

BOWMAR ARCHERY, LLC

Petitioner

v.

VETERAN'S INNOVATIVE PRODUCTS, LLC

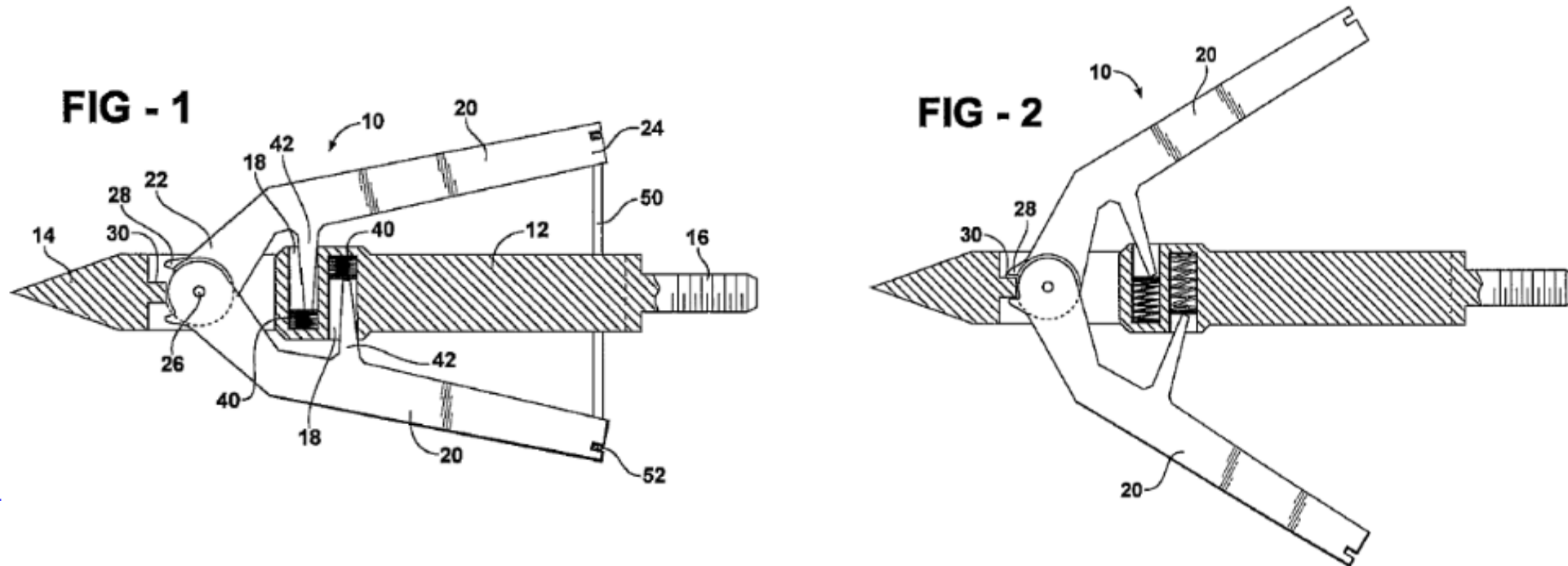
Patent Owner

INTER PARTIES REVIEW NO. IPR2024-00401

PATENT NO. 8,043,177

Patent Overview

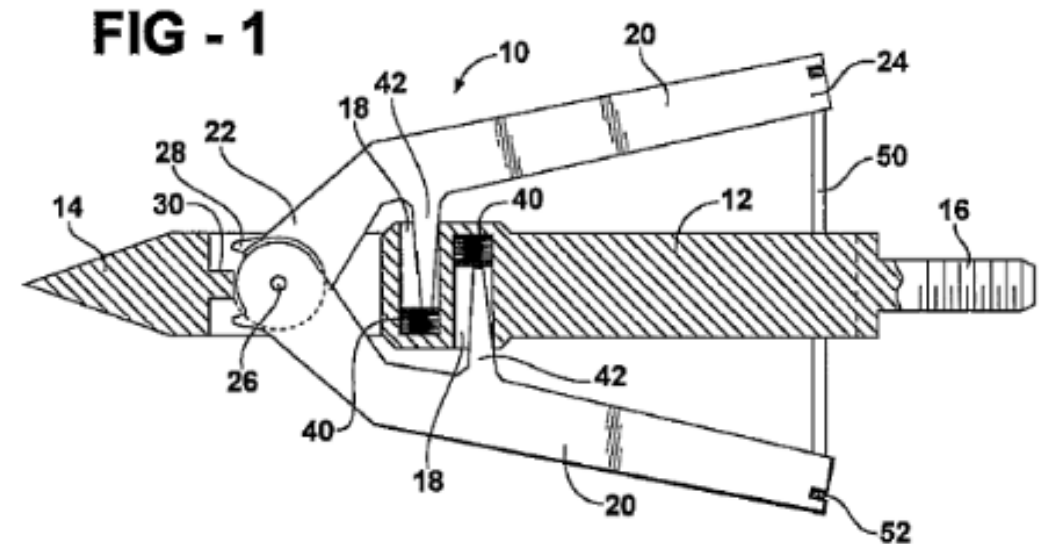
Title: ARROWHEAD HAVING COLLAPSIBLE AND OUTWARDLY BASED BLADES



Patent Overview

“In use, the arrow 60 is fired toward an animal. The blade members 20 are preferably **initially maintained in the retracted position as the arrow is in flight toward the animal.** The retracted position reduces the size of the broadhead thereby increasing accuracy. As the tip 14 and blade members 20 penetrate the skin of the animal the **blade members 20 remain in the retracted position until the retaining element 50 is removed by the penetration.**”

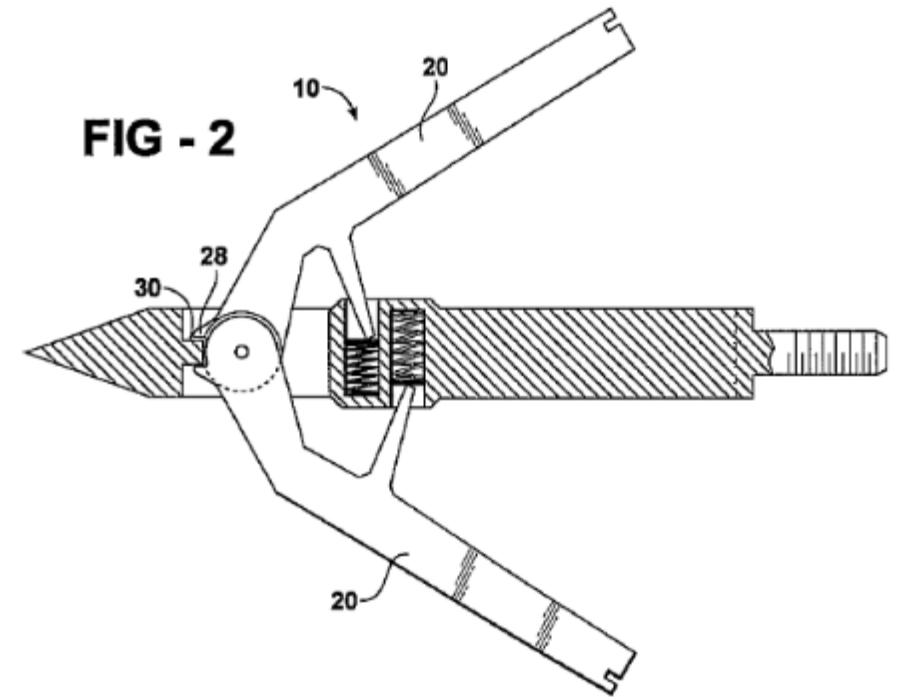
EX 1001 at 4:1-8 (emphasis added)



Patent Overview

"The blade members are then urged to the extended position due to the outward bias of the biasing members 40."

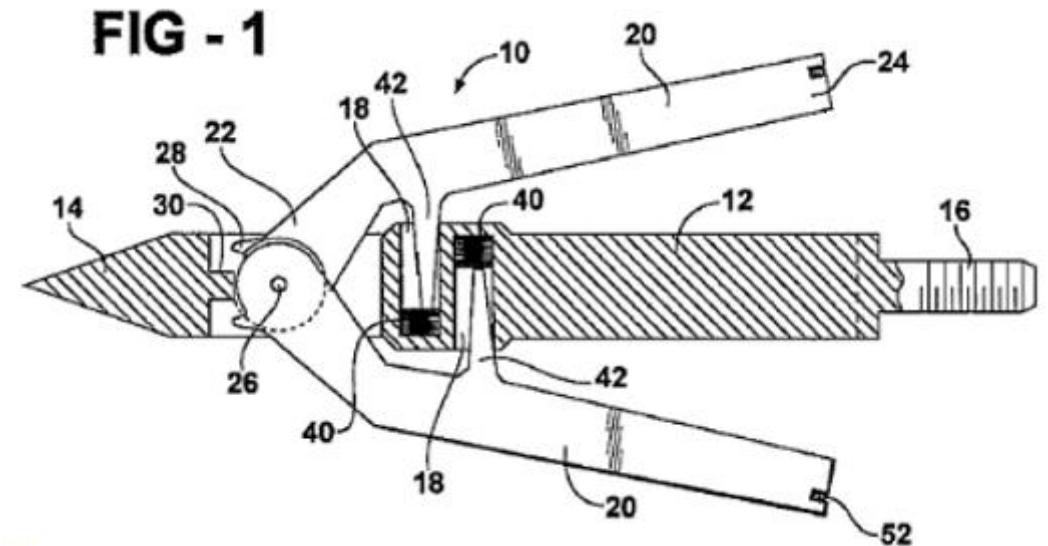
EX 1001 at 4:8-10



Patent Overview

"As the tip 14 and blade members 20 encounter a bone in the animal, such as a shoulder blade, the blade members 20 collapse toward the retracted position to allow the arrow to continue progress through the bone."

EX 1001 at 4:10-13

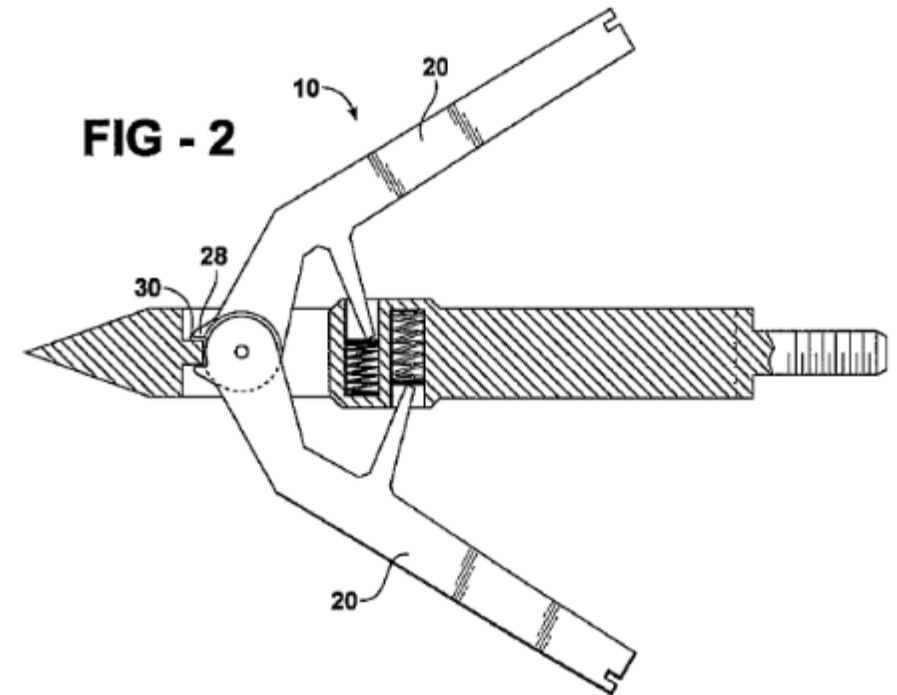


MODIFIED FIGURE
Retaining ring removed

Patent Overview

"As the ferrule 12 passes through the bone, the blade members 20 return to the extended position due to the force applied by the biasing member 40. **The biasing member 40 is provided with a predetermined spring force that allows the blade members 20 to move to the retracted position as the ferrule 12 passes through the bone and to return to the extended position after the ferrule 12 has passed through the bone.** Thus, the blade members 20 are in the extended position on either side of the bone to maximize the cutting surface of the arrowhead 10 through the soft flesh of the animal."

EX 1001 at 4:13-24 (emphasis added)



Patent Overview – Claim 1

1. A broadhead for an arrow having a shaft, the broadhead comprising:

a ferrule having a **rearward end** configured for attachment to the shaft and an **opposite forward end** with a ferrule body extending therebetween;

a **first blade member** having a **first end** pivotally interconnected with the ferrule body and an opposite **second end**, 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**;

a **second blade member** having a **first end** pivotally interconnected with the ferrule body and an opposite **second end**, 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**; and

at least one **biasing member biasing the first and second blade members towards the extended positions**, the biasing member being the only element operable to hold the blade members in the extended position.

EX 1001 at Claim 1

Patent Overview – Claim 11

11. A broadhead for an arrow having a shaft, the broadhead comprising:

a ferrule having a **rearward end** configured for attachment to the shaft and an **opposite forward end** with a ferrule body extending therebetween, the **forward end** of the ferrule **defining the forward tip of the arrow** and being fixed with respect to the ferrule body;

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

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

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

EX 1001 at Claim 11

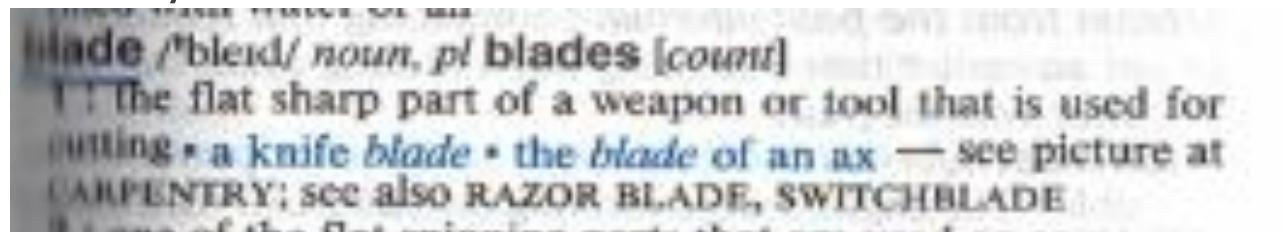
Patent Overview - Construction

“blade member” - a cutting edge or flat sharp part (EX 1008 at ¶ 53)

Specification

- “to increase the amount of flesh **cut** by the blade members” Ex. 1001 at 1:9-10 (emphasis added).
- “As the tip 14 and blade members 20 penetrate the skin of the animal . . .” Ex. 1001 at 4:5-6.
- “Thus, the blade members 20 are in the extended position on either side of the bone to maximize the **cutting surface** of the arrowhead 10 through the soft flesh of the animal.” Ex. 1001 at 4:21-24 (emphasis added).

Dictionary



Ex. 2006

Vandewater

- Petitioner asserts claims 11-12, 15, 17 are anticipated by Vandewater
- Reference discloses four embodiments
 - First two embodiments utilize singular blade
 - Third embodiment disclosed below:
 - “Optionally, a retaining mechanism . . . may also be utilized with arrowhead 210, such as a biasing element” EX1003 at 7:55-56

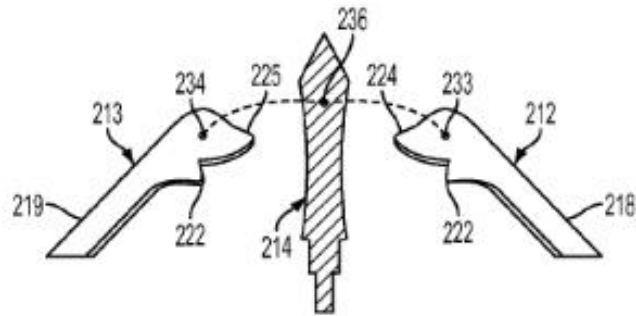


FIG. 9

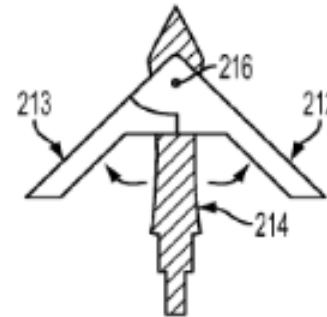


FIG. 11

Vandewater

- Fourth embodiment
 - Item 317 is a pivot limiter that locks blades in place

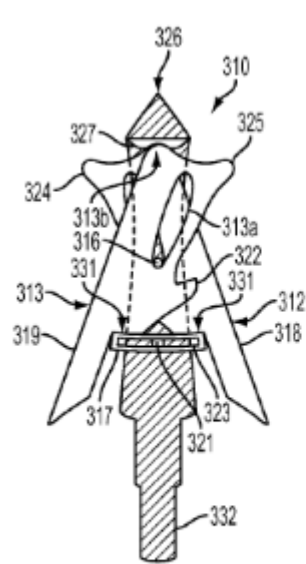


FIG. 17

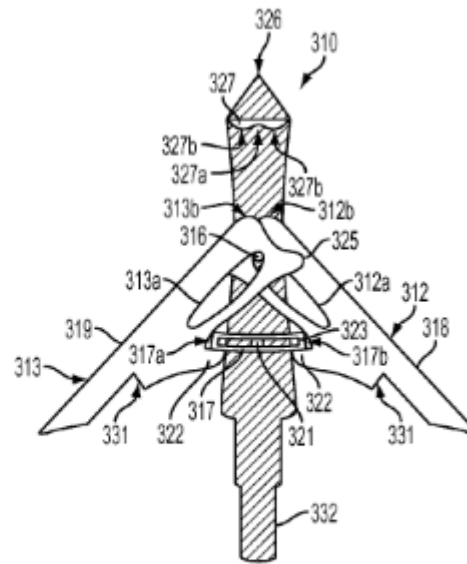


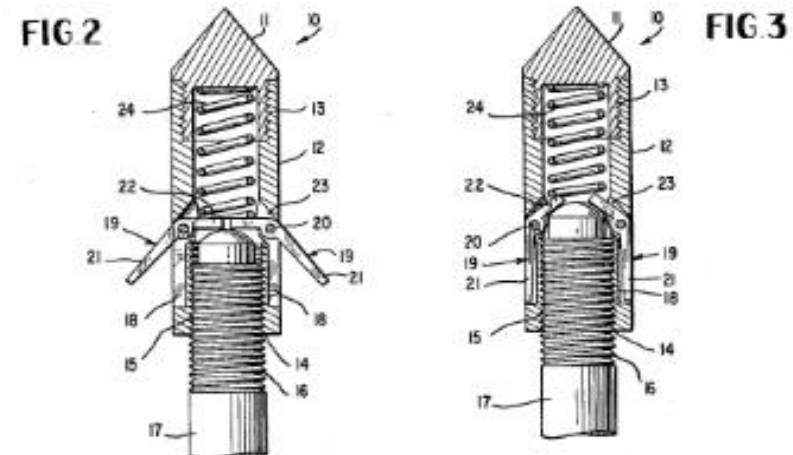
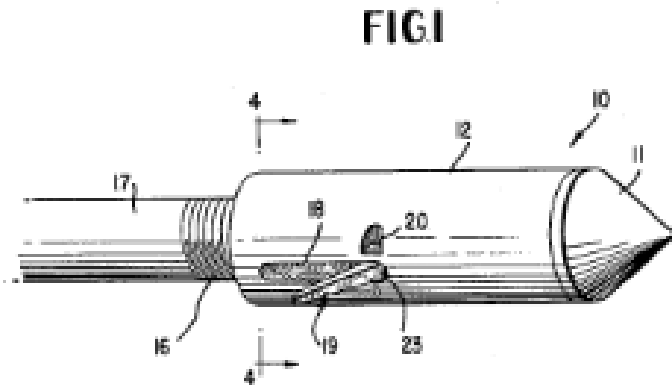
FIG. 18

Vandewater

- Fourth embodiment (cont)
 - Petition relied on fourth embodiment - Paper 1 at 36-48
 - Trial instituted based on Fourth Embodiment of Vandewater – Institution Decision, Paper 7
 - Patent Owner Response shows the Fourth Embodiment is not prior art – Patent Owner’s Response, Paper 12 at 28-29
 - Flanagan Patent filed – July 7, 2008 (EX 1001)
 - Vandewater filing date is March 16, 2009 (EX 1003); Provisional filed March 20, 2008 (Ex 1004)
 - Fourth embodiment is missing in the provisional application
 - Priority date for Fourth Embodiment is March 16, 2009 – after Flanagan was filed and thus not prior art
 - Petitioner’s Reply removed all reference to the Fourth Embodiment – Reply, Paper 17 at 16-24 (only referencing third embodiment)

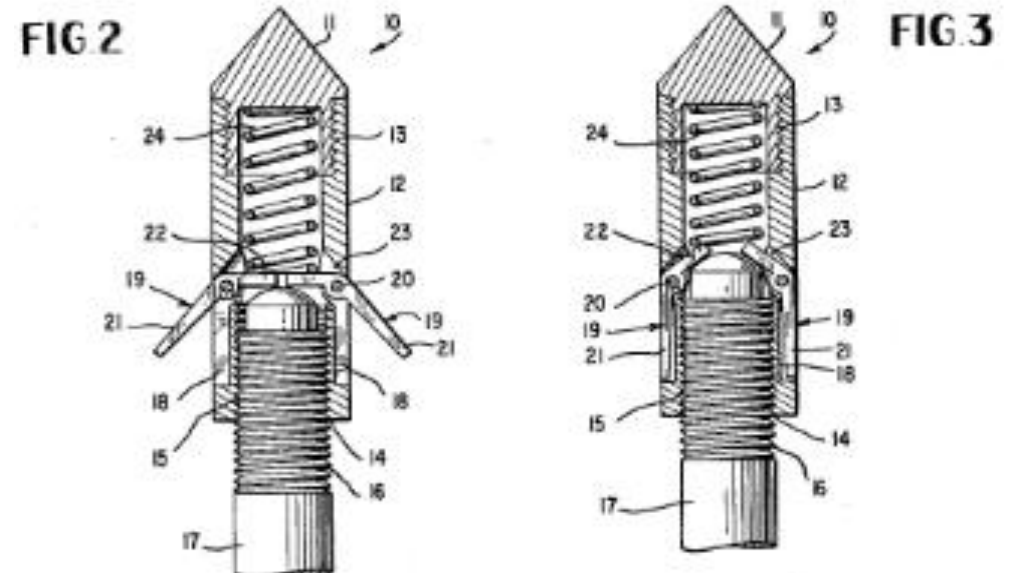
Lint

- Petitioner asserts claims 1-4, 7, 9, 11-12, 15, 17 are anticipated by Lint or alternatively obvious in view of Minisini or Krieger
- Lint: Hunting Arrowhead with Retractable Barbs (Ex 1002)
- “the initial impact on the outer portions 21 of the barbs 19 causes the barbs to be retracted into the slots 18 against the bias of the spring 24. **After the arrowhead 10 has completely penetrated the flesh of an animal, the spring 24 forces the barbs 19 outwardly so as to retain the arrowhead within the animal.**” EX 1002 at 2:64-70 (emphasis added)



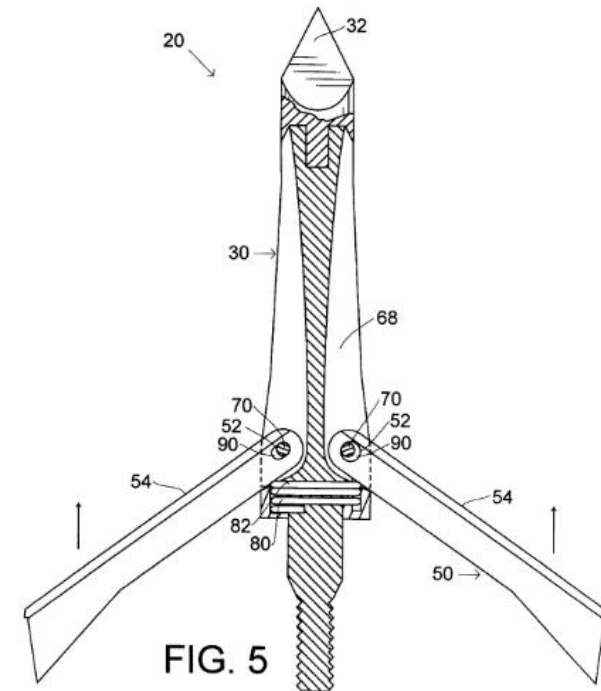
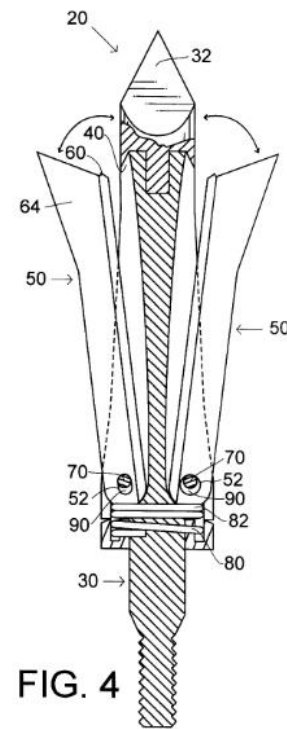
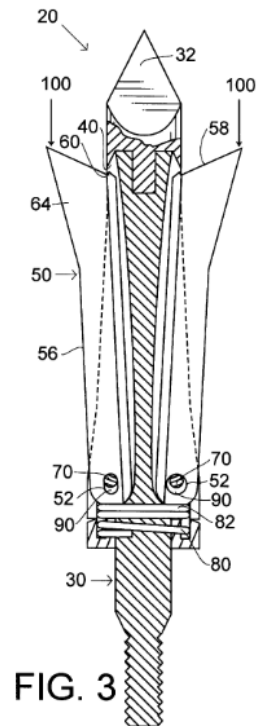
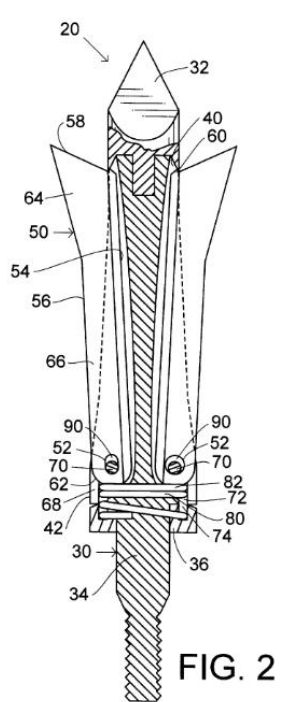
Lint

- Two elements are required to maintain barb in the extended position
 - Spring
 - Arrow shaft
- Is a barb a blade?
- Combination with Minisini and Krieger do not overcome missing elements of Lint to render claims obvious



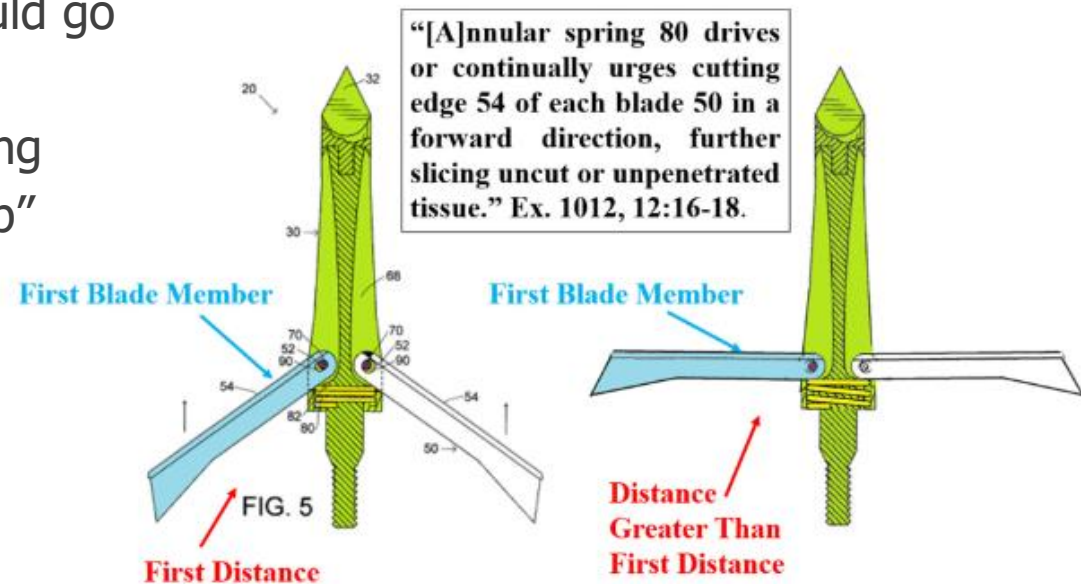
Liechty II

- Petitioner asserts claims 1-4, 9, 11-12, 17 are anticipated by Liechty II (Ex 1012)



Liechty II

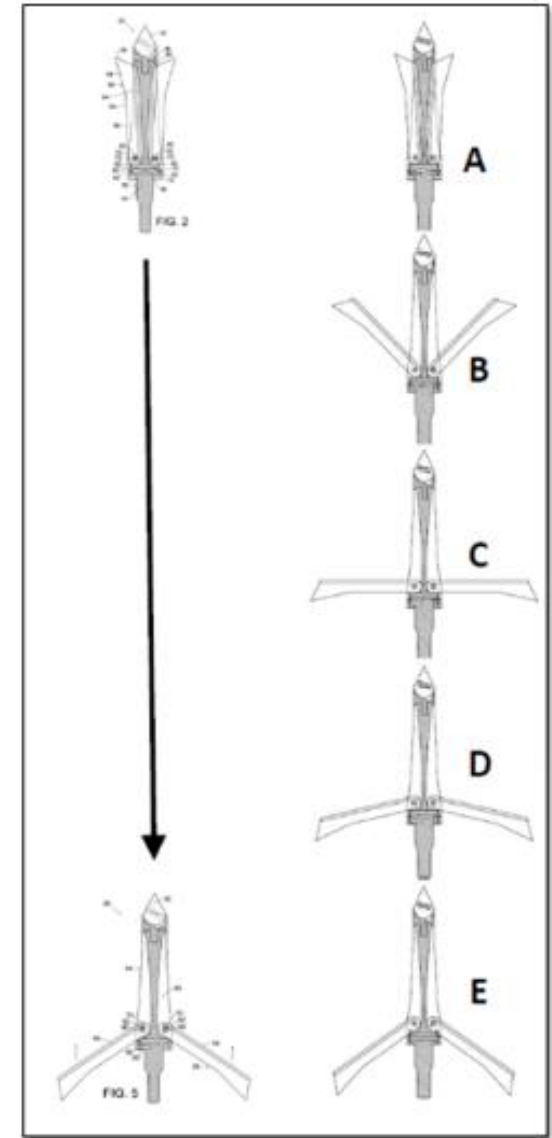
- Petitioner's expert created drawings from Liechty II that are not in the Liechty II reference
- Dr. Kuhn's created drawing changed substantially from the Petition to the Reply
- Dr. Kuhn acknowledged the manipulated drawing is "exaggerated" as he didn't know how far up the blades would go
Ex 2010 at 121:13-122:11
- When asked "could it be possible that [] spring could rotate those blades all the way back up" Dr. Kuhn responded "no."
EX2010 at 122:12-14



Petition, Paper 1 at 79 (Ex 1019 at ¶ 194)

Liechty II

- Dr. Kuhn's Reply declaration created a "new" drawing that substantially changed from the Petition
- The blades can now move all the way up according to Dr. Kuhn
- Liechty II fails to disclose an extended position as alleged by Dr. Kuhn
- Extended position is E



EX 1046 at ¶ 9

Hendricks

- Petitioner asserts claims 11-12, 15, 17 are obvious in view of Hendricks (Ex 1011)
- Barb v. Blade
- *In re Abrahamsen*

