

In the Matter Of:

Bowmar Archery v Veterans Innovative

Todd Kuhn PH.D.

September 06, 2024



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2
3 UNITED STATES PATENT AND TRADEMARK OFFICE
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6 BEFORE THE PATENT TRIAL AND APPEAL BOARD
7

8 BOWMAR ARCHERY, LLC, Petitioner,

9 v.

10 VETERANS INNOVATIVE PRODUCTS, LLC, Patent Owner.
11

12 Patent No. 8,043,177
13 Filing Date: July 7, 2008
Issue Date: October 25, 2011

14 Title: ARROWHEAD HAVING COLLAPSIBLE AND OUTWARDLY
15 BIASED BLADES

16 Inter Partes Review No.: IPR2024-00401

17 PATENT OWNERS NOTICE OF DEPOSITION
18 OF TODD KUHN, PH.D. PURSUANT TO 37 C.F.R. 42.53

19 DATE TAKEN: Friday, September 6, 2024

20 TIME: 9:00 a.m. CST to 1:57 p.m. CST

21 PLACE: ALL PARTIES REMOTE

22 Stenographically Reported By:

23 Lisa M. Sparling, RPR, FPR,
24 Notary Public, State of Florida at Large
25

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1 E X A M I N A T I O N
2 Witness Name Page Line

3 TODD A. KUHN, PHD

4 Direct By ATTORNEY MCKINNIE: 4 6

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9 E X H I B I T S

10 EXHIBIT DESCRIPTION PAGE LINE

11 Exhibit 1 Bowmar Archery Exhibit 1019 - Kuhn ... 5 16
12 Report

13 Exhibit 2 Kuhn Letter Infringement Threat 41 14

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16 Exhibit 5 Exhibit 1001 - Flanagan patent 66 20

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19 Exhibit 8 Exhibit 1006 to the IPR petition 93 14

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25

1 Thereupon,

2 TODD A. KUHN, PHD,

3 was called as a witness, and after having been first duly

4 sworn, was examined and testified as follows:

5 THE WITNESS: I do.

6 DIRECT EXAMINATION

7 BY ATTORNEY MCKINNIE:

8 Q. Morning, Dr. Kuhn. Thank you for joining us today.

9 And can you just identify your name -- full name for
10 the record, please?

11 A. Todd, T-O-D-D, Alan, A-L-A-N, Kuhn, K-u-h-n.

12 Q. Thank you. I just -- My name is Jason McKinnie,
13 and I haven't ever met you before. I'm an attorney for Matt
14 Futterer and Veteran's Innovative Products. I'm representing
15 the patent owner in this case, just so you're aware of my
16 position; I'm sure you are. But I have a couple of ground
17 rules that I'd just like to mention for you here. I would
18 like it if we could not talk over each other. So, if I'm
19 asking you a question, please give me the courtesy to let me
20 finish the question before you answer, and I will do my best
21 to let you finish your answer before I ask you another
22 question. Do I have your agreement for that?

23 A. Yes, sir.

24 Q. Have you taken any medications today that would
25 impact your ability to recall information?

1 A. I have not.

2 Q. How did you prepare for today?

3 A. Reviewing the prior art, the -- my declaration,
4 patent office's response to your response to my declaration.

5 Q. If I refer to, you know, the Flanagan patent or the
6 Lint patent, for example, would you understand what I'm
7 referring to?

8 A. I will.

9 Q. And if you do need any clarification when I'm
10 referring to a reference or an exhibit and if you have any
11 confusion over that, please let's try to avoid any delay, and
12 if you can just, you know, ask for clarification if you have
13 any concerns.

14 Okay. I want to introduce Exhibit 1 to this
15 deposition, and it is -- Let me share the screen.

16 (Exhibit No. 1 was marked for identification.)

17 BY ATTORNEY MCKINNIE:

18 Q. Okay. Dr. Kuhn, do you see the screen that I'm
19 sharing?

20 A. I do. It's showing up pretty small.

21 Q. Okay. And do you recognize this document?

22 A. I do.

23 Q. And what is this document?

24 A. My declaration.

25 Q. I'll represent to -- to the Board that this is

1 Bowmar Archery Exhibit 1019 to the Inter Partes Petition filed
2 by Bowmar Archery. And you stated this is your report. Does
3 197 pages seem accurate to be the full amount of the report
4 with appendix?

5 A. Mine is 168 pages, I think.

6 Q. Do you have that with you here today?

7 A. I do.

8 Q. Do you have any other documents with you?

9 A. I do.

10 Q. And what do you have with you?

11 A. I have my declaration, the patent office's response
12 to your declaration and the prior art and ancillary prior art,
13 also.

14 Q. Is it all the prior art that you've referenced in
15 your declaration?

16 A. It is not.

17 Q. Do you have any notes from your attorney as part of
18 the documents that you have?

19 A. I do not.

20 Q. Do you have any notes written on any of the
21 documents in front of you that were not typed?

22 A. I do not.

23 Q. Okay. On your declaration, if I go to page 168, it
24 says "executed January 8, 2024." Is this your signature?

25 A. It is.

1 Q. And we have an Appendix A to your report. Does this
2 look accurate to something that you produced?

3 A. Yes. It does.

4 Q. And what is this Exhibit A, or Appendix A? Excuse
5 me.

6 A. My CV.

7 Q. All right. I'd like to start with your educational
8 background. According to your declaration, you went to
9 University of Central Florida and obtained a bachelor of arts
10 and a master of arts in audiology; is that accurate?

11 A. It is.

12 Q. Can you tell me just briefly what is audiology?

13 A. It's the science of sound, the physics of sound as
14 it's related to the human condition, hearing. Physiology and
15 anatomy. Acoustics.

16 Q. What would you do with an audiology degree?

17 A. You would work as a licensed audiologist in a
18 hospital or referred ENT, ear, nose, and throat doctor,
19 diagnosing hearing conditions or diseases of the hearing -- of
20 hearing.

21 Q. Did you ever -- when did you graduate with those
22 degrees?

23 A. My undergraduate degree was in 1988, and my graduate
24 degree was in 1990. To add to that, my -- you'd also practice
25 what's called hearing conservation which you go in industrial

1 setting and you would prescribe noise limiting practices to
2 limit the exposure of noise to workers in a work environment
3 vis a vis OSHA requirements.

4 **Q. Did you work -- After you graduated 1988 with your**
5 **degree, did you work or did you go straight into grad school?**

6 A. I went into graduate school.

7 **Q. What did you do after 1990?**

8 A. I began work at the space center, Kennedy Space
9 Center, here in Florida.

10 **Q. What were you doing there?**

11 A. I was a statistician/research engineer.

12 **Q. Were you using your audiology degrees?**

13 A. I was not. I was using my background in statistics
14 or trend analysis.

15 (Certified Stenographer asks for clarification.)

16 BY ATTORNEY MCKINNIE:

17 **Q. How did you get a background in statistics?**

18 A. In undergraduate, graduate school.

19 **Q. Was that a specific focus, or is that just part of**
20 **the audiology degrees?**

21 A. It was a requirement for my graduate degree and
22 undergraduate -- parametric and nonparametric statistics.

23 **Q. Is it accurate -- fair to say that you were using**
24 **kind of a portion of your audiology degree with your work with**
25 **the space center?**

1 A. That's fair to say.

2 Q. And when did you -- So, how long did you work at
3 the space center?

4 A. From 1990 to 2005, thereabouts. I did -- I do need
5 to add that I used some of my audiology degree because I
6 worked as a -- in the Lessons -- the NASA Lessons Learned
7 program, which I trended mishap data and whenever there was a
8 hearing loss case, I would use my audiology degree to go out
9 and research what was going on and provide corrective action.
10 That was the hearing conservation portion of the audiology
11 degree.

12 Q. A hearing loss case is that, like, for workers at
13 the space center?

14 A. Workers' Comp for both federal employees and civil
15 servants and contractor personnel as well, Air Force
16 personnel.

17 Q. When did you attend Colombia Southern University?

18 A. I graduated in 1996.

19 Q. What years were you there?

20 A. 1995 to 1996.

21 Q. Was this in-person or remote?

22 A. Distance learning.

23 Q. Distance learning. I guess that's the old term,
24 right?

25 A. Yeah. I don't know what they call it now. I see

1 all the commercials on TV with all different kinds of names
2 for it.

3 Q. Where is Colombia Southern University?

4 A. It's in Alabama.

5 Q. Says here you got a PhD in environmental
6 engineering. Can you tell me kind of what is environmental
7 engineering?

8 A. My course of study was -- after my -- After I left
9 my first job at the space center, I went to my second one
10 which was Bionetic -- the Bionetics Corporation. I did
11 hazardous waste and biomedical waste CERCLA sites, Superfund
12 site work, which was environmental remediation work, on the
13 Kennedy Space Center in the Cape Canaveral Air Force Station.
14 So, my concentration of study with my environmental
15 engineering degree was hazardous waste, environmental
16 remediation.

17 Q. So, I may have the timeline off a little bit: You
18 worked with the space center through 2005 and that was
19 continually?

20 A. Yes, sir.

21 Q. But you just changed job description -- job
22 functions?

23 A. Yes. I went from one contractor to another to
24 another contractor.

25 Q. Were you -- When you say a contractor, does that

1 mean you were employed by the contractor then, not the space
2 center?

3 A. No. On the -- at a NASA center you have NASA civil
4 servant employees and then you have federal contractors which
5 are contracts let by NASA to private corporations. The
6 Bionetics Corporation was a biomedical laboratory services
7 contractor.

8 Q. And so you worked for them, the private contractor?

9 A. I did.

10 Q. Okay. So, your paycheck came from the private
11 corporation, not from the federal government?

12 A. It did.

13 Q. And was that the case throughout this time from 1990
14 through 2005?

15 A. It was. I changed to -- the contract was re -- the
16 space center, any federal contract, they rebid it every --
17 there's a certain set criteria, number of years, that the
18 contract is let for; they're three, five, or seven, typically.
19 After the contract was rebid when I was with Bionetics,
20 Dynamic Environmental Services won the contract, so I
21 transferred from Bionetics to Dynamic Environmental Services.

22 Q. Was it this transfer to these other contractor jobs
23 the reason for why you sought an environmental engineering
24 PhD?

25 A. I worked with a number of NASA scientists, PhD

1 scientists then in the environmental field, and I felt that
2 I -- I was kind of steered into the -- into the field by the
3 nature of my work. And I felt that I needed to get more
4 education to be qualified to at least discuss different
5 subjects and topics with them on projects.

6 **Q. Did you have a thesis for your doctoral degree?**

7 A. I had a dissertation.

8 **Q. Dissertation. And what was your dissertation on?**

9 A. It's over my bookshelf. You want me to get it and
10 read you the title of it?

11 **Q. If you need to -- generally speaking, can you tell**
12 **me what it was?**

13 A. I think it would be better if I read it to you.

14 **Q. That's fine. Just the title, correct?**

15 A. Yes, sir.

16 **Q. Not the thesis?**

17 A. Right. No. I'm not going to read the whole thing.
18 This is why I wasn't going to give it to you off the top of my
19 head: "The Macro-Economic Efficacy and Feasibility of
20 Recyclable Commodities, Storage Facilities, in a Price Driven
21 Global Socioeconomic System."

22 **Q. Is there a layman's definition of that?**

23 A. My dissertation was I put forth the premise of how
24 to clean up the environment by -- by initiating a global
25 recycling commodities market, much like the stock market, for

1 commodities at the time which weren't being recycled: Ferrous
2 metals, non-ferrous metals, C&D, which is construction and
3 demolition debris.

4 **Q. Was your PhD program, was that full-time?**

5 A. I did it while I was in -- while I was working, but
6 yes, I was taking it full-time.

7 **Q. What type of courses were you taking for**
8 **environmental engineering?**

9 A. I can -- environmental law. Environmental law,
10 environmental remediation contracting, aquatic kinetics, the
11 environmental fate of hazardous chemicals, real estate law
12 with regard to environmental engineering. Those are the ones
13 I can remember off the top of my head, and I probably did not
14 give you the exact title of the course.

15 **Q. That's fine. Did you take mechanical engineering?**

16 A. I did not.

17 **Q. Did you take any classes regarding aerospace**
18 **engineering?**

19 A. I did not.

20 **Q. Take any course work regarding aerodynamics?**

21 A. I did not.

22 **Q. Okay. So, you worked for the private contractors**
23 **with the the space center until 2005. What did you do after**
24 **that?**

25 A. I moved to Maryland to open an archery broadhead

1 business.

2 Q. What was the name of that company?

3 A. 2XJ Enterprises, Inc.

4 Q. Did you open that company by yourself?

5 A. I did not. I had a partner.

6 Q. Who was that?

7 A. Scott Mackie, M-a-c-k-i-e.

8 Q. How did you know Scott Mackie?

9 A. He and I both played for the Cleveland Indians.

10 Q. That is a job we did not go over. So, I guess you
11 were a professional baseball player?

12 A. I was.

13 Q. And when was that?

14 A. In 1983 to 1987. 1983 to '87, yeah.

15 Q. So you started college at University of Central
16 Florida before your career ended?

17 A. Did not. I started my college career at Southwest
18 Baptist University in Bolivar, Missouri.

19 Q. Is that while you were playing or before --

20 A. That's before. That was in 1979 or 1980. One way
21 or another.

22 Q. Okay. So, when you went to the University of
23 Central Florida, you already had some coursework done that
24 transferred over --

25 A. Quite a bit -- had quite a bit done. I had attended

1 Southwest Baptist University on a baseball scholarship and
2 then I transferred to the University of Montevallo in
3 Montevallo, Alabama, on a baseball scholarship. And then I
4 went to New Mexico State University. And then -- and then I
5 signed with the San Francisco Giants in 1984.

6 Q. Okay. So, you were a undergraduate baseball player,
7 got coursework, got credit; what were your degree disciplines
8 when you were at those other schools?

9 A. Communicative disorders.

10 Q. Would you say that's related to audiology?

11 A. It is. Communicative disorders -- there's two
12 disciplines. There's speech pathology and audiology. So, you
13 take a course track for either speech pathology or audiology.
14 Typically, the undergraduate work is split between speech
15 pathology with ancillary courses in audiology. And then when
16 you do your masters, it's -- the concentration is on one or
17 the other: Speech pathology or audiology.

18 Q. That makes sense.

19 So, you moved to Maryland in 2005 to start 2XJ
20 Enterprises?

21 ATTORNEY SHULL: Object to the form of the question.

22 BY ATTORNEY MCKINNIE:

23 Q. You can answer if you understood what I was saying.

24 A. No. It was already -- it was already -- it was
25 already started. My business partner had already started it.

1 Q. When did he start it?

2 A. I want to say 2003.

3 Q. Did he start it by himself in 2003?

4 A. No.

5 Q. He start it with you in 2003?

6 A. We did.

7 Q. Would you consider it a secondary job to your
8 private contractor job at that time in 2003 --

9 A. That would be one function --

10 ATTORNEY SHULL: -- object to the form of the
11 question.

12 CERTIFIED STENOGRAPHER: There was cross-talk and I
13 didn't hear the entire answer.

14 (Certified Stenographer asks for clarification.)

15 ATTORNEY MCKINNIE: Let me just start it again.

16 BY ATTORNEY MCKINNIE:

17 Q. When you moved in 2005 to Maryland, was that so you
18 could focus your full-time efforts on 2XJ Enterprises?

19 A. Yes.

20 Q. Were you and Scott Mackie equal co-owners?

21 A. We were.

22 Q. In your declaration, you state you founded and
23 operated two archery accessory companies: Mid-Atlantic
24 Archery Products and 2XJ Enterprises from approximately 2002
25 to 2012. I believe you've testified, then, that 2XJ

1 Enterprises started in 2003. When did Mid-Atlantic Archery
2 Products start?

3 A. Well, it would have been 2002 if that's what I put
4 in there because that's -- I don't have the exact date in
5 front of me, but if I said 2002, I assume that's when we were
6 incorporated. 2XJ was a -- was the company until we went from
7 broadheads. And then I invented a design -- invented and
8 designed an archery arrow rest, an automatic archery arrow
9 rest.

10 (Certified Stenographer asks for clarification.)

11 THE WITNESS: Arrow rest.

12 BY ATTORNEY SHULL:

13 Q. What is an arrow rest?

14 A. It's a part of an archery bow that the arrow rests
15 on -- I hate to be -- you put the -- the end of the arrow on
16 the string, and then then the other end of the arrow -- the
17 forward end of the arrow lays on the arrow rest.

18 Q. And I'm a little confused. Which company were you
19 working with when you invented that?

20 A. We changed the company to Mid-Atlantic Archery
21 Products to remove any confusion about who the -- who the
22 products were built by, the broadheads and the arrow rest.
23 And then we branched off into other accessories with
24 Mid-Atlantic Archery Products.

25 Q. So, would you characterize Mid-Atlantic Archery

1 Products as being products for bows; whereas, 2XJ Enterprises
2 would be arrowheads?

3 A. I would characterize them as both archery products.
4 bowhunting products.

5 Q. Was the ownership of Mid-Atlantic Archery the same
6 as the ownership of 2XJ?

7 A. It was.

8 Q. So, for lack of a better word, you had some products
9 lines that you were selling through Mid-Atlantic Archery
10 Products and different product lines being sold through 2XJ
11 Enterprises?

12 A. Initially. Eventually, 2XJ was rolled into
13 Mid-Atlantic.

14 Q. And when did that roll-in occur?

15 A. I don't know the exact date.

16 Q. Why were they combined?

17 A. Because an accountant told us to combine them.

18 Q. Did one of these companies operate under the name
19 Crimson Talon?

20 A. No.

21 Q. What is the term -- is Crimson Talon one of the
22 products that one of those companies told?

23 A. Crimson Talon was the broadhead -- excuse me -- was
24 the broadhead line, the line of broadheads.

25 Q. And who is -- who sold that line of broadheads?

1 A. 2XJ, initially. And then after the two companies
2 were rolled together, Mid-Atlantic Archery.

3 **Q. Did you -- We'll discuss it later, but you**
4 **indicated that you developed 19 -- or invented subject matter**
5 **that became -- ultimately became 19 issued patents. Did you**
6 **own all 19 of those patents individually?**

7 A. I was the named inventor, and then the broadhead
8 patents were assigned to 2XJ or Mid-Atlantic; I don't remember
9 which one of the two.

10 **Q. Were you compensated for those assignments?**

11 A. You mean was I paid extra money, or ... I don't
12 understand your question.

13 **Q. Did 2XJ have to purchase the patents from you?**

14 A. No. I -- I assigned them.

15 **Q. Were you working for 2XJ when you invented these --**
16 **the technology that ultimately had become these patents?**

17 A. I wasn't -- The first patent, as best of my
18 recollection, was when 2XJ was incorporated, but I didn't
19 assign it after it was issued. I didn't assign it for some
20 time after. And I don't know the years.

21 **Q. So just to clarify, the issuance on at least some of**
22 **these broadhead patents went to you directly and then later**
23 **you assigned them to 2XJ?**

24 A. They all went to me, and then a -- and then I issued
25 them as far as -- as far as I can remember. I was the named

1 inventor. There wasn't -- there weren't any co-inventors.

2 Q. Did Scott Mackie do any inventing as well?

3 A. None.

4 Q. Were there any other owners brought in to either
5 Mid-Atlantic or 2XJ from 2002 to 2012 other than you and Scott
6 Mackie?

7 A. There wasn't.

8 Q. And according to your declaration, it says that you
9 founded and operated them until 2012. What happened in 2012?

10 A. We had a -- Mr. Mackie and myself had a falling out
11 over the operation of the financials of the company, and I
12 left the company and -- and I left the company.

13 Q. What happened to your ownership share?

14 A. I assume it was dissolved.

15 Q. So, Scott Mackie never bought you out?

16 A. No. The company went bankrupt. And all the assets
17 were assumed by the bank.

18 Q. When did the company go bankrupt?

19 A. I want to say in 2013 or so.

20 Q. After you left?

21 A. After I left.

22 Q. Are there still Crimson Talon broadheads being sold
23 on the market?

24 A. I think somebody sells -- I think another company
25 usurped the name and is manufacturing them and selling them.

1 I saw them -- a folding table booth at one of the ATA shows --
2 Archery Trade Association shows several years after the
3 company dissolved.

4 **Q. To your knowledge, they are not related to the 2XJ**
5 **Enterprises?**

6 A. My understanding is they're -- they were -- This is
7 my understanding: Is that it was a couple guys that knew that
8 the company went under and that they were fans of the
9 broadheads, and they decided that they were going to start
10 manufacturing and try to sell them.

11 **Q. So, did they -- To your knowledge, did they**
12 **manufacture this -- the product using the intellectual**
13 **property that you developed?**

14 A. It's a -- They were direct copies of the Crimson
15 Talon broadhead that I designed.

16 **Q. Okay. Was your Crimson Talon broadhead protected by**
17 **any of the patents that you owned?**

18 A. It was.

19 **Q. So, who owned the patents at that time and after**
20 **2013?**

21 A. Well, 2XJ or Mid-Atlantic. 2XJ or Mid-Atlantic.

22 **Q. And then what happened at the bankruptcy? Who**
23 **owned the --**

24 A. I was trying -- I was trying to think if the -- if
25 the bank took possession of the intellectual property which I

1 don't know.

2 Q. Do you know if those patents are still active or
3 not?

4 A. No, I don't. I think they've expired.

5 Q. Did you receive any royalties for any sales of
6 products after 2012?

7 A. No.

8 Q. Did you ever receive royalties for sales on products
9 prior to 2012?

10 A. Royalties? No.

11 Q. Did you just share in the profits of the company
12 with Mr. Mackie?

13 A. I did.

14 Q. Were there profits?

15 A. That's arguable. That's what led to the 2012
16 departure.

17 Q. Did you have any other paid income from 2005 to
18 2012?

19 A. Yeah. I do instruction manuals for the hunting
20 industry. Mostly tree stand manufacturers.

21 Q. And do you do that through a company or just through
22 you individually?

23 A. Myself, individually.

24 Q. And you said that's for tree stands?

25 A. Yes. The majority of.

1 **Q. Do you make any instruction manuals for broadheads**
2 **or bowhunting?**

3 A. I've done instruction manuals for crossbows for
4 safety harnesses that are ancillary to tree stand use.

5 **Q. Would it matter in your instruction manuals --**
6 **Regarding crossbows, would it matter if there was a broadhead**
7 **or, like, a fixed blade or mechanical insert? Would that have**
8 **any bearing on your instruction manual on the crossbow?**

9 A. No, because it was an instruction use manual for the
10 crossbow. It wouldn't include broadheads.

11 **Q. Were you in Maryland, then, through 2012?**

12 A. I was.

13 **Q. And then where did you live after 2012?**

14 A. Mississippi.

15 **Q. What did you do in Mississippi?**

16 A. I worked at the Stennis, S-t-e-n-n-i-s, Space Center
17 and at the Michoud, M-i-c-h-o-u-d. It's in Louisiana. It's
18 another NASA center.

19 **Q. And what did you do at those locations?**

20 A. I was the safety manager.

21 **Q. And how long did you work in Mississippi at those**
22 **jobs approximately?**

23 A. A year and a half or two.

24 **Q. For each or total?**

25 A. Total.

1 Q. And then what did you do -- So, that puts you
2 around 2014. What did you do then?

3 A. 2014? I guess I was semi-retired. I still did
4 consulting work for instruction manuals.

5 Q. So, since 2014 other than the instruction manuals,
6 did you receive any other paid income?

7 A. Since 2014?

8 Q. Correct.

9 A. Yes. Subsequently, I moved to Florida in 2017 and
10 started as editor of Game & Fish Magazine from 2017 to 2023,
11 full-time.

12 Q. And what was the magazine?

13 A. Game, G-a-m-e, & -- ampersand -- Fish.

14 Q. So, you were only semi-retired for three years then?

15 A. Yeah.

16 Q. And then in 2023 did you leave that job?

17 A. I did.

18 Q. And are you now fully retired, or what are you doing
19 now?

20 A. I'm still doing some consulting work, outdoor
21 consulting work.

22 Q. On the instruction manuals?

23 A. Yes.

24 Q. How did you get into bowhunting?

25 A. When I -- You want the long version?

1 **Q. Medium version.**

2 A. When I was probably four or five, my brother got a
3 plastic bow and arrow set for his birthday, and I used it more
4 than he did. And then when I turned five or six, I got -- I
5 was -- I was given a Fred Bear Osage orange long bow and some
6 arrows, and I started shooting things around the house,
7 animals. And from there, just kept pursuing it.

8 **Q. That was 1960s? 1970s? When would that be?**

9 A. 1965, '66.

10 **Q. When did you start hunting deer or other animals,**
11 **bowhunting?**

12 A. 1990. You said white-tail, right?

13 **Q. When did you start shooting animals with a**
14 **broadhead?**

15 A. Probably 1970.

16 **Q. And what were you shooting in 1970?**

17 A. Coons.

18 **Q. Would it be fair to say that you've been using bow**
19 **and arrow and using a broadhead since roughly continuously**
20 **since 1970, or were there spurts where you would go in and out**
21 **of the hobby?**

22 A. Oh, I think like any adolescent or teenager there
23 were times when I did it more and sometimes where I did it
24 less, depending on the opportunities, depending on what my
25 friends were doing, our interests at the time.

1 Q. And then as a young adult when you were playing
2 baseball, did you still go bowhunting?

3 A. I did.

4 Q. And is that where Scott Mackie -- did you introduce
5 it to Scott Mackie at that time?

6 A. We were the Cleveland Indians, and he mentioned that
7 he bow hunted, and that was kind of our introduction to each
8 other.

9 Q. What type of arrows did you use, you know, in the
10 1970s and 1980s?

11 A. For the most part, wooden. Some fiberglass.

12 Q. What about the arrowhead?

13 A. Mostly an -- My next-door neighbor in my
14 neighborhood gave me the -- the heads that I used. He had
15 them in a fishing tackle box, and I -- they were metal
16 broadheads. I don't know the brand or the --

17 Q. Were they fixed blade?

18 A. They were.

19 Q. When did you start to try to design your own
20 broadhead?

21 A. Probably 1990 or '91.

22 Q. And why did you do that?

23 A. I was hunting white-tail and the performance of the
24 ones that I had were not good, so I thought I could build a
25 better design.

1 Q. What type of broadhead were you using at that time?

2 A. Various ones, but a Muzzy for the most part.

3 Q. Were you using mechanical broadheads?

4 A. Fixed blade.

5 Q. You said the performance was not good. What were
6 you trying to improve on?

7 A. Their flight.

8 Q. Trying to make the arrow go faster?

9 A. No. Trying to make it shoot straighter.

10 Q. At this time were you using a compound bow or the
11 traditional bow?

12 A. A combination of longbows or a compound.

13 Q. Is it accurate to say a compound bow gets more
14 velocity on the arrow?

15 A. It is. Generally speaking.

16 Q. What aspects of the broadhead were you manipulating
17 to try and improve them in 1990, '91?

18 ATTORNEY SHULL: Object to the form of the question.

19 THE WITNESS: I'm not sure what I'm supposed to do
20 when you guys do that.

21 ATTORNEY MCKINNIE: You can answer still answer the
22 question.

23 THE WITNESS: Would you repeat it?

24 CERTIFIED STENOGRAPHER: I can read it back if you'd
25 like.

1 ATTORNEY MCKINNIE: Thank you.

2 (The previous question was read out loud by the
3 certified stenographer: Question: "What aspects of the
4 broadhead were you manipulating to try and improve them
5 in 1990, '91?")

6 ATTORNEY SHULL: Same objection. Object to the form
7 of the question.

8 THE WITNESS: I -- do I answer that?

9 ATTORNEY MCKINNIE: Yes. You can still answer the
10 question.

11 A. The blades -- the -- kind of everything.

12 BY ATTORNEY MCKINNIE:

13 **Q. What were you changing on the blades?**

14 A. The geometry.

15 **Q. How would you change them?**

16 A. Well, I had a bin full of parts and of broadheads,
17 and I would interswap the parts and make some parts from other
18 broadheads fit other broadheads that I thought had better
19 aerodynamics or... originally.

20 **Q. Did you ultimately create a new broadhead that you**
21 **felt performed better in the 1990 to 1991 time frame?**

22 A. No.

23 **Q. When did you -- Let me rephrase.**

24 **Have you been redesigning broadhead blades**
25 **continuously then since 1990 to -- that 1990 to 1991 time**

1 period?

2 A. Does that include today? Up until now?

3 Q. Yes. That would be up until now.

4 A. No. I'm not -- I'm not designing broadheads
5 currently.

6 Q. When did you stop designing broadheads?

7 A. A rough estimate probably 2019, 2020.

8 Q. So, from around 1990 to about 2019, have you been
9 continuously modifying and designing broadheads?

10 A. Not continuously, no.

11 Q. Do you recall when you first made a broadhead that
12 you believed was an improvement over what you had used in the
13 past?

14 A. Originally, I made a lot of them that I thought was
15 an improvement, but they didn't turn out to be.

16 Q. But can you identify one modification that you had
17 sort of a eureka moment that this actually worked?

18 A. The year?

19 Q. An approximate time.

20 A. 2000.

21 Q. So, from 1990 to 2000, had you tried numerous times
22 to improve a broadhead?

23 A. I did.

24 Q. And what was that success in 2000?

25 A. I added airfoils to the broadhead blades.

1 **Q. What did those airfoils do?**

2 A. When the arrow shot, the laminar flow, the air over
3 the broadhead, induces rotational spin so it spin stabilizes
4 the arrow in the front.

5 **Q. Did you file for a patent application or for a**
6 **patent protection on that?**

7 A. I did.

8 **Q. Did it issue?**

9 A. It did.

10 **Q. Did you make a commercial version of that product?**

11 A. No. Not of the prototype. There wasn't a version
12 of it, no.

13 **Q. Well, was there ever a commercial version using that**
14 **patent technology?**

15 A. Yes. Yeah. I thought you meant that prototype that
16 I made, if we made a broadhead that looked like that. Yes.
17 There was a commercial product from that patent.

18 **Q. Who sold that commercial product?**

19 A. 2XJ Enterprises.

20 **Q. Did you ever sell a broadhead prior to 2002 time**
21 **period?**

22 A. Did I ever sell a broadhead? No.

23 **Q. Was your technology for broadheads ever used in a**
24 **commercial product prior to 2002?**

25 A. No.

1 Q. So, is it fair to say, then, that anything that you
2 invented related to broadheads that was ultimately sold as a
3 product would have been sold by 2XJ or Mid-Atlantic Archery
4 Products?

5 A. Yes.

6 Q. Up until these usurpers took the Crimson Talon
7 product line after bankruptcy?

8 A. Yes. And I didn't have anything to do with
9 whoever these new people are. And I don't know if they're
10 still in business either.

11 Q. Okay. I've seen in your CV that you have numerous
12 of publications in, like, Outdoor Life and other magazines.
13 Were you paid for those articles?

14 A. I was.

15 Q. Approximately how long did you write for Outdoor
16 Life?

17 A. I was a bowhunting editor for -- I want to say 15
18 years. Somewhere around -- about that.

19 Q. What was that time period, time frame? Years.
20 Excuse me.

21 A. 2000 -- 2001, somewhere around there -- to '15, '16,
22 '17.

23 Q. How did you get the job in 2000?

24 A. I had written publications for other bowhunting
25 magazines. I had written other articles for other

1 publications on bowhunting. And one of their advertising guys
2 was a bowhunter that worked for Outdoor Life, and I was on a
3 commercial hunt with him. And he was a fan of my work, and he
4 recommended me to the Outdoor Life staff about working for
5 them.

6 Q. You said you were on a commercial hunt. What does
7 that mean?

8 A. That's where a manufacturer sponsors a hunt for --
9 for editors and writers.

10 Q. Would you have to pay for anything when you went on
11 those hunts?

12 A. Typically not.

13 Q. Has Bowmar Archery ever taken you on a commercial
14 hunt?

15 A. No.

16 Q. Has Josh Bowmar or his wife Sarah ever taken you on
17 a commercial hunt?

18 A. No. Never met them.

19 Q. Has Matt Futtere or any of his companies ever taken
20 you on a commercial hunt?

21 A. No.

22 Q. Have any of the inventors on any of the other prior
23 art that you have cited taken you on a commercial hunt?

24 A. I don't follow.

25 Q. Has Mr. Flanagan ever taken you on a commercial

1 hunt?

2 A. No.

3 Q. Mr. Lint?

4 A. No. I understand now. No.

5 Q. Leichty?

6 A. No.

7 Q. Krieger -- the Krieger Corporation?

8 A. No.

9 Q. Hendricks?

10 A. No.

11 Q. Missini?

12 A. No.

13 Q. Have you ever written about the Flanagan patent
14 prior to this, prior to your declaration?

15 A. No. You mean like in a commercial article?

16 Q. Correct.

17 A. No.

18 Q. Have you ever written about a broadhead designed by
19 Matt Futtere?

20 A. I may have.

21 Q. Can you explain your hesitancy in that question --
22 that answer?

23 A. When I was a bowhunting editor for Outdoor Life
24 Magazine I went to the ATA show every year, and I covered new
25 products. I would cover new products at the show, which

1 included every product category, so it's very possible that I
2 could have written about something he made.

3 Q. Prior to this IPR issue, had you heard of Matt
4 Futtere?

5 A. I have.

6 Q. What was your knowledge about him?

7 A. You mean the products that he makes?

8 Q. I'm talking about the individual, Matt.

9 A. I didn't know anything. No specifics about him.

10 Q. Had you ever met him?

11 A. I did at a ATA show.

12 Q. Do you recall when that may have been?

13 A. This is a complete guess: 2003, '04, '05, somewhere
14 in there.

15 Q. Would it have been, like, a -- just a cursory casual
16 meeting or would it have been, like, a business
17 informational-interview type setting?

18 A. No. My standard operating procedure for a trade
19 show is I go booth to booth and I walk in and they -- My
20 media badge says Outdoor Life; people know, for the most part,
21 who I am. And I walk in and say, "What do you have new for
22 this year," and they would say, "I've got this, this, and
23 this." And then I would make note of anything that was
24 outstanding or new and innovative, and then I would write
25 about something, like, "New for ATA 2010." And it would be

1 different products that I thought -- different products that I
2 thought were -- excuse me -- different products that I thought
3 were new and innovative.

4 **Q. Did you have any opinions about any products that**
5 **Matt has developed that you're aware of?**

6 A. Opinions as in -- Opinions as in what?

7 **Q. Quality broadheads, innovative, not innovative?**

8 A. I -- I thought his Atom broadhead was innovative.

9 **Q. I know you indicated you have not testified as an**
10 **expert in the last four years in your declaration, but have**
11 **you ever given deposition testimony before?**

12 A. I have. You mean, have I ever had a deposition
13 taken? Was that --

14 **Q. Correct.**

15 A. I have.

16 **Q. And what was the case?**

17 A. It was the -- the Colombia Bank versus me regarding
18 2XJ Mid-Atlantic products.

19 **Q. Was it a bankruptcy issue?**

20 A. It was.

21 **Q. Did it have anything to do with broadhead designs?**

22 A. It was the company that sold broadheads. It didn't
23 have anything to do with the design.

24 **Q. Have you ever had your deposition taken in any other**
25 **case?**

1 A. Not that I recall.

2 **Q. Have you ever given testimony at a trial before?**

3 A. I have.

4 **Q. And what was that case?**

5 A. My business partner's divorce and bankruptcy trial.

6 **Q. Did that have anything to do with broadhead design?**

7 A. Had to do with his divorce.

8 **Q. Have you ever drafted an expert report before this**
9 **declaration in this IPR?**

10 A. I have.

11 **Q. And what was that case or cases?**

12 A. It was a tree-stand-related accident in Kentucky. A
13 bowhunter fell out of a tree stand and was suing the land
14 owner.

15 **Q. And who did you provide your expert testimony on**
16 **behalf of?**

17 A. The land owner.

18 **Q. Did you ultimately have a deposition in that case?**

19 A. I just provided my -- a declaration.

20 **Q. Have you given a declaration in any other case**
21 **besides that one and the present IPR?**

22 A. I had a tree-stand accident case sometime before
23 that, and I provided very cursory information on where the
24 plaintiffs or the defense attorney should go look for -- go
25 look for, or you know, go do their research or investigation.

1 It was very nonformal.

2 Q. During the patents that you got issued, did you hire
3 a law firm to prosecute those patents?

4 A. I did.

5 Q. Did you ever prosecute a patent in -- by yourself?

6 A. I did with the help of a co-worker at the space
7 center, the first patent I received.

8 Q. Was that a non-broadhead or arrow base --

9 A. Non-broadhead.

10 Q. Was it a arrow-based patent application?

11 A. It was. It was for an arrow shaft ferrule.

12 Q. Approximately when was that application?

13 A. 2001, 2002.

14 Q. Is that the -- This is different from the airfoils
15 you were referencing earlier?

16 A. It is. It's for the arrow shaft, the ferrule, the
17 little aluminum insert that goes inside of the arrow shaft.

18 Q. Would you consider yourself pretty involved in the
19 prosecution process with your attorneys?

20 A. Somewhat.

21 Q. Did you have an understanding of obviousness and
22 anticipation then prior to your work in this IPR?

23 A. Somewhat.

24 Q. Did you get a better understanding of anticipation
25 and obviousness because of this work today?

1 A. I did.

2 Q. And who was it --

3 A. -- you're asking me on -- you're asking me -- It's
4 a gradient scale that we're talking about, so my "somewhat"
5 may be expert level to laymen and my "somewhat" to your level
6 of expertise may be novice.

7 Q. I understand.

8 Who helped you understand obviousness and
9 anticipation?

10 A. Who helped me? Originally? The -- the co-worker
11 that I did my first patent application with. He was a patent
12 examiner -- ex-patent examiner. And then my legal counsel for
13 the prosecution of one of my first patents was a law firm out
14 of Washington. And then the third patent firm was a patent
15 attorney out of Coco, Florida, who prosecuted, I think, the
16 majority of my patent applications.

17 Q. Now, you were asked by Bowmar Archery in this case
18 to do what?

19 A. To review the intellectual property.

20 Q. Were you provided the patents such as Lint and
21 Krieger and Vandewater, or did you search those on your own?

22 A. I searched -- did a patent search on my own and with
23 the help of -- with the guidance of the patent attorney.

24 Q. So, did you find the Lint patent?

25 A. I don't think I found that one now.

1 Q. Did you find the Vandewater patent?

2 A. I did.

3 Q. Did you find the Hendricks patent?

4 A. I did. I knew of it.

5 Q. The Krieger patent?

6 A. I don't think that one.

7 Q. How did you conduct your patent search?

8 A. Vis a vis the USPTO.

9 Q. What search terms were you looking for?

10 A. A long list of them: Biasing, blades, barbs,
11 pivoting, pivot point. Just kind of all the generic terms.

12 Q. Did you end up giving that work to your attorneys to
13 look at?

14 ATTORNEY SHULL: Object to the form of the question.
15 And to the extent you're now asking for communications or
16 information that was provided between me and Dr. Kuhn as
17 a part of his work product, I object to the witness
18 answering those questions because it's going to disclose
19 work product and attorney-client privilege issues.

20 BY ATTORNEY MCKINNIE:

21 Q. Dr. Kuhn, are you aware that you have to produce or
22 identify everything that you're relying on in your opinion?

23 ATTORNEY SHULL: Are you asking me that or ...

24 ATTORNEY MCKINNIE: Dr. Kuhn.

25 BY ATTORNEY MCKINNIE:

1 **Q. Are you aware that you have to produce, or identify**
2 **at least, everything that you relied on in your expert report?**

3 A. I assume that's so.

4 **Q. Did you rely on those search results from the patent**
5 **office in locating this prior art that you used in your**
6 **declaration?**

7 A. For the most part.

8 ATTORNEY SHULL: Object to the form of the question.

9 Assumes facts not in evidence.

10 BY ATTORNEY MCKINNIE:

11 **Q. Was that search report attached to your declaration?**

12 A. No.

13 ATTORNEY SHULL: We've been going over an hour. I'd
14 ask if we can take a break.

15 ATTORNEY MCKINNIE: Sure. That's fine.

16 (Recess taken from 10:11 a.m. to 10:25 a.m.)

17 BY ATTORNEY MCKINNIE:

18 **Q. Dr. Kuhn, did you ever develop any mechanical**
19 **broadheads?**

20 A. Yes.

21 **Q. What time period did you start developing those?**

22 A. I have a patent on a mechanical -- mechanical
23 actuated broadhead that we produced. I don't -- you can
24 probably look at the date of the patent and get closer to --
25 I'm -- Some of this stuff I'm guessing on because it's been a

1 while.

2 Q. Would that patent be the only product that you
3 developed a mechanical broadhead on?

4 A. I think so.

5 Q. Did you focus your development more on the -- more
6 on, I guess, aerodynamics versus more mechanical aspects?

7 ATTORNEY SHULL: Object to the form of the question.

8 A. I didn't really focus on anything. Whatever I
9 thought I could -- whatever -- whatever product I thought I
10 could improve, mostly sell, is what I focused on. I had
11 plenty of ideas.

12 ATTORNEY MCKINNIE: I'm going to share with you
13 Exhibit 2.

14 (Exhibit No. 2 was marked for identification.)

15 BY ATTORNEY MCKINNIE:

16 Q. I'm going to take you to the second page here. Do
17 you recognize this letter?

18 A. I do.

19 Q. And what is this letter?

20 A. It's a shot against the -- across the bow. I don't
21 know what the term is.

22 Q. Did you have a part in writing this letter?

23 A. We sent a lot of letters. There's a chance.
24 There's probably a good chance.

25 Q. And this -- Scott Mackie is the person we were

1 referring to earlier that was the co-owner of the company with
2 you, correct?

3 A. It is.

4 Q. And in this, he's referencing the Atom product of
5 Mr. Futtere. Earlier you testified that you believe the Atom
6 from him was an innovative product; is that accurate?

7 A. It is.

8 Q. And this is the same product that you're referring
9 to in this patent infringement letter?

10 A. It is.

11 Q. Do you know if you ever received a response from
12 Mr. Futtere or his attorney?

13 A. I think we did.

14 Q. Do you recall if he took the product off the market?

15 A. No. I'm sure he didn't.

16 Q. Do you know if he made any changes in response to
17 your threat?

18 ATTORNEY SHULL: Object to the form of the question.

19 A. I don't think it was a threat. I think it was a --
20 We sent a lot of letters to other manufacturers as we got a
21 lot of letters from other manufacturers similar to this that
22 said that we were potentially fringing on somebody's patents
23 because there's so much -- so much prior art in the field that
24 it's a common thing.

25 BY ATTORNEY MCKINNIE:

1 Q. Did you ever sue over -- Did you ever sue based on
2 the Atom --

3 A. No. No.

4 Q. Were you the one that did the analysis that would
5 compare the atom product to the patent 6,918,848?

6 A. Oh, I don't know. It's 20 years ago. It's 2000 --
7 it's 20 years ago. I don't know.

8 Q. Did you ever participate -- Let me rephrase.
9 Did you ever compare a competitor product to one of
10 your patents to determine if it was infringing?

11 ATTORNEY SHULL: Objection to the form of the
12 question. It's outside the scope of his declaration.
13 It's direct testimony. I'll let him answer this
14 question, but these types of questions are inappropriate
15 for purposes of cross-examination.

16 THE WITNESS: Would you repeat the question?

17 ATTORNEY MCKINNIE: Yes. Mrs. Sparling, would you
18 read the question for me?

19 CERTIFIED STENOGRAPHER: Yes, sir.

20 (The previous question was read out loud by the
21 certified stenographer: Question: "Did you ever compare
22 a competitor product to one of your patents to determine
23 if it was infringing?")

24 ATTORNEY SHULL: Same objection.

25 THE WITNESS: You want me to answer that?

1 ATTORNEY MCKINNIE: Yes, please.

2 THE WITNESS: Yeah. Yes.

3 BY ATTORNEY MCKINNIE:

4 Q. So, it's possible that you reviewed the Atom product
5 and compared it to the patent referenced in here to determine
6 if there's potential infringement?

7 A. It's possible.

8 Q. Is it possible that Mr. Futtere's attorney sent a
9 response stating that the alleged infringement was incorrect,
10 that the Atom did not actually infringe?

11 A. It's very possible. Likely.

12 Q. I'm going to show you Exhibit 3.

13 (Exhibit No. 3 was marked for identification.)

14 BY ATTORNEY MCKINNIE:

15 Q. This is patent number 6,918,848.

16 Is this the patent that is referenced in the
17 infringement letter?

18 A. I would assume so.

19 Q. And the date of this letter to Mr. Futerre is
20 July 20, 2005. The issue date is July 19th, 2005. Were you
21 waiting on the issuance of this patent before you sent out the
22 letter?

23 A. I have absolutely no idea.

24 Q. Can you just tell me generally what is a broadhead?

25 A. I would say it's a subcategory of arrowheads, in

1 general, that generally include an edge that are used for
2 hunting or in war.

3 **Q. You said that they have an edge?**

4 A. Yes, sir.

5 **Q. Like a blade?**

6 ATTORNEY SHULL: Object to the form of the question.

7 A. Depends on what -- Typically, yeah. Typically.

8 BY ATTORNEY MCKINNIE:

9 **Q. Does that edge do cutting?**

10 A. Well, no, not necessarily. It doesn't -- no. Not
11 necessarily.

12 **Q. What would the purpose of an edge be on --**

13 A. -- depending on the application of the broadhead.

14 **Q. I believe that there's a category of -- correct me
15 if I'm wrong -- of a fixed blade broadhead --**

16 A. Yes.

17 **Q. -- correct? What is a fixed blade broadhead?**

18 A. It's a broadhead that have blades that are slit into
19 slots or some kind of receiving mechanism. The blades don't
20 move. A fixed blade can also be -- They make them out of
21 sintered metal, so they're solid, one piece, but they're still
22 considered a fixed blade. It's a general category.

23 **Q. Are there other general categories, like, fixed
24 blade --**

25 A. There are.

1 **Q. -- for broadheads?**

2 A. There are.

3 **Q. Can you name some of them for me?**

4 A. Fixed blade, mechanical, cut-on-contact, hybrid, and
5 I'd say "other."

6 **Q. What does cut-on-contact mean?**

7 A. It's a broadhead that's a solid blade. The major
8 feature of the broadhead is the blade.

9 **Q. How does that differ from a fixed blade?**

10 A. Fixed blades have replaceable blades for the --
11 generally -- it's -- with -- generally fixed blades have
12 replaceable blades. Cut-on-contact, the -- Okay. The fixed
13 blade -- or the fixed blade has a tip, a screw-on tip, a point
14 that's not part of the blade. A cut-on-contact has -- The
15 tip is a portion of the blade.

16 **Q. Would cut-on-contact be like the, you know, an**
17 **Indian arrowhead artifact? Would that be like a**
18 **cut-on-contact?**

19 A. In a general sense, yes. You're comparing a -- a --

20 **Q. I'm a novice here.**

21 A. Well, you're comparing something that's knapped out
22 of -- sharpened with a rock, but yeah, it is. Yeah. If you
23 had to put a -- that into a category, it would be
24 cut-on-contact, I would say.

25 **Q. And then, generally speaking, what is a mechanical**

1 **broadhead?**

2 A. In the simplest term, something with movable parts.

3 **Q. What happens with the fixed blade broadhead when it**
4 **hits bone?**

5 ATTORNEY SHULL: Object to the form of the question.

6 A. What typically happens?

7 BY ATTORNEY MCKINNIE:

8 **Q. Correct.**

9 A. It's the -- It's dependent on any number of
10 factors. The speed of the bow, the weight of the arrow, the
11 design of the broadhead. Some companies advertise that they
12 go through the bone. Muzzy is bad through the bone. Their
13 advertising says that, you know. Depends on how fast the
14 broadhead's going.

15 **Q. Would you say it is easier to pierce a bone with a**
16 **fine tip or a cut-on-contact?**

17 ATTORNEY SHULL: Object to the form to the form of
18 the question.

19 A. I don't know what a "fine tip" is.

20 BY ATTORNEY MCKINNIE:

21 **Q. Well, you mentioned like on a fixed blade that**
22 **there's a tip, like, a screw-on tip that's sort of separate**
23 **from the blade. Correct me if I'm wrong on that description?**

24 A. Repeat that one more time.

25 **Q. Would it be easier to pierce a bone with a fine tip**

1 or a -- a cut-on-contact blade?

2 A. I don't -- I'm not familiar with fine tip. I
3 don't -- I've never heard that term before.

4 Q. Okay. Would it be easier to pierce a bone with a
5 fixed blade having a screw-on tip or a cut-on-contact
6 broadhead?

7 ATTORNEY SHULL: Object to the form of the question.

8 A. I'd be speculating because I don't know there -- I
9 don't know what -- anything about the set-up. It's -- as I
10 said, it's the speed of the arrow, it's the speed -- or it's
11 the weight of the arrow, it's the design of the
12 cut-on-contact; some have chisel points some are tapered
13 points. Same with fixed blade broadheads; the screw-on tips,
14 they've got a plethora of designs. Depends on the angle of
15 impact. It depends -- there's just so many things that --

16 Q. So, is the category of a broadhead -- do some have
17 strengths and weaknesses?

18 A. Yes.

19 Q. Okay. What -- what would a strength of a fixed
20 blade broadhead be, typically?

21 A. Typically, the ability to change the blades. A lot
22 of -- a lot of people would sharpen them. That's two.

23 Q. What would a weakness be?

24 A. Their flight characteristic because they have a
25 fixed blade.

1 **Q. What -- What makes that a weakness?**

2 A. It's a flat planar surface that doesn't have any
3 aerodynamic feature to it so you don't get laminar flow across
4 the blade.

5 **Q. Does that result in the arrow flying slower?**

6 A. No. It re -- it makes the arrow flight -- I'm
7 trying to think of the word I would use -- errantly because
8 it's got -- it's got turbulent flow across the blade instead
9 of laminar flow.

10 **Q. Would that make it not accurate then?**

11 A. It makes it turbulent, the arrow fly turbulently, if
12 that's a word. So, it would -- in some -- Generally
13 speaking, in some cases it would be less accurate; depends on
14 the bow, the tune of the bow, the arrow shaft, it's --

15 **Q. Well, I'm trying to understand. So, a fixed blade**
16 **broadhead flying errantly -- is I believe the term that you**
17 **used -- what is that effect when it comes to trying to shoot a**
18 **deer?**

19 A. You might miss him.

20 **Q. Which that would go to accuracy?**

21 A. It would.

22 **Q. Would that also go to not being able to strike the**
23 **deer where you were intending to strike the deer?**

24 A. In that -- an inaccurate shot, yes.

25 **Q. What would a strength be of cut-on-contact**

1 **broadheads?**

2 A. The sharper point. So, it would take less -- less
3 kinetic energy for a really sharp point, tip of the arrow, to
4 go through an animal than other broadheads, other designs.

5 **Q. So, the tip on the cut-on-contact is a pretty**
6 **sharp -- is a sharp point?**

7 A. It's dependent on the design. Some companies have
8 almost blunt tips on them. Some companies have extremely
9 sharp tips on them. It's all -- it's all -- it's on a
10 granular scale.

11 **Q. So, does a fixed blade, then, have a blunt tip or a**
12 **sharp tip?**

13 A. It depends on the grind from the manufacturer, how
14 sharp they are. Some I would -- some I would say are not
15 sharp at all and some I would say are very sharp.

16 **Q. When -- Okay. When you were saying the**
17 **manufacturer is -- sometimes they're sharp and sometimes**
18 **they're not, is that an issue of just manufacturing or an**
19 **issue of their design?**

20 A. Both.

21 **Q. Are the blades on cut-on-contact -- I'm struggling**
22 **to see the difference on your description of cut-on-contact**
23 **versus a fixed blade as a category.**

24 A. It's industry standard. You can -- You can Google
25 "cut-on-contact" and "fixed blade" and immediately see the

1 differences between them. One is a flying blade. It's
2 literally a flying blade. And the other is blades that are
3 re -- generally speaking, in a ferrule -- receptacle in a
4 ferrule with a screw-on tip.

5 Q. And then on a fixed blade, the screw-on tip could be
6 sharp or it could be blunt?

7 A. Varying degrees. Could be.

8 Q. And then in a mechanical, you've described that as
9 basically it has a moving part?

10 A. Deployable blades, typically; vis a vis moving
11 parts. The parts move. They deploy, typically.

12 Q. Dr. Kuhn, I'm going to show you Exhibit 4.

13 (Exhibit No. 4 was marked for identification.)

14 BY ATTORNEY MCKINNIE:

15 Q. Do you recognize this chapter?

16 A. I do.

17 Q. I'll represent to you that this is Chapter 8 from
18 the Shooter's Bible -- The Shooter's Bible Guide to
19 bowhunting, which I believe you reference in your declaration
20 that you wrote, and I believe you referenced this chapter,
21 specifically. Is this the chapter that you reference in your
22 declaration?

23 A. It is.

24 Q. And you reference in your declaration this was
25 published in 2013. When -- when did you write this?

1 A. The years?

2 **Q. Approximately, yes.**

3 A. I probably -- I probably started on it in 2010-ish.

4 **Q. Do you know, specifically, when you started working**
5 **on this specific chapter?**

6 A. I don't.

7 **Q. Were you aware of the Flanagan patent at the time**
8 **that you wrote this?**

9 A. On the top of my head, no.

10 **Q. I'm going to zoom in here on -- I believe it was**
11 **kind of the last main paragraph of the text. Let me know, can**
12 **you -- can you read this? It says, "Mechanicals, while**
13 **getting plenty of ad time, as of late..."**

14 A. Yeah. I can read it.

15 **Q. What exactly is a deflected shot?**

16 A. When shooting mechanical, generally speaking,
17 depending on the design, the entry -- the angle of entry. If
18 one blade hits at a specific angle, it can deploy that one
19 blade and jackknife the broadhead or the arrow off the animal.

20 **Q. Do mechanicals have trouble going through bone?**

21 ATTORNEY SHULL: Object to the form of the question.

22 A. It depends on what bone, how fast the arrow is
23 going, how heavy the arrow is, which mechanical it is.

24 BY ATTORNEY MCKINNIE:

25 **Q. Well, you make --**

1 A. It's very specific.

2 Q. Well, you make a statement in this chapter that it
3 requires a lot of kinetic energy for a mechanical broadhead to
4 work properly; is that accurate?

5 A. Did I say that? Are you asking me that?

6 Q. I'm asking you, in general, do you recall that that
7 was a theme of this chapter to an extent?

8 A. Yeah. It's a -- It's an industry-accepted norm.

9 Q. That mechanical broadheads require more kinetic
10 energy?

11 A. Generally speaking.

12 Q. And is that a disadvantage for a mechanical
13 broadhead?

14 A. It could be for some because you have less
15 penetration.

16 Q. Is it accurate that you need -- in a lot of
17 mechanical broadheads that you need a sufficient amount of
18 kinetic energy to even deploy the blades?

19 ATTORNEY SHULL: Object to the form of the question.

20 A. Yeah. There's -- each -- Each mechanical broadhead
21 would take a certain amount of mechanical -- or kinetic energy
22 to deploy the blades, yes.

23 BY ATTORNEY MCKINNIE:

24 Q. I know zooming in here isn't very accurate here but
25 on this you're referencing these two mechanical broadheads.

1 Do you recall seeing these before, or do you recall this part
2 of your chapter?

3 A. I do.

4 Q. And you state in here, "The mechanical killer and
5 the hinged fang mechanical style heads were some of the first
6 introduced to the bowhunting community; however, the invention
7 of the compound bow with sufficient kinetic energy to open
8 these heads efficiently was almost two decades off." Were you
9 trying to insinuate that these two broadheads didn't work very
10 well until the compound bow became an option to shoot them?

11 ATTORNEY SHULL: Object to the form of the question.

12 A. If you scroll down a little bit -- No, I guess up.

13 Excuse me.

14 BY ATTORNEY MCKINNIE:

15 Q. Here, let me zoom out.

16 A. The large -- For instance, the fang hinged, it --
17 those big lever arms and the big flat ferrule, for lack of a
18 better word, shot from a recurve would not have performed well
19 for the most part. You could have a guy that's drawing
20 200-pound draw weight, which probably is not going to happen,
21 but it could, and if they were shooting a regular compound
22 bow, then they would have problems with penetration on that.
23 Same with the one on the right. Generally speaking.

24 Q. All right. You state in this paragraph where my
25 cursor is, "Since the early 1970s, broadhead designs have made

1 limited progress." You go on to state, "Looking ahead to the
2 future of broadheads and their design, it's hard to imagine
3 any real significant advancements will be made." So, reading
4 this, is it your opinion that there was really not much
5 innovation between the 1970s and the time that you published
6 this book in 2013?

7 ATTORNEY SHULL: Object to the form of the question.

8 A. I think I clarify that in the rest of the paragraph.

9 BY ATTORNEY MCKINNIE:

10 Q. Well, you're referencing manufacturing techniques
11 have improved?

12 A. Well, and materials.

13 Q. But not design of the broadhead and its
14 functionality of the broadhead.

15 A. I would agree with what I said.

16 Q. So, broadhead designs have made limited progress,
17 and when you say "limited progress," are you saying
18 "increasing the kill rate"?

19 ATTORNEY SHULL: Object to the form of the question.

20 A. They've become -- They've become more efficient
21 killers.

22 BY ATTORNEY MCKINNIE:

23 Q. And so, your statement, though, that "the broadhead
24 designs have made limited progress," that statement, says that
25 the design aspect of them have made little progress in making

1 **them more efficient killers?**

2 A. I believe --

3 ATTORNEY SHULL: Object to the form of the question.

4 Hold on. Todd, just make sure you pause just in the

5 event that I do want to object so I get my objection in

6 before you answer your question so we're not talking over

7 each other.

8 THE WITNESS: Okay.

9 ATTORNEY SHULL: I objected to the form question, by
10 the way.

11 CERTIFIED STENOGRAPHER: I heard the objection, not
12 the answer.

13 ATTORNEY MCKINNIE: Can you read the question back,
14 please?

15 (The previous question was read out loud by the
16 certified stenographer: Question: "And so, your
17 statement, though, that "the broadhead designs have made
18 limited progress," that statement, says that the design
19 aspect of them have made little progress in making them
20 more efficient killers?")

21 A. I think what I was referencing is the general
22 design, fit and function -- not fit and function. In function
23 and design they haven't changed much. They have, but it's not
24 like we went from a bag cell phone to a pocket cell phone.

25 BY ATTORNEY MCKINNIE:

1 Q. At the time you wrote this -- and well, at the time
2 it was published in 2013 and the time that you spent writing
3 it, had you seen a mechanical broadhead that had extended
4 blades through flesh but retracted blades through bone?

5 ATTORNEY SHULL: Object to the form of the question.

6 A. I'm pretty sure the Grim Reaper was around.

7 BY ATTORNEY MCKINNIE:

8 Q. And what was the Grim Reaper broadhead?

9 A. It's the Liechty patent.

10 Q. That's the L-I-E-C-H-T-Y II patent?

11 A. I'm assuming that's the broadhead that came -- that
12 patent.

13 Q. Did you think the Liechty patent was innovative?

14 ATTORNEY SHULL: Object to the form of the question.

15 A. My opinion on innovation is mechanicals are using
16 springs and cams and they're pretty -- there's a lot. They're
17 all doing the same thing at different variation. I think
18 that's what I meant by the -- by what I said here.

19 BY ATTORNEY MCKINNIE:

20 Q. I don't quite think that you answered the question
21 at least in a way that I could understand it.

22 Do you think the Liechty patent is innovative?

23 ATTORNEY SHULL: Object to the form of the question.

24 A. In what capacity? I don't -- I don't...

25 BY ATTORNEY MCKINNIE:

1 Q. Well, you referred to the Atom product earlier today
2 as innovative. So, you're okay with the generic description
3 of innovative at that time, so --

4 A. I wouldn't -- the Liechty patent wasn't -- It
5 didn't stand out to me as any -- I wouldn't go, "Wow, that's
6 really innovative."

7 Q. So, you don't think that going -- and I'm not
8 arguing that Liechty does one way or another here, but your
9 position that blades being in an extended position going
10 through flesh and then retracting to go through bone, you
11 don't think that would be an innovative design, innovative
12 function?

13 A. I don't know that he was the first to do that.

14 Q. Do you think that would increase the efficiency of a
15 kill?

16 A. Depending on where your -- where it hits.

17 Q. Well, could you give me some examples of how that
18 would depend?

19 A. If his broadhead hit directly into a shoulder bone
20 or a hip bone or anything, it wouldn't increase any efficiency
21 at all. In my opinion it wouldn't. It's going to stop
22 because of the mass of the bone. If he shot through ham,
23 would the blades be unable to articulate, increase the
24 effectiveness of the kill? No. It's going to just be the
25 standard cutting diameter of any other broadhead, depending on

1 the cutting diameter of the head -- on the Liechty head, which
2 I don't know the cutting diameter.

3 **Q. So, you don't think the Liechty patent goes through**
4 **bone?**

5 A. I didn't say that.

6 **Q. Excuse me. You don't think the Liechty patent would**
7 **go through a shoulder or hip bone?**

8 A. It could. It could -- It's dependent on the
9 equipment. If somebody's drawn 100 pounds or 110-pound draw
10 weight and they're shooting a very heavy arrow, there's a good
11 chance that it could because there's so much an increase in
12 the kinetic energy.

13 **Q. All right. So, a fixed blade broadhead, would that**
14 **exact same pull that you just discussed, would that go through**
15 **a shoulder bone or hip bone?**

16 ATTORNEY MCKINNIE: Object to the form of the
17 question.

18 A. There's a good chance.

19 BY ATTORNEY MCKINNIE:

20 **Q. This is a basic question: Why are there different**
21 **designs?**

22 A. Distance, arrow weight, arrow speed, draw weight,
23 angle of attack of the arrow, how it hits, angle of the
24 animal's orientation, how he's standing, alertness of the deer
25 or not alert, tension on the muscle tissue. There's so many

1 variables that contribute to -- and then, you know, all the
2 variables of the design of the broadhead affects the
3 efficiency of the broadhead. It's not just cut or dry. You
4 can't say eight, you know, --

5 Q. So --

6 A. -- it's situation dependent.

7 Q. Okay. Sorry.

8 So, going back to your book, the design of the
9 broadhead, you're saying, has made limited progress in making
10 any kill more efficient since the 1970s. That's your
11 position. You're still agreeing with that position?

12 A. Oh, I don't know if I -- No. Not necessarily, now,
13 with 12, 13 years later. Well, actually, it could be 15 years
14 later.

15 Q. Okay. But for the time period 1970s to 2013, you
16 still stand by that position?

17 A. Generally speaking --

18 Q. Oh, all right. And then you have identified the
19 person of ordinary skill in the art. Let me just pull it up
20 so you can see it while I go over it.

21 Okay. So, you stated it would be a, "Bachelor's
22 degree in the field of mechanical engineering, and/or related
23 field and at least two years of work experience in the
24 development of broadheads; or any education and experience
25 equivalent to (1)." What would the related field be in this

1 person of ordinary skill in the art?

2 A. The archery field.

3 Q. Are there bachelor's degrees in archery?

4 A. Sorry. Sorry. I misspoke. A technical field.

5 Q. Is biology a technical field?

6 A. Sure.

7 Q. So, a bachelor's degree in biology and two years of
8 experience of developing broadheads; you're suggesting that
9 would be your person of ordinary skill in the art?

10 A. I didn't disagree with you.

11 Q. And then the second one is, "Any education and
12 experience equivalent to (1)." So, under that prong you still
13 have to have education and some sort of experience; is that --
14 am I reading that correctly?

15 ATTORNEY SHULL: Object to the form of the question.

16 A. It's -- it's as it reads: Any educational
17 requirement of a degree and the experience of two years' work
18 developing broadheads.

19 BY ATTORNEY MCKINNIE:

20 Q. Okay. So, a -- so, then any education -- so a
21 high-school education, plus two years of work experience in
22 development of broadheads?

23 A. No. A college degree. The equivalent of a -- a
24 bachelor's degree in the field of mechanical engineering is a
25 college degree.

1 Q. Okay. So, your education in prong two is a
2 bachelor's degree?

3 A. Yes.

4 Q. Now, you've stated that you have more than the
5 ordinary skill of the art during the relevant time period.
6 How did you come to that conclusion?

7 A. From my work in the archery field designing
8 broadheads, writing about the industry, all the different
9 components, including broadheads, my experience, the years
10 I've had experience, my patent work, all of my patent research
11 for getting patents.

12 Q. And you've used that experience in drafting this
13 declaration?

14 A. I did.

15 Q. And you used that experience in coming to your
16 conclusions in this declaration?

17 A. I did.

18 Q. Earlier you testified that it took roughly ten years
19 before you created an improvement in a broadhead that you
20 ultimately then filed a patent application which was granted.
21 You're stating in this, a person of ordinary skill in the art
22 only has to have two years of experience. How did you
23 distinguish -- How did you come up with the two years when it
24 took you ten to make your first improvement?

25 ATTORNEY SHULL: Object to the form of the question.

1 A. What I said was it took me ten years to come up with
2 something that was commercially -- a commercially viable
3 product.

4 BY ATTORNEY MCKINNIE:

5 **Q. Okay. So, you're testifying that you made -- I -- I**
6 **recalled your testimony as saying that was -- that was the**
7 **first improvement that you had made?**

8 A. No. I said I had many -- I'd made many improvements
9 but none of which -- I said that I -- As I recall, I think I
10 said that I made improvements, but they didn't seem to turn
11 out to be improvements that I thought were of any consequence.
12 Somebody else might have thought they were wonderful.

13 **Q. I understand.**

14 **The patent owner proposed five years of experience**
15 **developing broadheads or a combination of formal mechanical**
16 **engineering and experience of developing broadheads. Do you**
17 **have a problem with that proposal?**

18 ATTORNEY SHULL: Yeah, I'm sorry. I didn't hear
19 that question for some reason. My screen broke up. Can
20 you repeat it?

21 (The previous question was read out loud by the
22 certified stenographer: Question: "The patent owner
23 proposed five years of experience developing broadheads
24 or a combination of formal mechanical engineering and
25 experience of developing broadheads. Do you have a

1 problem with that proposal?")

2 THE WITNESS: He proposed five years; is that what
3 you said --

4 BY ATTORNEY MCKINNIE:

5 **Q. Correct.**

6 A. Of experience?

7 **Q. Correct. Five years of --**

8 A. I'm not seeing it on the screen -- I'm not seeing
9 that on the screen, so.

10 **Q. No, no; this was what the patent owner wrote in**
11 **their --**

12 A. Oh.

13 **Q. -- preliminary response.**

14 A. I think that the five years is reasonable. I don't
15 think that the other mechanical -- I'm going off the top of
16 my head -- the mechanical engineering and -- Did you say no
17 experience?

18 **Q. Said, combination of formal mechanical engineering**
19 **and experience with developing broadheads; now, there was no**
20 **time frame on that --**

21 A. Yeah, I don't know what -- Yeah, I wouldn't -- I
22 know I -- That's saying somebody could have a mechanical
23 engineering degree and say that I picked up a broadhead one
24 time.

25 **Q. But five years of experience developing broadheads**

1 without any formal education, would you agree with that
2 standard?

3 A. It seems reasonable. It's arbitrary, but it seems
4 reasonable.

5 Q. What makes your standard for a person of ordinary
6 skill in the art not arbitrary?

7 ATTORNEY SHULL: Object to the form of the question.

8 A. Because mine is at least two years of work
9 experience in the development of broadheads. I don't think
10 his said that. I think it said experience with broadheads.

11 BY ATTORNEY MCKINNIE:

12 Q. Well, just to -- I had stated five years of
13 experience developing broadheads, and you have listed at least
14 two years of work experience in the development of broadheads.

15 A. Yeah. "Work" implies that you're doing it
16 professionally, yes?

17 Q. Is that full-time work or a hobby-job work?

18 A. I... I think that you're bona fides are presented on
19 the -- the totality of your background. I understand what
20 you're doing.

21 Q. But to an extent, any time you put a year on
22 something, it's arbitrary. I'm just trying to understand how
23 you came up with two and the patent owner was proposing five.
24 Why was five arbitrary but two was not --

25 A. Where did he come up with five? I don't know --

1 **Q. I'm not trying to play a gotcha game, honestly. I**
2 **just --**

3 A. I know that's --

4 **Q. -- want --**

5 A. -- I feel that's exactly -- I feel like that's
6 exactly what you're doing --

7 **Q. No, I'm not. I'm just trying to understand --**

8 A. -- you can argue --

9 CERTIFIED STENOGRAPHER: Excuse me, Gentlemen.
10 You're talking at the same time.

11 A. I'm not sure how you can -- how you can go that I
12 don't -- I'm assuming that you're going to want to say that I
13 don't have experience in broadhead development, so I think
14 we're playing word games.

15 BY ATTORNEY MCKINNIE:

16 **Q. This person of ordinary skill in the art, was this a**
17 **standard you developed or the attorneys provided to you?**

18 A. Together.

19 ATTORNEY MCKINNIE: Okay. I'm showing Exhibit 5.

20 (Exhibit No. 5 was marked for identification.)

21 BY ATTORNEY SHULL:

22 **Q. Which is Exhibit 1001 to the petition. I'm**
23 **representing to you that this is the Flanagan patent. Have**
24 **you seen this document before, Dr. Kuhn?**

25 A. I have.

1 Q. Were you familiar with the Flanagan patent prior to
2 this IPR?

3 A. I may have been. I've seen hundreds of broadhead
4 patents in the prosecution of my patents and researching the
5 prosecution of my patents. Hundreds.

6 Q. When you first saw this patent in relation to this
7 IPR, did it seem like something you had seen before?

8 A. I didn't make a judgment at the time whether I'd
9 seen it or not. Never crossed my mind.

10 Q. Did you recall seeing the subject matter of this
11 patent before?

12 A. Of collapsible broadheads?

13 Q. Of -- of the actual invention described in this --

14 A. I've seen collapsible broadheads before.

15 Q. But you don't know if you've seen the Flanagan
16 disclosure before?

17 A. I don't know, specifically, if I've seen it.
18 There's a good chance I did.

19 Q. It didn't stand out to you, though, to make a
20 statement one way or the other?

21 A. It didn't stand out to me.

22 Q. Do you know if you referenced this patent in your
23 book, "The Shooter's Bible, Guide To bowhunting"?

24 A. I don't know offhand.

25 Q. Can you briefly just describe how -- First of all,

1 **would you consider this a broadhead?**

2 A. I would.

3 **Q. Would you consider this a mechanical broadhead?**

4 A. I would.

5 **Q. Would this fit into cut-on-contact or any other**
6 **category of broadhead?**

7 A. I wouldn't think so.

8 **Q. Can you briefly describe how the Flanagan disclosure**
9 **works?**

10 ATTORNEY SHULL: Object to the form of the question.

11 A. You want me to read the abstract?

12 BY ATTORNEY MCKINNIE:

13 **Q. Well, do you recall sitting here today how the**
14 **Flanagan disclosure -- how -- Rephrase.**

15 **Sitting here today, do you recall how the broadhead**
16 **disclosed in the Flanagan patent operates?**

17 A. I do.

18 ATTORNEY SHULL: Object to the form of the question.

19 BY ATTORNEY MCKINNIE:

20 **Q. Can you briefly describe how it operates?**

21 A. The blades are -- on the right -- excuse me -- on
22 the left are retained by that O-ring, and when the -- when the
23 broadhead hits the animal, the O-ring deploys, pops off. The
24 biasing member pushes the -- extends the blades, and as it
25 goes through an animal, if it hits an -- encounters something

1 of a higher viscosity, the blades will collapse, and then the
2 biasing member will push them back.

3 Q. "Higher viscosity," would that potentially mean
4 bone?

5 A. Potentially.

6 Q. And then you said the biasing member pushes the
7 blades back. At what point does it push the blades back?

8 ATTORNEY SHULL: Object to the form of the question.

9 A. It's dependent on what it's going through. Depends
10 on the spring tension. Depends on the speed of the arrow.

11 BY ATTORNEY MCKINNIE:

12 Q. Would it be accurate to say that if the force
13 pushing against the blades is more than the biasing element
14 force operating in the opposite direction, than the blades
15 would be retracted?

16 A. They would move in a retracted -- in a retracted
17 direction.

18 Q. And then when the force of the tissue or the bone
19 that it's going through is less than the biasing force pushing
20 the blades, then the blades would be moving to the extended or
21 open position?

22 ATTORNEY SHULL: Object to the form of the question.

23 THE WITNESS: Would you repeat that?

24 ATTORNEY MCKINNIE: Please, ma'am.

25 (The previous question was read out loud by the

1 certified stenographer: Question: "And then when the
2 force of the tissue or the bone that it's going through
3 is less than the biasing force pushing the blades, then
4 the blades would be moving to the extended or open
5 position?")

6 ATTORNEY SHULL: Same objection.

7 A. Yes.

8 I'm sorry, Jason.

9 BY ATTORNEY MCKINNIE:

10 Q. Is it your understanding in the Flanagan patent that
11 the blades slice the tissue?

12 ATTORNEY SHULL: Object to the form of the question.

13 A. No, I don't -- I don't know how the.... I don't
14 know the function of its cutting ability.

15 BY ATTORNEY MCKINNIE:

16 Q. Would you agree that the blade member has a cutting
17 surface?

18 A. No.

19 Q. No?

20 I'm trying to highlight this for you. "Thus, the
21 blade members are in the extended position on either side of
22 the bone to maximize the cutting surface of the arrowhead
23 through the soft flesh of the animal." Do you still disagree
24 the blade has a cutting surface?

25 ATTORNEY SHULL: Object to the form of the question.

1 A. Looking at the drawings, no, I don't see a --
2 looking at the figures, no, I don't see a cutting surface. I
3 see an edge. I don't see -- I'm looking at this through the
4 plain language which doesn't reference cutting soft flesh.

5 BY ATTORNEY MCKINNIE:

6 **Q. So, a blade does not mean a cutting surface or has a**
7 **cutting edge?**

8 A. Some blades have cutting surfaces; some blades don't
9 have cutting surfaces.

10 **Q. How can it still be a blade without a cutting**
11 **surface?**

12 A. Well, you have broadheads that have practice blades
13 that are dull that don't cut anything. It's still a blade.

14 **Q. So, a person of ordinary skill in the art looking at**
15 **a broadhead that has a blade, your testimony is that they**
16 **would not understand that to have a cutting edge?**

17 A. It depends on what -- on what kind of blade it has.

18 **Q. Just the term "blade." The definition of "blade."**

19 A. It's very open-ended in the -- in -- with the --
20 with regard to broadheads.

21 **Q. So, "blade" can mean "dull and not cut" and "blade"**
22 **can also mean "cutting"?**

23 A. It could.

24 **Q. And that's the plain and ordinary meaning of the**
25 **word "blade"?**

1 ATTORNEY SHULL: Object to the form of the question.

2 A. Some broadheads have traditional -- what you
3 would -- what you're envisioning as a blade, with a -- with a
4 cutting edge. There's also blades on broadheads that are dull
5 and have no cutting edge. There's also broadheads that don't
6 have any blades.

7 BY ATTORNEY MCKINNIE:

8 Q. We're not talking about broadheads that don't have
9 any blades. We're discussing the term "blade." So, you --
10 Again, just to reiterate your testimony, is that a person of
11 ordinary skill in the art in broadhead design, would under --
12 would be very confused by the term "blade" and not know if it
13 means it has a cutting edge or a noncutting edge?

14 ATTORNEY SHULL: Object to the form of the question.
15 Mischaracterizes testimony.

16 A. As I said, my testimony is that a blade can mean
17 many things in the broadhead industry -- in the archery
18 industry. A blade can be sharp. A blade can be dull. A
19 blade can be many configurations. It's not dependent on --
20 It being a blade is not dependent on its sharpness.

21 BY ATTORNEY MCKINNIE:

22 Q. Okay. So, a cutting edge, though, could a cutting
23 edge be sharp or dull?

24 A. Of course.

25 Q. What about a cutting surface, can that be sharp or

1 **dull?**

2 A. To varying degrees.

3 **Q. And how do you understand the term "cutting" to**
4 **mean?**

5 A. I'm not -- I'm not sure I understand what you're
6 asking me.

7 **Q. What does "cutting" mean?**

8 A. To penetrate, to separate, to... Something.

9 **Q. I want to point out on the claim -- Nah.**
10 So, does the term "blade" mean that it would have a
11 cutting surface in your opinion?

12 A. No.

13 **Q. No?**

14 I believe you may have stated something about you
15 can have a practice broadhead with a blade on it. Did you
16 mention something about that earlier?

17 A. I did.

18 **Q. And it could have a -- a dull blade on it?**

19 A. Typically, they do so they don't cut the target.

20 **Q. So, when you shoot a practice broadhead, what**
21 **happens? What are you -- Sorry. What are you shooting a**
22 **practice broadhead at?**

23 A. You could shoot it at a broadhead target. You could
24 shoot it at a bag target. You could shoot it into sand.

25 **Q. So, if you shoot it into sand, does it stick into**

1 the sand, or does it bounce off the sand?

2 A. Again, it depends on a lot of factors: The arrow
3 speed, the geometric design of the broadhead blade.

4 Q. If you're practicing at shooting something, wouldn't
5 you want it to stick as to where you're shooting it at so you
6 can see it?

7 A. No, not necessarily. Depends on the design of
8 the -- of the practice head. There's some practice heads that
9 are designed not to cut at all or not to pierce the target,
10 not to -- to do nothing.

11 Q. So, it just bounces off the target?

12 A. Some do.

13 Q. How do you know, then, where you hit?

14 A. Depends on what kind of target you're shooting at.

15 Q. Do they put, like, paint on the end of it? I'm just
16 trying to understand why you would even do this.

17 A. You could probably put a piece of paper on the
18 target. I don't know how people do it. I know that there's
19 broadheads with practice blades that don't -- that are
20 designed not to do any damage.

21 Q. Are those practice blades still made out of metal?

22 A. I think metal is one of the compositions that the
23 blade could be made out of.

24 Q. Even the practice ones?

25 A. I think so.

1 **Q. What does the term "biasing" mean as it relates to**
2 **the Flanagan patent?**

3 A. Something that pushes against and biases something
4 from one position to another.

5 **Q. How do you understand the term "pivot"?**

6 ATTORNEY SHULL: Sorry. The term what?

7 ATTORNEY MCKINNIE: Pivot, p-i-v-o-t.

8 A. How do I understand it?

9 BY ATTORNEY MCKINNIE:

10 **Q. Correct. In terms of broadheads.**

11 A. It's an axis about which -- again, generally
12 speaking, it's an axis about which something turns.

13 **Q. Is a pivot point fixed or movable?**

14 ATTORNEY SHULL: Object to the form of the question.

15 A. It would depend on the design.

16 BY ATTORNEY MCKINNIE:

17 **Q. So, you could have a fixed pivot point or you could**
18 **have a slideable pivot point?**

19 ATTORNEY SHULL: Object to the form of the question.

20 A. You could have any number of different pivot points.

21 BY ATTORNEY MCKINNIE:

22 **Q. Are you aware of any commercial embodiments that**
23 **utilize the Flanagan disclosure in this patent?**

24 A. Not offhand.

25 **Q. Do you agree with me that the express purpose, at**

1 least listed by Flanagan, was to provide reliable penetration
2 of bone and maximizing cutting of soft flesh on either side of
3 the bone to increase the likelihood of a successful kill?

4 ATTORNEY SHULL: Object to the form of the question.

5 A. I believe that's what the inventor thought he was
6 doing.

7 BY ATTORNEY MCKINNIE:

8 Q. Do you have any reason to indicate that his design
9 as disclosed in this patent would not accomplish that?

10 ATTORNEY SHULL: Object to the form of the question.

11 A. I can't make a judgment on how well his broadhead
12 worked.

13 BY ATTORNEY MCKINNIE:

14 Q. You have no reason to believe one way or another if
15 his worked or didn't work as intended?

16 A. I think in theory that it should work.

17 BY ATTORNEY MCKINNIE:

18 Q. Do you think that would be an improvement over
19 previous designs if it worked in theory?

20 ATTORNEY SHULL: Object to the form of the question.

21 A. As I state in my declaration, I think there's other
22 designs that do the same thing, so I don't know that this is
23 an improvement over anything else.

24 BY ATTORNEY MCKINNIE:

25 Q. I'm just going to give you a hypothetical here: All

1 things considered of the same bow strength and the same person
2 pulling on it and the same type of bow and same deer, same
3 shoulder bone mass, would Figure 3 disclosure -- let's pretend
4 that it's fixed in the collapsed portion -- would that flow
5 through a bone or fly through a bone easier than the
6 disclosure in Figure 4 if those blades were fixed in the
7 extended position?

8 ATTORNEY SHULL: Object to the form of the question.
9 It's an incomplete hypothetical.

10 THE WITNESS: Am I supposed to answer that?

11 ATTORNEY MCKINNIE: Yes.

12 A. Yeah. Physics would dictate, more likely than not,
13 the Figure 3 broadhead would penetrate better than Figure 4.

14 (Exhibit No. 6 was marked for identification.)

15 BY ATTORNEY MCKINNIE:

16 Q. Okay. I'm showing Exhibit 6 which I'm representing
17 to you is Exhibit 1002, the Lint patent, that was attached to
18 Petitioner's IPR or the IPR petition.

19 Do you recognize this patent?

20 A. I do.

21 Q. Can you tell me briefly -- Would you consider this
22 a broadhead?

23 A. I would.

24 Q. Would you consider this a -- what subtype of
25 broadhead?

1 A. Mechanical.

2 Q. Is that because it's got moving parts?

3 A. Yes.

4 Q. Is there any other reason why you'd consider it a
5 mechanical?

6 A. The main reason is because of the moving -- the
7 ability of the parts to move, the blades to move.

8 Q. Can you explain to me how the disclosure in Lint
9 operates?

10 A. When Figure 2 goes into an animal and the blades
11 encounter something hard or viscous, it has more force than
12 the biasing spring's tension, the blades move, they
13 articulate.

14 Q. You're referring to Roman numeral 19 as a blade?

15 A. I am.

16 Q. And you're aware that Lint, discloses Roman
17 numeral 19, as a barb; are you aware of that?

18 A. I am.

19 Q. So, you are changing the term "barb" to mean
20 "blade"?

21 ATTORNEY SHULL: Object to the form of the question.

22 A. Blades and barbs -- To define a barb in the
23 bowhunting industry, in the archery industry, it refers to the
24 orientation of the blade or the barb to the ferrule. If it's
25 less than 90 degrees, less than perpendicular, then it's

1 considered a barb. So, you can have blades that are barbs.
2 You can have -- You can have blades that are labeled blades
3 that are barbs. So, in the bowhunting world, the archery
4 industry, the terms can be interchangeable, generally.

5 BY ATTORNEY MCKINNIE:

6 Q. Well, I still haven't heard a definition of what a
7 blade is. So, are you telling me that the barb is in -- in
8 this patent, this barb is interchangeable with a blade, the
9 term?

10 A. Yes. Yes.

11 Q. Will you agree with me that when Lint's disclosure
12 penetrates flesh of any kind, the barbs are retracted into the
13 closed position as shown in Figure 3, correct?

14 ATTORNEY SHULL: Object to the form of the question.

15 A. When the broadhead enters the animal, the blades are
16 biased to the open position, and when they encounter a force
17 greater than the biasing force, they retract.

18 BY ATTORNEY MCKINNIE:

19 Q. And then you agree with me that they don't open
20 again until it has stopped penetrating the animal?

21 A. No. No. No, I don't agree. They can open -- They
22 articulate just as the Flanagan blades do.

23 Q. Is that based on your understanding of the
24 specification?

25 A. That's based on my understanding of the entirety of

1 the patent.

2 ATTORNEY MCKINNIE: Mrs. Sparling, could you read
3 back his answer? Not this last one, but the one before
4 that.

5 (The previous answer was read out loud by the
6 certified stenographer: Answer: "No. No. No, I don't
7 agree. They can open -- They articulate just as the
8 Flanagan blades do.")

9 BY ATTORNEY MCKINNIE:

10 Q. Would it surprise you to learn that the term "blade"
11 is not once mentioned in the Lint patent?

12 A. Surprise me? No.

13 Q. Is "blade" a synonym for "barb"?

14 A. In the bowhunting world, yes. Could be.

15 Q. Is it "yes" or "could be"?

16 A. Yes.

17 Q. So, it is a synonym for a barb?

18 A. (Witness nods head.)

19 Q. Okay. Dr. Kuhn, I'm going to show you Exhibit 7.

20 This is US Patent Number 6,695,726. Do you recognize this?

21 (Exhibit No. 7 was marked for identification.)

22 A. I do.

23 BY ATTORNEY MCKINNIE:

24 Q. And is this a patent that you're the inventor on?

25 A. I am.

1 Q. And it doesn't appear to have any assignment on its
2 face. So, this is a patent that you currently still own?

3 A. I think the bank probably owns it.

4 Q. Okay. So, you believe it was probably assigned with
5 the X -- the 2XJ -- XJ2 -- you believe it was assigned to the
6 company?

7 A. Yes.

8 Q. All right. Can you read the name of this?

9 A. Arrow Blade Locking System.

10 Q. And what is this patent describing, generally? I
11 can scroll for you.

12 A. Describes the way the blades are held in the
13 ferrule.

14 Q. Now, would you describe these as barbs?

15 A. What are you pointing to?

16 Q. Would this patent make sense if we did a
17 "find/replace blade" and changed every term "blade" to "barb"?

18 A. Could you do that? Is that the question?

19 Q. Right. Would that be accurate?

20 A. You could do that.

21 Q. Okay. Didn't you state that a barb had to be
22 90 degrees less than the angle between -- the rear angle of
23 the ferrule and the bottom of the unit that was sticking down?

24 ATTORNEY SHULL: Object to the form of the question.

25 A. Generally speaking.

1 BY ATTORNEY MCKINNIE:

2 Q. So, I'm looking at these blades on Figure 6 and
3 those don't appear to be 90 degrees down from the ferrule,
4 correct?

5 A. Correct.

6 Q. So, that doesn't meet your definition of "barb"
7 though, does it?

8 ATTORNEY SHULL: Object to the form of the question.

9 THE WITNESS: Could you repeat that?

10 ATTORNEY MCKINNIE: Please.

11 (The previous question was read out loud by the
12 certified stenographer: Question: "So, that doesn't
13 meet your definition of "barb" though, does it?")

14 ATTORNEY SHULL: Same objection.

15 A. In the archery industry, you can have a blade that
16 is not configured in a 90-degree as I defined it. And as I
17 spoke, generally, there are some barbs that are blades that
18 are sharpened, that are known to someone in the -- an expert,
19 that are 90-degrees, that are sharp but are considered blades
20 or barbs. And that goes back to 1945, the Zwickey patent,
21 where he discloses barbs, blades, that are sharpened, that do
22 not have the geometry -- the general geometry that I spoke of.

23 ATTORNEY MCKINNIE: Objection as nonresponsive as an
24 answer to the question.

25 BY ATTORNEY MCKINNIE:

1 Q. I'll ask you again: Does the blade that is showing
2 on Figure 6 meet the definition of a barb? Yes or no?

3 A. I said generally. Generally. There's exceptions to
4 every rule.

5 Q. Is Figure 6, yes or no, a barb?

6 ATTORNEY SHULL: Object to the form of the question.

7 BY ATTORNEY MCKINNIE:

8 Q. Excuse me. Is the blade that's shown on Figure 6 a
9 blade or a barb?

10 A. Could be a barb.

11 Q. So, it is a barb?

12 A. It could be defined as a barb.

13 Q. This is your patent, Dr. Kuhn. Is this a barb or
14 not?

15 A. It can be a barb or a blade.

16 Q. So, your entire patent could be "Arrow Barb Locking
17 System," and you could replace every mention of "blade" in
18 this specification with the term "barb" and that would be
19 accurate in your mind?

20 A. Generally speaking, a blade can be a barb and a barb
21 can be a blade.

22 Q. What about for this patent, Dr. Kuhn? I'm asking
23 you about a specific instance. Not generally. This patent.

24 ATTORNEY SHULL: Object to the form of the question.

25 It's asked and answered.

1 A. I said that it can be considered a barb.

2 BY ATTORNEY MCKINNIE:

3 Q. Okay. Thank you.

4 I'm going to refer back to Exhibit 3. And again,
5 this was another patent that you had, Dr. Kuhn. This is in
6 your description of the prior art relating to broadhead
7 arrowheads, and you state on here, "As the tip enters the
8 intended target, the blades slice a region much greater in
9 diameter than the arrow shaft." Now, this is -- You're
10 referencing the prior art, so in this instance, you're
11 referencing a blade that cuts; is that accurate?

12 A. It is.

13 Q. So, in your opinion, the term "slice" is now
14 modifying how you define the word "blade"?

15 ATTORNEY SHULL: Object to the form of the question

16 A. As I've said before, a blade does not necessarily
17 have to cut. We discussed that. Blades -- blades on an
18 archery broadhead, the preferred embodiment is for them to be
19 sharp, but that doesn't mean all blades are sharp.

20 BY ATTORNEY MCKINNIE:

21 Q. Are you aware that barbes are -- broadheads that
22 have a barb on them are banned in at least a few states in the
23 United States?

24 A. I am.

25 Q. Do you know if those laws ever use the term that the

1 **blade is banned?**

2 A. Are you asking me if the blade is banned or if the
3 broadhead --

4 **Q. Are you aware of any laws in the United States where**
5 **that -- they banned the use of a blade on a broadhead?**

6 A. Depending on the geometry that turns a blade into a
7 barb, yes, they're illegal --

8 **Q. But do those laws describe them as a blade or as a**
9 **barb?**

10 ATTORNEY SHULL: Object to the form of the question.

11 ATTORNEY MCKINNIE: Let me rephrase.

12 BY ATTORNEY MCKINNIE:

13 **Q. I'm asking you a very specific question: Are you**
14 **aware of any state law that bans the term -- using the term**
15 **"blade" on broadheads?**

16 ATTORNEY SHULL: Object to the form of the question.
17 Now, it's way outside of any scope of his declaration. I
18 don't know why we're even going down this route. I'll
19 let him answer this question, but it's now --

20 ATTORNEY MCKINNIE: -- the notice --

21 ATTORNEY SHULL: -- information. Has he opined on
22 issues of state law with respect to where certain
23 broadheads are banned? I don't think so, so --

24 ATTORNEY MCKINNIE: Objection --

25 ATTORNEY SHULL: -- way outside the scope of this

1 deposition. I'll ask -- I'll let him continue to ask a
2 few more questions on this point, but if you're going to
3 continue to go down this road and waste his time and our
4 time, then, you know, we may have an issue to go with the
5 PTAB. This is not what cross-examination is for.

6 BY ATTORNEY MCKINNIE:

7 **Q. Can you answer the question, please?**

8 A. Broadheads that have a -- have a geometry which
9 keeps them from being extracted from an animal, the blade is
10 considered a barb so they are illegal.

11 **Q. But you're not aware of any law that uses the term**
12 **blade as a ban on an arrowhead?**

13 ATTORNEY SHULL: Object to the form of the question.
14 Same objection. It's asked and answered.

15 A. The blade -- they banned the broadhead.

16 BY ATTORNEY MCKINNIE:

17 **Q. Do you agree with me that the Lint disclosure does**
18 **not discuss using the barb as a cutting surface or having a**
19 **cutting surface?**

20 ATTORNEY SHULL: Object to the form of the question.

21 A. I think that it -- I don't think. It does show
22 cutting surface.

23 BY ATTORNEY MCKINNIE:

24 **Q. You think it does or it does not?**

25 A. It does.

1 Q. It does. Where does it show a cutting surface?

2 Would you like me to show you the figures?

3 A. Figure 1.

4 Q. And what is the cutting surface?

5 A. It's the -- it's the edge on the blade.

6 Q. You're referencing Roman numeral 19 that is referred
7 to as a barb by Lint; is that accurate?

8 A. I'm referring to the edge that's obvious in that
9 drawing.

10 Q. And you're stating that is a cutting edge?

11 A. I am stating it's a cutting edge.

12 Q. And you're stating that that is deployed while in
13 the flesh of the animal while the arrow is moving?

14 A. That is deployed in the animal as the broadhead is
15 moving through and it has an edge. You asked me what a blade
16 was, and I said that it's a -- it's part of a tool or a
17 device, something to that effect, that generally has an edge.

18 Q. Does that edge need to be a cutting edge or a
19 noncutting edge?

20 A. The edge I'm referring to is the edge that the
21 patent owner refers to. The patent owner says that for a
22 broadhead to be lethal, it has to have three things: An edge,
23 velocity or speed, and pressure. That has an edge. You can
24 assume it's going to have speed and pressure when it hits the
25 animal, so yes, that is a cut -- that's a lethal cutting

1 surface. It's a lethal blade, sharpened-edged blade. That's
2 his definition.

3 Q. But the edge, just to reiterate or just to make sure
4 I fully understand: The edge has to have pressure and
5 velocity behind it to make it a cutting edge?

6 A. No.

7 Q. No? Can you explain that for me again?

8 A. Sure. That edge has a geometry that -- that edge
9 has a geometry that if you push that through, something's
10 going to cut.

11 Q. So, it has to -- it has to be moving, in other
12 words; maybe I just wasn't phrasing that right.

13 A knife sitting on the table is not cutting
14 anything, correct?

15 A. Right.

16 Q. So, it has to be moving through it to cut, correct?

17 A. Generally, yeah.

18 Q. Okay. I'm referencing page 45 of your declaration
19 where it says, "first blade member," and it's pointing -- it
20 appears to be pointing to that Roman numeral 19, those are
21 your annotations, correct?

22 A. Yes.

23 Q. And again, Lint refers to 19 as a barb. You are
24 referring to it as a blade, correct?

25 A. Correct.

1 Q. Now, in your report -- and I'm paraphrasing -- you
2 make a statement that I -- to the extent the board disagrees
3 that the barb can be a blade member, you assert it would be
4 obvious to change the barb of Lint into a blade member; is
5 that accurate?

6 ATTORNEY SHULL: I object to the form of the
7 question. You're mischaracterizing his direct testimony
8 that's set forth in his declaration. If you want to ask
9 opinion about his specific opinions -- or ask questions
10 about his specific opinions, specifically refer to where
11 in his report you're talking about instead of
12 paraphrasing.

13 ATTORNEY MCKINNIE: Dr. Kuhn, can you answer the
14 question, please?

15 THE WITNESS: I don't know where -- you guys lost
16 me.

17 Where, specifically, are you referring to?

18 BY ATTORNEY MCKINNIE:

19 Q. Dr. Kuhn, let's -- I'll just move on here a little
20 bit.

21 Do you recall that you utilized the Lint reference
22 as an anticipation-based reason to invalidate the Flanagan
23 claims?

24 A. I do.

25 Q. And do you recall that anticipation means every

1 element must be disclosed in the prior art to invalidate the
2 patent at issue?

3 A. I do.

4 Q. Was there a portion of your report where you also
5 argued that Lint, by itself, would be obvious because you can
6 swap out the barb for the blade member?

7 A. I recall that.

8 Q. And why did you make that argument in your
9 declaration, if you believe --

10 ATTORNEY SHULL: Object to the form of the question.

11 BY ATTORNEY MCKINNIE:

12 Q. -- the blade -- the barb of Lint is a blade member?

13 A. Because one skilled in the art would know that that
14 is a cutting blade, barb, whatever you want to call it. We're
15 getting hung up on definitions, but that is a blade that would
16 cut, even though they call it a barb.

17 Q. Well, what I do understand is on the obviousness
18 rejection when you state that you could swap out -- you could
19 change the barb to a blade, how is that possible when the barb
20 is already a blade member?

21 ATTORNEY SHULL: Object to the form of the question.

22 It mischaracterizes his Direct testimony.

23 A. It would be obvious to anybody skilled in the art to
24 know that that would function -- in form and function exactly
25 like the Flanagan patent because those barbs/blades,

1 either/or, cut tissue when they go through an animal because
2 they have an edge. They have speed and they have pressure.

3 BY ATTORNEY MCKINNIE:

4 Q. I'm going to refer you to page 82 of your
5 declaration, and you state here at the bottom: "However, it
6 would have been obvious to a person of ordinary skill in the
7 art to simply -- to add a sharp edge to the first blade member
8 disclosed in Lint because a person of ordinary skill in the
9 art would know that the sharp edge facilitates expeditious
10 cutting of flesh, expedited hemorrhaging, which ultimately
11 leads to a humane discharge of the animal and flight
12 characteristics." Are you stating here -- Why would a person
13 of ordinary skill in the art make any change when the barb is
14 already a blade?

15 A. It was an improvement because the quintessential
16 lethality of a broadhead would be to have as sharp a surface
17 as you could possibly have; not merely an edge, but as sharp
18 as you could possibly get it.

19 Q. But doesn't a person of ordinary skill in the art
20 already know that a barb is a blade?

21 A. People would know that a barb could be replaced by a
22 blade or a blade by a barb.

23 Q. So, you're saying in one breath that it would be
24 obvious to a person of ordinary skill in the art to change the
25 barb to add the sharp edge to the barb --

1 A. This was --

2 Q. -- another breath, you're stating that a person of
3 ordinary skill in the art would already know that the barb is
4 a blade; is that accurate?

5 ATTORNEY SHULL: Object to the form of the question.

6 A. This was added for this reason exactly, for somebody
7 saying that that's not a blade, that's a barb. It's not
8 sharp. It was combining Lint with Minisini that says that the
9 optimal design for a barb would be to be sharpened.

10 BY ATTORNEY MCKINNIE:

11 Q. Well, in this, I'm just referencing Lint only, not
12 Lint in combination with Minisini or Krieger unless I
13 misunderstood your declaration.

14 A. I think what I said was -- when --

15 ATTORNEY SHULL: Can you blow the screen up?

16 Because it's real small, microscript font.

17 ATTORNEY MCKINNIE: Sure. Any particular spot?

18 ATTORNEY SHULL: So, you're referencing the portion
19 of his Direct testimony relating to ground three. Now,
20 you're going back and claiming that your questions are
21 limited to his opinions with respect to ground one. So,
22 which is it?

23 BY ATTORNEY MCKINNIE:

24 Q. Are there two different persons of ordinary skill in
25 the art, Dr. Kuhn?

1 A. Pardon me.

2 Q. Are there two different persons of ordinary skill in
3 the art for ground one versus ground three?

4 A. You've lost me.

5 ATTORNEY SHULL: Object to that form of the
6 question.

7 BY ATTORNEY MCKINNIE:

8 Q. I'll move on. It's fine.

9 All right. I'm going to show Exhibit 8 which is
10 Exhibit 1006 to the IPR petition. It's the -- representing
11 it's the Krieger patent.

12 Dr. Kuhn, do you recognize this?

13 A. I do.

14 (Exhibit No. 8 was marked for identification.)

15 BY ATTORNEY MCKINNIE:

16 Q. And what is this disclosure showing?

17 A. Shows the -- adding a sharp edge to increase your
18 aerodynamic efficiency.

19 Q. And it's increasing that aerodynamic efficiency by
20 sort of changing the angle or spiraling of the blades as it
21 relates to the shaft, correct?

22 A. It's sharpening the blades to make them cut through
23 the air more aerodynamically.

24 Q. That's your interpretation of what the specification
25 says? I'll reference you to column one, line 51.

1 A. I'm trying to find my copy.

2 Q. I can zoom in for you if that makes it easier.

3 A. Sorry. Go ahead.

4 Q. Okay. So, I zoomed in. Can you read line 51 here?

5 Is that clear?

6 A. I can read it.

7 Q. And then when you go up to the next part, where does
8 it state that it's a sharp blade?

9 A. Can you refer me where in my declaration where we're
10 looking?

11 Q. Says, column one lines one through two, "This
12 invention relates to arrows and more particularly arrowheads.
13 Krieger is directed to arrows and more particularly to
14 arrowheads..." Okay. There it is. All right. I stand
15 corrected.

16 So, here they're saying wings or blades; again,
17 you're making sort of a distinction that blades don't
18 necessarily have to be a super sharp edge to make it a blade?

19 A. To be lethal.

20 (Certified Stenographer asks for clarification.)

21 BY ATTORNEY MCKINNIE:

22 Q. Now, do you agree that Krieger also discloses
23 changing the orientation of the blades to increase
24 aerodynamics?

25 A. In addition to, yes.

1 Q. Do you have any demonstrative data that shows how
2 sharp the edge needs to be to make any sort of measurable
3 difference -- measurable change in the speed of an arrow?

4 A. In the speed of an arrow?

5 Q. Or accuracy.

6 A. No, I don't have any.

7 (Exhibit No. 9 was marked for identification.)

8 BY ATTORNEY MCKINNIE:

9 Q. I'm going to show you Exhibit 9 which is Exhibit
10 1005, Minisini, to the IPR petition.

11 Do you recognize this document?

12 A. I do.

13 Q. And what is this disclosure showing?

14 A. It's showing that in a preferred embodiment that the
15 barb would be sharpened to cut through flesh of the fish.

16 Q. You agree with me that Minisini's barb is exposed
17 even before deployment, correct?

18 A. As I said, this is to demonstrate in a preferred
19 embodiment that a barb would be sharpened. There's lots of
20 embodiments in the prior art talking about sharpening barbs to
21 increase their cutting -- their ability to cut. As I
22 mentioned, Zwickey was probably the first to do it in 1945.

23 Q. But again, though, this simple question: You'd
24 agree with me that the barb that is disclosed in Minisini even
25 in the retracted state still has an outside edge exposed to

1 **flesh when it enters into tissue, correct?**

2 A. I would not agree because I don't know where the --
3 you -- depending on the grind on the barb where you start and
4 stop.

5 Q. Well, so this portion right here that I'm -- I'll
6 zoom in --

7 A. I can see it.

8 Q. You're stating this edge right here is not exposed
9 to flesh as it enters into a target?

10 A. Yes, it is exposed.

11 Q. Now, I want to refer you back to Lint. Would you
12 agree, on Figure 3, that this barb, for what you're referring
13 to as a blade, 19, is not exposed --

14 ATTORNEY SHULL: Object to the form of the question.

15 BY ATTORNEY MCKINNIE:

16 Q. -- to flesh as it is entering in --

17 ATTORNEY SHULL: Object to the form of the question.

18 A. No. I'm looking at Figure 2 is how it would be shot
19 and it is exposed.

20 BY ATTORNEY MCKINNIE:

21 Q. In Figure 2 it is exposed, correct, but in Figure 3
22 it is not exposed?

23 A. Number three is when they're going into the
24 retracted position.

25 Q. Right. But when it's in the retracted position,

1 **it -- in Lint, it is fully retracted, correct --**

2 A. That's after it's been --

3 ATTORNEY SHULL: Object to the form of the question.

4 Let's make sure we're not talking over each other.

5 THE WITNESS: Sorry, Jason.

6 ATTORNEY MCKINNIE: Which Jason?

7 BY ATTORNEY MCKINNIE:

8 **Q. So, you'd agree, though, that the barb shown**
9 **in 19 -- for simplicity's sake, reference Roman numeral 19,**
10 **when it is fully retracted as shown in Figure 3 is not exposed**
11 **to the flesh?**

12 ATTORNEY SHULL: Object to the form of the question.

13 A. What I'm saying is you're comparing two different --
14 You're saying that the -- if Hendricks is shot or -- What was
15 the other patent?

16 BY ATTORNEY MCKINNIE:

17 **Q. Minisini.**

18 A. That figure is the same as Figure 2 when it's going
19 through the animal. This is after it's gone through the
20 animal and they've retracted the blades.

21 **Q. I'm just looking at the structure.**

22 A. If the question --

23 **Q. Hypothetically, if Figure 3 on Lint, is penetrating**
24 **into the flesh, there is no outside edge of Roman numeral 19**
25 **here that is capable of cutting or slicing tissue?**

1 ATTORNEY SHULL: Object to the form of the question.

2 A. Figure 3 is not when it's penetrating the animal.

3 It's after it's been shot through the animal and they want to

4 retract it. It's not the same as Minisini. But that's in

5 retraction. That's pulling it out. That's after Figure 2.

6 BY ATTORNEY MCKINNIE:

7 Q. That's your understanding of Lint?

8 A. That's my understanding of what we're looking at

9 there.

10 Q. The general -- Would you agree that the general

11 nature of a barb is to help retain the arrow within the

12 tissue?

13 ATTORNEY SHULL: Object to the form of the question.

14 A. No, I wouldn't.

15 BY ATTORNEY MCKINNIE:

16 Q. What would be the purpose of a barb, then, in your

17 opinion?

18 A. You said the general purpose of a barb?

19 Q. Correct.

20 A. I would say that the -- Generally speaking, that it

21 was to keep an animal attached to the tether. And it also

22 could be used as -- to cut through the flesh. Depends on what

23 the design is. Some broadheads have barbs on them and they

24 sharpen the backs -- they sharpen the -- Going back to what

25 you said earlier about the geometry of a blade making the barb

1 being outlawed, originally, the first broadheads that were
2 ever made had blades that were considered barbs -- both barbs
3 and blades and they sharpened -- they'd sharpen the barb
4 portion.

5 **Q. So, what was the effect on the animal?**

6 A. The effect on the animal was a dual cut going in and
7 coming out.

8 **Q. Was that considered inhumane, or do you have an**
9 **understanding as to why that would be a problem?**

10 A. It was considered more efficient, the ability to cut
11 going in and going out. It would be more humane because it
12 would express -- it would cause the animal to expire quicker
13 because you're increasing the lethality of the broadhead and
14 the blade, the barb.

15 **Q. Was it ever a problem that if you did not have a**
16 **barb where the portion that was angled 90 degrees rearward, as**
17 **we'd mentioned earlier for generally a barb if you did not**
18 **have that, would it be easier for an animal to potentially**
19 **remove an arrow or have it fall out after being shot than with**
20 **a barb?**

21 A. The reason for the law is so the animal can't
22 theoretically pull the arrow back out.

23 **Q. So, in that instance, the barb would help keep the**
24 **arrow or broadhead inside the animal?**

25 A. In that instance, the broadhead would be able to

1 be -- with the sharpened barb, would make it more lethal.

2 **Q. When it's pulled out?**

3 A. The -- as it's being pulled out.

4 ATTORNEY MCKINNIE: I've probably got about another
5 30 to 40 minutes, Guys. You want to take a quick break
6 real quick? I'd like to use the restroom.

7 THE WITNESS: Please.

8 (Recess taken from 12:27 p.m. until 12:40 p.m.)

9 ATTORNEY MCKINNIE: All right. Dr. Kuhn, I'm going
10 to share Exhibit 10 which is -- I'll represent to you it
11 is Exhibit 1003 of the IPR petition and it is to the
12 Vandewater patent.

13 (Exhibit No. 10 was marked for identification.)

14 BY ATTORNEY MCKINNIE:

15 **Q. Do you recognize this?**

16 A. I do.

17 **Q. And it states here that it has a filing date of**
18 **March 16th, 2009, which is after the filing date of Flanagan.**
19 **Were you told by your attorneys that there was a provisional**
20 **application that created the -- that allowed for this to be**
21 **priority -- or be prior art?**

22 A. I -- I believe I state that in my declaration.

23 **Q. Did you review the provisional application?**

24 A. Generally.

25 **Q. Okay. I'm going to start by reviewing embodiment**

1 one; actually, start with embodiment two, which is described
2 as Figure 7, 8, 9 through 12, I believe.

3 Can you describe how this embodiment of Vandewater
4 works?

5 A. The arrow shaft is shot and that impacts the animal
6 of 225 and 224, open the blades to the deployed position,
7 and -- and then they -- they lock as in Figure 8 and they
8 pivot on 236.

9 Q. 236?

10 A. Yeah.

11 Q. Did you want me to go back a figure?

12 A. No. I've got them here.

13 Q. So the blades, once they reach the -- So, in
14 Figure 7 they're in a retracted position, correct?

15 A. Correct.

16 Q. Figure 8 they're in a deployed extended position,
17 correct?

18 A. Correct.

19 Q. And then they're locked in the extended position,
20 correct?

21 A. Correct.

22 Q. And then the blade can -- Once it's formed this
23 unitary blade as shown in figure 11, it can rotate along this
24 pivot point, 216; is that accurate?

25 ATTORNEY SHULL: Object to the form of the question.

1 A. Yes.

2 BY ATTORNEY MCKINNIE:

3 Q. Now, in this embodiment as drawn, there was no
4 reference to a biasing element in the drawing; is that
5 accurate?

6 A. Well, a reference that these drawings can include
7 this 300 series. So, there was not -- To answer your
8 question, that drawing, no, there's not a biasing element.

9 Q. So, the 300 series would be the third embodiment,
10 correct?

11 A. Figures 15, 16, yeah.

12 Q. So how does this embodiment work?

13 A. The broadhead enters the animal, 324, and 325, push
14 the blades open -- not push the blades open. They begin
15 moving the blades in an aft direction biasing element three --
16 if I get the numbers right 323, retaining element -- if I get
17 the numbers wrong; I apologize. Retaining element 323 holds
18 the blades closed. 3 -- The 317 pushes the blades -- biases,
19 excuse me, the blades into an open position, and then --

20 Q. Excuse me. Which one biases them to the open
21 position?

22 A. 317. 317. It both retains and --

23 (Certified Stenographer asks for clarification.)

24 A. It both retains and biases. And then Figure 18
25 shows the blades deployed and the biasing element/retaining

1 element articulates on that pin sliding left to right to bias
2 the blades.

3 BY ATTORNEY MCKINNIE:

4 Q. When the blades as shown in -- When you said that
5 the blades move towards the aft direction, are they sliding
6 within that slot that looks like 313 maybe on Figure 17?

7 A. I believe it --

8 ATTORNEY SHULL: Object to the form of the question.

9 THE WITNESS: I'm sorry. Jason Shull, I didn't hear
10 what you said.

11 ATTORNEY SHULL: I object to the form of the
12 question.

13 A. Yes. They slide.

14 BY ATTORNEY MCKINNIE:

15 Q. And then once they reach the deployed state on
16 Figure 18, they are locked; is that accurate?

17 ATTORNEY SHULL: Object to the form of the question.

18 ATTORNEY MCKINNIE: Let me rephrase that.

19 BY ATTORNEY MCKINNIE:

20 Q. They are locked to the deployed or extended
21 position?

22 ATTORNEY SHULL: Object to the form of the question.

23 A. I don't know if they're locked or not.

24 BY ATTORNEY MCKINNIE:

25 Q. Do you agree with me that Figure 15 shows the blades

1 in a retracted position?

2 A. I do.

3 Q. And you agree with me that Figure 18 and 16 show the
4 blades in an extended position?

5 A. I do.

6 Q. Are you aware if the blades can then return back to
7 the retracted position as shown in Figure 15?

8 ATTORNEY SHULL: Object to the form of the question.

9 A. Do I know if they can return back to the -- go from
10 18 to 15?

11 BY ATTORNEY MCKINNIE:

12 Q. Correct.

13 A. I would say they probably could. Well, yeah. They
14 could go back.

15 Q. What force allows them to go back to 15?

16 A. Well, the user can put them back to 15, or
17 theoretically, if it went through the animal and you pulled it
18 back out.

19 Q. Going back to this second embodiment, again, would
20 you agree Figure 10 is the retracted position and Figure 11 is
21 the extended position of the blades?

22 A. 10 is retracted and 11 is deployed, yes. I would
23 agree.

24 Q. And these blades are locked because of the tabs on
25 item 222, correct?

1 ATTORNEY SHULL: Object to the form of the question.

2 A. Yes. They can lock.

3 BY ATTORNEY MCKINNIE:

4 Q. And there is no intent on Vandewater that the blades
5 on the second embodiment return from the deployed position to
6 the retracted position within the animal during its course of
7 the flight?

8 ATTORNEY SHULL: Object to the form of the question.

9 A. I'm not sure what that -- what that matters given
10 the claims of Flanagan.

11 BY ATTORNEY MCKINNIE:

12 Q. I'm asking you that question.

13 A. Would you repeat it one more time?

14 (The previous question was read out loud by the
15 certified stenographer: Question: "And there is no
16 intent on Vandewater that the blades on the second
17 embodiment return from the deployed position to the
18 retracted position within the animal during its course of
19 the flight?")

20 ATTORNEY SHULL: Object to the form of the question.

21 A. Well, yeah, they do because, as it goes through --
22 So, they're deployed in Figure 11, as it goes through,
23 those -- that pivots on 216, and depending on which way it
24 pivots, it goes back to the retracted position. The retracted
25 position defined in Flanagan isn't -- isn't how you're

1 depicting it. It's simply the first -- how would I describe
2 that? The first and the second and the distance -- the
3 greater distance of the second member has nothing to do with
4 the broadhead folded up, if that answers your question.

5 BY ATTORNEY MCKINNIE:

6 Q. So, you're stating that because the blade, as shown
7 in Figure 11, can pivot around 216, 213, the blade may end up
8 being sort of in the position that is shown in Figure 10; is
9 that correct?

10 A. Correct.

11 Q. Now, when it -- When Figure 11 -- If 213 were to
12 move into that position, 212 would not also be in that
13 retracted position, though, would it?

14 A. It would not.

15 Q. And then what is the element that is putting blade
16 213 back out to the extended position?

17 ATTORNEY SHULL: Object to the form of the question.

18 A. There isn't an element in that figure described that
19 the patent says that the 310 and 210 drawing figures, the
20 components in 310 can be used on -- on the 200 series.

21 BY ATTORNEY MCKINNIE:

22 Q. Correct me if I'm wrong, I think what you're
23 referencing is in the first embodiment where it discloses this
24 engaging element?

25 A. No, I'm --

1 Q. -- biasing; is that accurate or no?

2 A. No.

3 Q. No?

4 Are you relying on embodiment three, then, as the
5 retaining and biasing element, and you're stating that that
6 biasing and retaining element is almost 317?

7 A. For application for drawing -- to Figures 8 -- is
8 that -- No. We have 4. Yeah, that -- Sorry. Figure 11.
9 Yeah. That biasing and retaining element to go onto -- could
10 be used on Figure 11.

11 Q. How does the biasing element work on -- for 317?

12 A. When the blades are deployed, it -- it biases the
13 322, that knob, that lobe, and the blade's in the extended
14 position.

15 Q. So it's your interpretation in this figure, then,
16 that Figure 18, that the blades can then move in -- back into
17 Figure 15 position and they can slide along that --

18 A. No. I'm sorry. I misspoke. That's not -- That's
19 not what I meant to say. That can be -- they will move back
20 into the retracted position as defined by the claims in
21 Flanagan when they pivot to the left or right according to the
22 first member and second member increasing or decreasing the
23 distance.

24 Q. Are you aware that Flanagan requires a biasing
25 element to bias the blades to the extended position?

1 A. It's 317.

2 **Q. Where is the spring on 317?**

3 A. Well, in the body of the patent it says the biasing
4 element. They don't disclose -- they disclose the use of a
5 spring, but they don't -- they don't show it. These aren't
6 manufacturing drawings, and somebody skilled in the art would
7 know that you could add a spring to that, although you
8 wouldn't need to add a spring because as soon as it biases to
9 the left or the right, it's decreased the first and second
10 distance as required by Flanagan.

11 **Q. So Vandewater describes 317 as a pivot limiter. How**
12 **do you interpret that phrase "pivot limiter"?**

13 ATTORNEY SHULL: Object to the form of the question.

14 A. I'm looking at Figure 18, and by the descriptions of
15 the figure with the -- the post 321 and that slotted channel,
16 323, let's both -- He can call it a pivot limiter. It's a
17 biasing element because that pushes the blades left and right
18 as they pivot on 316.

19 BY ATTORNEY MCKINNIE:

20 **Q. But the blades, would you agree, though, that the**
21 **blades act as unitary action as shown in Figure 18? Once**
22 **they're deployed, similar to our conversation about the -- the**
23 **second embodiment, if 313 is pushed, as you're saying, back to**
24 **the retracted position, blade member 318 is not in the**
25 **retracted position; is that accurate?**

1 ATTORNEY SHULL: Object to the form of the question.

2 A. I would say in one embodiment that would be
3 accurate.

4 BY ATTORNEY MCKINNIE:

5 **Q. In the third embodiment?**

6 A. Yes.

7 **Q. Then you're stating that it automatically returns to**
8 **the center position?**

9 A. No. I didn't state that.

10 **Q. Would you agree that the apparent purpose of**
11 **Vandewater is to pivot the blade along that pivot point when**
12 **it strikes something of a harder density on one side of the**
13 **broadhead? Is that accurate?**

14 A. Let me -- this -- This summarizes it: "An
15 arrowhead -- an arrowhead for use with an arrow in archery
16 includes the body at least one blade pivotally mounted ...
17 (Certified Stenographer asks for clarification.)

18 A. I'm just -- I'm reading the abstract. Let me
19 skip down. "The blade has a cutting edge and a rear edge, the
20 rear edge having a notch and the blades pivot relative to the
21 body in about a pivot axis between the generally centered
22 position and an angled position. The retaining mechanism
23 engages with the notch of the blades when the blade is in the
24 center position impeding pivotal movement of the blade about
25 the pivotal connection." So, the foundation of the design is

1 to -- in my opinion, in number -- in Figure 18 in the deployed
2 position when something strikes, say, 313 or 319, somewhere on
3 the blade, it allows the blade to pivot to a retracted
4 position from a deployed position.

5 BY ATTORNEY MCKINNIE:

6 Q. I'm going to go back to your declaration, Dr. Kuhn.
7 I'm looking at Claim 11 on -- It's page 65 of your
8 declaration. It's in your claim chart in reference to the
9 element, "At least one biasing member biasing the first and
10 second blade members towards the extended positions." You're
11 citing in here, Figures 7 through 12, and you're also, then,
12 citing biasing element 36 which is a ball bearing and a notch,
13 though, it's in embodiment number one. Does this refresh your
14 memory?

15 A. I think Figure 2 as the ball bearing and the notch.

16 Q. And in Figure 2, the biasing element is biasing
17 against that ball bearing, correct?

18 A. It is.

19 Q. Going back to embodiment three, if you look at
20 Figures -- Figure 17 and look at the pivot point, 316, is the
21 blade -- First, is that pivot point in the forward end, in
22 your opinion?

23 ATTORNEY SHULL: Can you repeat the question,
24 please? I didn't hear it.

25 (The previous question was read out loud by the

1 certified stenographer: Question: "Going back to
2 embodiment three, if you look at Figures -- Figure 17 and
3 look at the pivot point 316, is the blade -- First, is
4 that pivot point in the forward end, in your opinion?")

5 ATTORNEY SHULL: Object to the form of the question.

6 A. When the blade moves to the aft position as we
7 talked about, sliding to the aft position, it moves into the
8 pivot position as described in Vandewater -- as described, so
9 the blade moves into the pivot position with the pivot pin on
10 the forward end of the blade as shown in Figure 18.

11 BY ATTORNEY MCKINNIE:

12 Q. So, your suggestion, if I'm understanding correctly,
13 is that the pivot point is not determined until it's at
14 Figure 18; is that accurate?

15 A. It could pivot anywhere along the line, but the
16 pivot position is the forward position, 318.

17 Q. 316 you mean, or 3 --

18 A. 316. I apologize.

19 Q. So, you're saying you can pivot anywhere along that
20 slot, trench, whatever you want to refer to it, 313A and 312A,
21 it can pivot anywhere along that slot --

22 A. It can move. It can move.

23 Q. And if it were to pivot as shown in Figure 17, would
24 that be the forward end, in your opinion?

25 A. No. The forward end is depicted in Figure 18.

1 Q. I want to go up to column eight. Let me just go
2 through the figures here. So, is it -- I'm referring to
3 Figure 1, the first embodiment, because that is the one that
4 has the drawings at least of this engaging element. It is
5 your understanding, then, if this blade were to hit bone on,
6 let's say, 18 and push 18, as you would say, it would go into
7 a retracted position in your terminology, you'd agree with me
8 there's nothing that would automatically return it back to the
9 center, correct?

10 ATTORNEY SHULL: Object to the form of the question.

11 A. In the body of the patent it says you can use the
12 elements in the 300 series, so you would -- one skilled in the
13 art would know that you could take those elements that we were
14 just talking about for the latter figures and use them on
15 Figure 2, Figure 1.

16 BY ATTORNEY MCKINNIE:

17 Q. And so you'd add in that 317 pivot limiter?

18 A. Something -- something along that line. I would
19 know that you would put a biasing element, something --
20 something like -- like described in those figures.

21 Q. So, even though in embodiment three you're still
22 suggesting that you would have to add a spring in there --

23 A. No, I'm not.

24 Q. -- not shown in the drawing?

25 A. No, I'm not.

1 Q. Okay. So, as drawn, you're suggesting, for
2 Figure 18, you push 313 into a retracted position and it will
3 automatically bounce back to an expanded position?

4 A. That's not what the claims say in the Flanagan
5 patent.

6 Q. Well, I'm asking you about Vandewater in Figure 18.

7 A. If that was -- Okay. So, if that was going -- I'll
8 answer your question then: If that was going through an
9 animal and 319 or 313 got pushed, then yes, it would return
10 generally to the center position.

11 Q. What is pushing it back to the centered position?

12 A. Whatever it was encountering what it was going
13 through.

14 Q. So, it's the forces acting on the blade that are
15 making it in the centered position?

16 A. Or -- The answer is yes. Or you could add a
17 spring, which it says you can do.

18 Q. But again, there's no spring shown on the drawing?

19 A. They expressly say that it's not shown, but no, it's
20 not shown in Figure 18.

21 Q. The only spring that is shown in Vandewater on the
22 figures is Figure 2; is that correct?

23 ATTORNEY SHULL: Object to the form of the question.

24 A. Yeah. That's -- I would agree.

25 (Exhibit No. 11 was marked for identification.)

1 BY ATTORNEY MCKINNIE:

2 Q. I'm going to show you Exhibit 11 which is -- I'll
3 represent to you it's Exhibit 1012 to the petition. And
4 you're pronouncing it as the Liechty?

5 A. Liechty.

6 Q. Liechty. Are you familiar with this patent?

7 A. I am.

8 Q. Were you familiar with this patent prior to this
9 dispute?

10 A. I was.

11 Q. And you stated -- I believe you said that you
12 thought that the Grim Reaper commercial embodiment was related
13 to this patent?

14 A. I said I think it could be. The reason why I say
15 that is the guy that owns -- the patent owner owns Grim Reaper
16 broadheads.

17 Q. Is Grim Reaper a brand of -- like, the Crimson
18 Talon, like it's a line of broadheads, or is it a company
19 name?

20 A. I think it's the -- I --

21 Q. Or both?

22 A. I think it's -- I think both.

23 Q. Okay.

24 A. I don't know for sure. The broadhead's called the
25 Grim Reaper.

1 **Q. Okay. Thank you.**

2 A. If that's what this is depicting. I don't -- it's
3 been years since I've seen -- I've held one and used one or
4 touched one or --

5 **Q. I understand.**

6 **Can you tell me briefly how this -- how the**
7 **disclosure in Liechty works? Operates. Excuse me.**

8 A. Figure 2, that broadhead is shot; 58 contacts the
9 animal. The force on 58 overcomes the biasing of the -- the
10 locking of the spring at the bottom of the blades and the
11 blades extend, and then as it goes through an animal, let's
12 see -- that's figure -- sorry. Figure 5, that's a -- that's
13 the drawing of it going through an animal. The blades are
14 biased by 80 and maybe 82, two lines on the spring. And they
15 pivot about -- pivot point 70, and the arrows show the
16 direction of the biasing.

17 **Q. And that's urging -- So, Figure 1 and 2 are showing**
18 **the blades in the retracted position?**

19 ATTORNEY SHULL: Object to the form of the question.

20 BY ATTORNEY MCKINNIE:

21 **Q. Figure 5 is showing the blades in the extended**
22 **position?**

23 A. No.

24 ATTORNEY SHULL: Object to the form of the question.

25 A. Actually -- Actually, Figure 5 shows them in the

1 retracted position and the arrows indicate the direction to
2 push them into the deployed position; thus, increasing the
3 distance between the first and second blade member to the
4 ferrule.

5 BY ATTORNEY MCKINNIE:

6 **Q. So, your suggestion is Figure 5 is not showing the**
7 **blades in a deployed position. You're showing that's showing**
8 **that in a retracted position?**

9 A. I am. And I believe the abstract pretty much
10 delineates how this -- what I just said -- Well, let's see.
11 "When the arrowhead penetrates an object, the blade edges are
12 disengaged from the holding elements. The blades freely
13 rotate to an open position with the other opposing blade end
14 of each blade rotating away from the body urging -- the urging
15 force continuously urges the cutting edges of the blade in a
16 forward direction when the blades are in the open position
17 further slicing uncut and unpenetrated tissue."

18 **Q. But even though the specification says it goes into**
19 **an open position, you're suggesting that it's actually going**
20 **into a retracted position?**

21 A. Well, by definition -- I'm looking at this from the
22 Flanagan claims. I'm not interpreting what the -- what he
23 calls stuff. It's like the pivot limiter versus a biasing
24 element. And Figure 5 as noted by 80 or 82, the spring, you
25 can see that the spring is nearly compressed but not

1 completely compressed so that those blades could go further
2 down into a further retracted position. And then if you look
3 at Figure, say, 3 or 4, too, the spring, you can see that the
4 spring will open up in Figure 5 and push the blades forward to
5 a deployed position, so mimicking the Flanagan patent.

6 Q. But the pivot point, though, is 52, correct?

7 A. It is.

8 Q. And you're suggesting that is at the forward end?

9 ATTORNEY SHULL: Object to the form of the question.

10 A. The forward end of what?

11 BY ATTORNEY MCKINNIE:

12 Q. Well, let's go look at Claim 11 for Flanagan. "A
13 ferrule having a rearward end configured for attachment to the
14 shaft and an opposite forward end with the ferrule body
15 extending therebetween." So, let's look at Liechty. Would
16 you say --

17 A. Go back, would you? I -- I was --

18 Q. Sure.

19 A. Your mind works a lot faster than mine does.

20 ATTORNEY SHULL: I think it would be also helpful if
21 you make reference to where he's making this opinion in
22 his declaration. It's unclear what you're referring to.
23 When you reference his opinion in here, you're not
24 centering on his direct testimony, so it's vague and
25 ambiguous.

1 BY ATTORNEY MCKINNIE:

2 Q. So, under Claim 11 under the first element, the
3 first element paragraph it says, "A ferrule having a rearward
4 end configured for attachment to the shaft and an opposite
5 forward end with a ferrule body extending therebetween.

6 "The forward end of the ferrule defining the forward
7 tip of the arrow and being fixed with respect to the ferrule
8 body." So, let's look at Liechty. Would you agree that 32
9 appears to be pointing to a -- to the tip, to the forward end
10 of the ferrule?

11 ATTORNEY SHULL: Object to the form of the question.
12 It mischaracterizes his direct testimony. That's not
13 what his testimony is.

14 A. Yeah. I was going to say where are we referencing
15 my -- my declaration?

16 BY ATTORNEY MCKINNIE:

17 Q. Dr. Kuhn, I'm asking you a question: Is 32 the
18 forward tip on Liechty?

19 A. Well, your assumption was that in Figure 3 that was
20 the retracted position, so...

21 Q. So, you're suggesting --

22 A. It's not.

23 Q. -- this is the retracted position? Your position is
24 Figure 5 is retracted, correct?

25 A. Correct.

1 **Q. Is 32 the forward tip of the ferrule body?**

2 A. Let's go on my declaration where we're talking about
3 this. Can you refer me to that?

4 ATTORNEY SHULL: Or you can just turn to that,
5 Dr. Kuhn. Just turn to where your declaration -- where
6 you're making that statement.

7 A. I don't know exactly where that is. I don't want to
8 get wrapped around terms that one inventor is using that don't
9 apply to -- to the -- what we're talking about in the patent.
10 The Flanagan patent.

11 BY ATTORNEY MCKINNIE:

12 **Q. Well, you can go to 154.**

13 A. Okay.

14 **Q. Those are your annotations. The words were added by**
15 **you; is that accurate?**

16 A. That's correct.

17 **Q. So, you have a forward end. You have the ferrule.**
18 **You have the rearward end. So, now I want to reference back**
19 **to Flanagan where it says, "A first blade member having a**
20 **forward end pivotally interconnected with the ferrule body and**
21 **an opposite rearward end." So, you're suggesting that it's**
22 **interconnected at the forward end -- I'm not entirely**
23 **understanding why you're referencing that as the forward end**
24 **when it's clearly at the back of the ferrule on the broadhead.**

25 A. I think -- I think, as I said, Figure 5 depicts what

1 the issue is, which is retracted versus deployed, the biasing
2 member, the direction of the biasing.

3 Q. Well, let's look at page 156.

4 A. The image that is on the right with the blades at
5 90-degree angle to the --

6 A. I think we -- I think we need to look at Figure 5 on
7 155.

8 Q. Well, I -- Okay. What did you want to tell me
9 about it?

10 A. It says, "Illustrate in Figure 5 annular spring --
11 (Certified Stenographer asks for clarification.)

12 A. I'm sorry. I don't know why I keep doing that.
13 "Liechty II discloses this requirement of claim 1. Liechty
14 discloses: As illustrated in Figure 5, annular spring 80
15 drives continuously urges cutting edge 54 of each blade 50 in
16 a forward direction, further slicing or cutting -- or further
17 slicing uncut or unpenetrated tissue."

18 BY ATTORNEY MCKINNIE:

19 Q. So, looking at page 156, though, you're
20 acknowledging the blade is moving in the, quote, forward
21 direction, which puts it more towards close to the ferrule
22 body, correct? I mean, that's swinging that outside -- where
23 you have that second end is swinging up towards the ferrule
24 body, correct?

25 A. Increasing the distance of the first -- between the

1 first and the second end.

2 Q. Now, how did you arrive --

3 A. Are you -- Are you asking me if those blades
4 rotate, they're going to rotate all the way up?

5 Q. They're rotating towards that direction though,
6 correct?

7 A. They're being biased -- biased up.

8 Q. Only when a force is being applied against them,
9 correct?

10 A. When they're being shot -- When it's in Figure 5
11 when it's being shot through an animal, here's a force being
12 applied to the blade member, correct.

13 Q. So, how does it end up at the figure that you've
14 added on 156?

15 A. That's just -- I think in retrospect -- in
16 retrospect, I think that that's an exaggerated illustration.
17 I think it should be -- Figure 5 should be here and then the
18 annotated or the -- the illustration that -- on the right,
19 could be like this. I think the exaggeration is what is
20 confusing because it goes from here, to here, to here, to
21 here, to here. That was an exaggeration to show you that the
22 blades were being urged in a forward motion.

23 Q. Do you have any data to back that up as to where it
24 would be or why you'd be -- you're saying that's wrong now?

25 ATTORNEY SHULL: Object to form.

1 A. I'm not saying it's wrong.

2 BY ATTORNEY MCKINNIE:

3 Q. Sorry. An exaggeration.

4 A. I'm not saying it's an exaggeration. I'm saying --
5 I'm saying that -- that it shows an exaggeration of the blade
6 movement. They can move from anywhere in between there. The
7 Delta could be a millimeter. It could be a centimeter. It
8 could be -- as long as it's increasing the first -- as long as
9 the distances between retracted and deployed are increased.
10 Doesn't say how much, in Flanagan, it needs to be increased or
11 decreased. It just says that they increase or decrease.

12 Q. Could it be possible that that spring could rotate
13 those blades all the way back up?

14 A. No.

15 Q. Why not?

16 A. Well, because if you look at Figure -- I'm not on
17 Liechty. I think we're getting off on a tangent here because
18 all that matters is when the -- when the broadhead is going
19 through the animal as in Figure 5, it's not going -- the
20 blades are not going to be urged into that position. They're
21 going to be urged forward but not to the -- as what you called
22 the retracted position.

23 Q. And you're just -- I mean, does the specification
24 say that?

25 A. One skilled in the art would know that. I don't

1 think that every single thing is going to be delineated in the
2 specification. That's my opinion as the expert and having
3 designed lots of broadheads with springs.

4 **Q. Just so we're clear, the drawing that you have on**
5 **156, though, every drawing that you have in which the blades**
6 **are at a 90-degree angle to the ferrule body are ones that you**
7 **generated that were not in the Liechty patent, correct?**

8 ATTORNEY SHULL: Object to the form of the question.

9 A. Figure 5 is in the Liechty patent. The noted
10 drawing on the right is -- Yes. That's how I modified that
11 drawing.

12 BY ATTORNEY MCKINNIE:

13 **Q. Right. Page 156 and 158, it -- essentially, I was**
14 **just trying to get a --**

15 A. It was illustrative because when I read the Liechty
16 patent, you can get wrapped around the axle -- excuse my
17 street lingo; whatever it is. You can get wrapped around the
18 axle about the words used: Deployed, retracted. And if
19 you're not paying attention with the patent, with the
20 mechanism, how the mechanism actually works, you can go, oh,
21 that's not the same thing. But it is. Figure 5 shows you
22 that it's the same thing. Deployed, retracted, urging the
23 blades forward; yes, it's going through an animal. And no,
24 it's not going to get to the -- to the annotated figure on the
25 right.

1 **Q. All right. Last patent. This is Exhibit 12.**

2 ATTORNEY SHULL: Let's take a quick break. We've
3 almost gone for an hour. I need a bio break.

4 (Recess taken from 1:29 p.m. until 1:36 p.m.)

5 THE WITNESS: Can I make -- can I add a note to --
6 the -- I think that I'm confusing -- I'm confusing Jason.
7 Not my Jason, but the other one.

8 The Figure 5, the annotated one, when I said that
9 the -- I'm using the word "exaggerated," that's the --
10 Did I lose you?

11 BY ATTORNEY MCKINNIE:

12 **Q. I'm trying to find the picture.**

13 A. The one on the right -- the one on the left -- I'm
14 struggling to make myself... The one on the left is when it's
15 going through the animal. And the blades are being urged
16 forward increasing the distance, and the figure on the right
17 shows how that -- how those blades can be urged forward. And
18 depending on the viscosity, whatever the broadhead on the left
19 is going through, those blades can be urged forward along some
20 linear line or -- to get it to the -- if it's not -- if it
21 went -- if it went through a stomach, a void stomach or a
22 lung, then the blades could be urged the way they are noted on
23 the right side. That's to show -- does that make sense? I --
24 that's -- I --

25 **Q. If I understand you, you're suggesting that if the**

1 force going against the blade while going through the animal,
2 the weaker that force is then the more biasing force, in your
3 opinion, from the spring moves those blades to the forward
4 position?

5 A. Yeah. It's -- it's the -- the amount of force on
6 the blades as it's going through the animal in Figure 5. It's
7 a balancing act between Figure 5 and the annotated -- I hope
8 annotated is the right word -- figure on the right where the
9 blades are perpendicular to the ferrule. The more viscous it
10 is, they're going to stay further down. The less viscous, the
11 further up they go. And if you went through a lung that has
12 no viscosity -- let's argue that it has air -- then the blades
13 could be urged into that position on the right. I didn't want
14 my word "exaggerated" misinterpreted. That's all I had.

15 Q. And how did you reach the conclusion that they could
16 be at that 90-degree angle?

17 A. By one skilled in the art. It's just urging the
18 blades forward.

19 Q. There's nothing in the specification that expressly
20 told you the blades could be at this 90-degree angle if they
21 were going through lung tissue or stomach tissue?

22 ATTORNEY SHULL: Object to the form of the question.

23 A. It's dependent on the viscosity or the hardness of
24 whatever the blades encounter in Figure 5. If there's less
25 hardness, the blades are going to move forward further. If

1 it's more -- If it's harder, the blades going to move further
2 back; hence, the spring on the -- The reason why is
3 because -- now, I'm not on the right -- the blades -- The
4 spring is the key on the right. It shows the spring extended.
5 So, that's -- In my opinion, that's the extent of where the
6 blades with go.

7 Q. That's -- in your opinion, that's the maximum amount
8 is --

9 A. That's --

10 ATTORNEY SHULL: Object to the form of the question.

11 A. -- we're kind of -- we're kind of nitpicking now.

12 That's my opinion as one skilled in the art after building and
13 designing broadheads that have springs that bias the blades.

14 (Exhibit No. 12 was marked for identification.)

15 BY ATTORNEY MCKINNIE:

16 Q. All right. Let's -- I don't know if I introduced it
17 or not. Exhibit 12 is Exhibit 1013 to the IPR petition, and
18 it is the -- referred to as the Hendricks patent.

19 Dr. Kuhn, do you recognize this?

20 A. I do.

21 Q. And this is entitled A Spearhead With A Swingable
22 Barb. And it is your opinion that "barb" can -- is a synonym
23 for "blade" --

24 A. It is.

25 Q. -- in this patent, correct?

1 A. It is. It's also my contention that anyone skilled
2 in the art could look at the -- look at the figures with that
3 26 and know that can be a blade.

4 **Q. Do you recall what the purpose of this invention**
5 **was?**

6 A. Do I recall what the purpose of this invention is?

7 **Q. Correct. Of the Hendricks patent. I'll just**
8 **reference you here to column one where it says, "The cocking**
9 **action between the barb and the catch permits the barb to be**
10 **quickly closed and the head withdrawn from the target with**
11 **only a minimum expenditure of time and effort on behalf of the**
12 **weapon user." When you read that, do you understand that to**
13 **mean this invention is intending to create a faster way to**
14 **remove a spear that has a barb on it from the animal that it**
15 **was pushed into?**

16 ATTORNEY SHULL: Object to the form of the question.

17 A. What the inventor's purpose as stated there, to me
18 as one skilled in the art is of little consequence because
19 what I do -- did, is I look at the -- we're back to pivot
20 limiter and biasing element. I'm looking at the drawings,
21 Figure 3, and seeing that retaining mechanism a biasing
22 member, a pivot point; those things that are required by the
23 Flanagan patent. I don't know what the -- what his intention
24 was or if that's germane to what -- to what I was looking at
25 to determine if this was pertinent for the Flanagan patent.

1 I'm sure that's what -- if that's what it says, he says his
2 purpose was.

3 BY ATTORNEY MCKINNIE:

4 Q. So, you looked at the -- So, then, in the Flanagan
5 patent, there was a second blade member and you saw in
6 Hendricks that there was only one blade, correct?

7 A. Correct.

8 ATTORNEY SHULL: Object to the form of the question.

9 BY ATTORNEY MCKINNIE:

10 Q. I used the term "blade" as in that -- that's how you
11 refer to it. Hendricks refers to it as a barb.

12 So, then you determined, then, going back to your
13 declaration, page 138 -- page 138 you determined that you
14 could add a second barb on the other side of the ferrule head,
15 correct?

16 A. I said blade. Not barb.

17 Q. You could add a second blade to the Hendricks patent
18 similar to how Flanagan described it?

19 A. You want -- Sorry, Jason, you're page what?

20 Q. 138.

21 A. Okay. Thank you. I apologize for being
22 absent-minded. Yes. That's what I determined.

23 Q. And this drawing is one that you created, correct?

24 A. Correct.

25 Q. And so, the drawings on 138 -- sorry. I'm going too

1 fast here. 139, 140, 141, 142, 143, are all drawings that you
2 added or manipulated from Hendricks, correct?

3 A. I mirrored -- I mirrored Hendricks' mechanical
4 contrivance if that's what you'd call it. And I mirrored it,
5 yes, to produce those drawings, figures.

6 Q. So, I'm looking at Figure 3 on the Hendricks patent,
7 and it looks like the barb, which you are referring to as a
8 blade, is within a slot that generally takes up the entire
9 ferrule unit; whereas, now, in the drawings that you have
10 made, you have almost doubled the width of the ferrule body;
11 is that accurate?

12 A. I don't think I claimed that it was to scale, but
13 yes, for illustrative purposes.

14 Q. So, now, if Hendricks wanted to remove -- So, under
15 your position here, if Hendricks had done this, both barbs, or
16 as you're referring to them as blade members, would be
17 deployed within the animal or the fish, correct?

18 A. They would be deployed in whatever ...

19 Q. Target?

20 A. Target releases the retaining mechanism.

21 Q. And as Hendricks expressly states as the purpose of
22 the patent, to go back out, that, "The cocking action between
23 the barb and the catch permits the barb to be quickly closed
24 and the head withdrawn from the target with only minimal
25 expenditure of time and effort." So, if you had two -- what

1 you're referring to as blade members, now -- would that double
2 the amount of time necessary to now pull the entire unit out
3 of the target?

4 ATTORNEY SHULL: Object to the form of the question.

5 A. I think you may be misunderstanding what he's
6 saying. When you shoot this and it goes through an animal,
7 the blades are deployed. They've been urged by the biasing
8 element. And if there's two, it's out the other side of the
9 animal.

10 To retract it, you merely reach down and
11 go [indicating] -- Jason, can you see me? You go [indicating]
12 and it closes it. If you had it one-sided and you went to
13 close it, you'd do that [indicating]. It's the same. You're
14 not doubling any time, any -- anything it's the same.
15 Same-same.

16 Q. So, you don't think there's any extra effort by
17 adding -- You're assuming that the size of it would fit
18 between two hands or two fingers, then? It's not a giant
19 spear? We don't have any --

20 A. No. I don't think you should mistake my
21 illustrations as a manufacturing drawing. And one skilled in
22 the art would know how to -- to design that to scale.

23 Q. Well, the point of the barb for Hendricks is to help
24 maintain the spear or like-weapon within the target, correct?

25 ATTORNEY SHULL: Object to the form of the question.

1 A. That's what the -- that's what he says, but as I
2 said, looking at this simply from one skilled in the art, that
3 is a really good mechanical machine there as far as biasing
4 the blade with a simple retaining mechanism that does exactly
5 what Flanagan does and you simply mirror it, and whether you
6 have to scale it or not, evidently you would have to, maybe
7 you wouldn't, you could shrink the size of the blade. The
8 blade doesn't have to be that wide. That blade is very wide.
9 You could shrink the size of the blade. You could get it to
10 where it was a consumable, marketable broadhead by simply
11 mirroring what's in Figure 3.

12 BY ATTORNEY MCKINNIE:

13 **Q. And Flanagan had the second blade so you added the**
14 **second blade on Hendricks?**

15 ATTORNEY SHULL: Object to the form of the question.

16 A. What I'm telling you is not -- is not uncommon for
17 people that design broadheads. Nobody designs one side of a
18 mechanical -- or two sides of a mechanical broadhead at the
19 same time. It's -- it's common to design one side and then
20 the other. And the prior art teaches that.

21 Probably the most decorated broadhead designer ever
22 is Robert Mizek who worked for New Archery Products, and he --
23 in his prior art, he demonstrates the one-sided mechanical,
24 and then in his following figures he shows how he doubles both
25 sides. This is not uncommon at all. At all. Any -- any

1 first-year CAD person could do this. And that's how they
2 would do it with the -- In fact, that's exactly how you would
3 design a broadhead using CAD. You would -- you would mock-up
4 the one side and then you would -- you -- for lack of a better
5 word, copy and paste it and mirror it on the other side. No
6 stretch of any -- there's -- There's no imagination needed to
7 do this.

8 Q. I may be done, but before that goes, Dr. Kuhn, have
9 you had any conversations with Mr. Shull during the breaks?

10 A. I have not.

11 Q. Have you read any other material or done any --
12 talked to anybody else?

13 A. I went to the bathroom, and I did get another
14 Dr. Pepper.

15 Q. Okay. Nothing wrong with that.

16 A. I'm not being tongue-in-cheek. I just --

17 Q. I understand. I have no further questions. I'll
18 pass the witness.

19 A. I do appreciate, on a side note, you being patient
20 with me. I --

21 Q. You were being patient with me, so I appreciate that
22 as well.

23 A. Well, there's a lot of stress, and we're both -- we
24 both want the best for who we represent.

25 ATTORNEY MCKINNIE: Correct. Are we done, or,

1 Jason, did you have anything?

2 ATTORNEY SHULL: Yeah. I don't have any follow-up
3 questions.

4 ATTORNEY MCKINNIE: All right. Thank you for time.
5 (Discussion off the record.)

6 ATTORNEY SHULL: Yeah, he'll read it, and then send
7 it to me.

8 CERTIFIED STENOGRAPHER: And did you need me to
9 produce a transcript, Mr. McKinnie?

10 ATTORNEY MCKINNIE: Yes. As far as the exhibits go,
11 did you want me to email those to you?

12 CERTIFIED STENOGRAPHER: Yes, please.
13 (Discussion off the record.)

14 CERTIFIED STENOGRAPHER: Mr. Shull, did you want a
15 copy of the transcript?

16 ATTORNEY SHULL: Yes, please.

17 (The videoconferenced deposition of TODD A. KUHN,
18 PHD, concluded at 1:57 p.m. CST Reading and signing were
19 not waived.)

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1 CERTIFICATE OF OATH

2 STATE OF FLORIDA }
3 COUNTY OF GULF }

4
5 I, the undersigned authority, certify that
6 TODD A. KUHN, PHD appeared remotely via videoconference and
7 was duly sworn on Friday, September 6, 2024.

8
9
10 *Lisa M. Sparling*

11 Lisa M. Sparling, RPR, FPR
12 Notary Public - State of Florida
13 My Commission No. HH 313063
14 Expires: July 1, 2025

15 Personally Known _____
16 OR Produced Identification X
17 Type of Identification Produced: Driver's License
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DEPOSITION CERTIFICATE

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STATE OF FLORIDA }

COUNTY OF GULF }

I, LISA M. SPARLING, Registered Professional
Reporter, Florida Professional Reporter, Notary Public in and
for the State of Florida at Large, do hereby certify that I
was authorized to and did stenographically report the
foregoing videoconferenced deposition of TODD A. KUHN, PHD,
and that the transcript is a true record of the testimony
given by the witness.

I FURTHER CERTIFY that I am neither an attorney nor
counsel for the parties to this cause, nor a relative or
employee of any attorney or party connected with this
litigation, and that I have no financial interest in the
outcome of this action.

IN WITNESS WHEREOF, I have hereunto subscribed my
name and affixed my seal this 11th day of September, 2024, at
City of Port St. Joe, Gulf County, Florida.

Lisa M. Sparling

Lisa M. Sparling, RPR, FPR, Notary Public
State of Florida at Large

1 RE: Bowmar v. Veteran's Innovative
PATENT NO: 8,043,177
2 DATE OF DEPOSITION: Friday, September 6, 2024

3 ERRATA SHEET

4 DO NOT WRITE ON TRANSCRIPT - ENTER CHANGES HERE

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19 Under penalties of perjury, I declare that I have read my
deposition and that it is true and correct subject to any
20 changes in form or substance entered here.

21

22

23

24 TODD A. KUHN, PHD

DATE

25

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