19, pp. 12