In the Matter Of:

Bowmar Archery v Veterans Innovative

Todd Kuhn PH.D.

September 06, 2024



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Bowmar, Ex. 1040
Bowmar v. Matthew Futtere
IPR2024-00401

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BOWMAR ARCHERY, LLC, Petitioner,

v.

VETERANS INNOVATIVE PRODUCTS, LLC, Patent Owner.

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

Title: ARROWHEAD HAVING COLLAPSIBLE AND OUTWARDLY BIASED BLADES

Inter Partes Review No.: IPR2024-00401

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

DATE TAKEN: Friday, September 6, 2024

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

PLACE: ALL PARTIES REMOTE

Stenographically Reported By:

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Notary Public, State of Florida at Large

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EXAMINATION

Witness Name		Page	Line
TODD A. KUHN, PHD			
Direct By ATTORNEY MCKINNIE:	.....	4	6

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EXHIBITS

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Thereupon,
TODD A. KUHN, PHD,
was called as a witness, and after having been first duly sworn, was examined and testified as follows:
THE WITNESS: I do.
DIRECT EXAMINATION
BY ATTORNEY MCKINNIE:

Q. Morning, Dr. Kuhn. Thank you for joining us today. And can you just identify your name -- full name for the record, please?

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

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

A. Yes, sir.

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

A. I have not.

Q. How did you prepare for today?

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

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

A. I will.

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

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

(Exhibit No. 1 was marked for identification.)

BY ATTORNEY MCKINNIE:

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

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

Q. Okay. And do you recognize this document?

A. I do.

Q. And what is this document?

A. My declaration.

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

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

A. Mine is 168 pages, I think.

Q. Do you have that with you here today?

A. I do.

Q. Do you have any other documents with you?

A. I do.

Q. And what do you have with you?

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

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

A. It is not.

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

A. I do not.

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

A. I do not.

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

A. It is.

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

A. Yes. It does.

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

A. My CV.

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

A. It is.

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

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

Q. What would you do with an audiology degree?

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

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

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

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

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

A. I went into graduate school.

Q. What did you do after 1990?

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

Q. What were you doing there?

A. I was a statistician/research engineer.

Q. Were you using your audiology degrees?

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

(Certified Stenographer asks for clarification.)

BY ATTORNEY MCKINNIE:

Q. How did you get a background in statistics?

A. In undergraduate, graduate school.

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

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

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

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A. That's fair to say.

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

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

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

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

Q. When did you attend Colombia Southern University?

A. I graduated in 1996.

Q. What years were you there?

A. 1995 to 1996.

Q. Was this in-person or remote?

A. Distance learning.

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

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

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

Q. Where is Colombia Southern University?

A. It's in Alabama.

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

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

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

A. Yes, sir.

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

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

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

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

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

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

A. I did.

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

A. It did.

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

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

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

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

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

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

A. I had a dissertation.

Q. Dissertation. And what was your dissertation on?

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

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

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

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

A. Yes, sir.

Q. Not the thesis?

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

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

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

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

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

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

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

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

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

A. I did not.

Q. Did you take any classes regarding aerospace engineering?

A. I did not.

Q. Take any course work regarding aerodynamics?

A. I did not.

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

A. I moved to Maryland to open an archery broadhead

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business.
Q. What was the name of that company?
A. 2XJ Enterprises, Inc.
Q. Did you open that company by yourself?
A. I did not. I had a partner.
Q. Who was that?
A. Scott Mackie, M-a-c-k-i-e.
Q. How did you know Scott Mackie?
A. He and I both played for the Cleveland Indians.
Q. That is a job we did not go over. So, I guess you were a professional baseball player?
A. I was.
Q. And when was that?
A. In 1983 to 1987. 1983 to '87, yeah.
Q. So you started college at University of Central Florida before your career ended?
A. Did not. I started my college career at Southwest Baptist University in Bolivar, Missouri.
Q. Is that while you were playing or before --
A. That's before. That was in 1979 or 1980. One way or another.
Q. Okay. So, when you went to the University of Central Florida, you already had some coursework done that transferred over --
A. Quite a bit -- had quite a bit done. I had attended

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Southwest Baptist University on a baseball scholarship and then I transferred to the University of Montevallo in Montevallo, Alabama, on a baseball scholarship. And then I went to New Mexico State University. And then -- and then I signed with the San Francisco Giants in 1984.
Q. Okay. So, you were a undergraduate baseball player, got coursework, got credit; what were your degree disciplines when you were at those other schools?
A. Communicative disorders.
Q. Would you say that's related to audiology?
A. It is. Communicative disorders -- there's two disciplines. There's speech pathology and audiology. So, you take a course track for either speech pathology or audiology. Typically, the undergraduate work is split between speech pathology with ancillary courses in audiology. And then when you do your masters, it's -- the concentration is on one or the other: Speech pathology or audiology.
Q. That makes sense.
So, you moved to Maryland in 2005 to start 2XJ Enterprises?
ATTORNEY SHULL: Object to the form of the question.
BY ATTORNEY MCKINNIE:
Q. You can answer if you understood what I was saying.
A. No. It was already -- it was already -- it was already started. My business partner had already started it.

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Q. When did he start it?
A. I want to say 2003.
Q. Did he start it by himself in 2003?
A. No.
Q. He start it with you in 2003?
A. We did.
Q. Would you consider it a secondary job to your private contractor job at that time in 2003 --
A. That would be one function --
ATTORNEY SHULL: -- object to the form of the question.
CERTIFIED STENOGRAPHER: There was cross-talk and I didn't hear the entire answer.
(Certified Stenographer asks for clarification.)
ATTORNEY MCKINNIE: Let me just start it again.
BY ATTORNEY MCKINNIE:
Q. When you moved in 2005 to Maryland, was that so you could focus your full-time efforts on 2XJ Enterprises?
A. Yes.
Q. Were you and Scott Mackie equal co-owners?
A. We were.
Q. In your declaration, you state you founded and operated two archery accessory companies: Mid-Atlantic Archery Products and 2XJ Enterprises from approximately 2002 to 2012. I believe you've testified, then, that 2XJ

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Enterprises started in 2003. When did Mid-Atlantic Archery Products start?
A. Well, it would have been 2002 if that's what I put in there because that's -- I don't have the exact date in front of me, but if I said 2002, I assume that's when we were incorporated. 2XJ was a -- was the company until we went from broadheads. And then I invented a design -- invented and designed an archery arrow rest, an automatic archery arrow rest.
(Certified Stenographer asks for clarification.)
THE WITNESS: Arrow rest.
BY ATTORNEY SHULL:
Q. What is an arrow rest?
A. It's a part of an archery bow that the arrow rests on -- I hate to be -- you put the -- the end of the arrow on the string, and then then the other end of the arrow -- the forward end of the arrow lays on the arrow rest.
Q. And I'm a little confused. Which company were you working with when you invented that?
A. We changed the company to Mid-Atlantic Archery Products to remove any confusion about who the -- who the products were built by, the broadheads and the arrow rest. And then we branched off into other accessories with Mid-Atlantic Archery Products.
Q. So, would you characterize Mid-Atlantic Archery

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Products as being products for bows; whereas, 2XJ Enterprises would be arrowheads?
A. I would characterize them as both archery products. bowhunting products.
Q. Was the ownership of Mid-Atlantic Archery the same as the ownership of 2XJ?
A. It was.
Q. So, for lack of a better word, you had some products lines that you were selling through Mid-Atlantic Archery Products and different product lines being sold through 2XJ Enterprises?
A. Initially. Eventually, 2XJ was rolled into Mid-Atlantic.
Q. And when did that roll-in occur?
A. I don't know the exact date.
Q. Why were they combined?
A. Because an accountant told us to combine them.
Q. Did one of these companies operate under the name Crimson Talon?
A. No.
Q. What is the term -- is Crimson Talon one of the products that one of those companies told?
A. Crimson Talon was the broadhead -- excuse me -- was the broadhead line, the line of broadheads.
Q. And who is -- who sold that line of broadheads?

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A. 2XJ, initially. And then after the two companies were rolled together, Mid-Atlantic Archery.
Q. Did you -- We'll discuss it later, but you indicated that you developed 19 -- or invented subject matter that became -- ultimately became 19 issued patents. Did you own all 19 of those patents individually?
A. I was the named inventor, and then the broadhead patents were assigned to 2XJ or Mid-Atlantic; I don't remember which one of the two.
Q. Were you compensated for those assignments?
A. You mean was I paid extra money, or ... I don't understand your question.
Q. Did 2XJ have to purchase the patents from you?
A. No. I -- I assigned them.
Q. Were you working for 2XJ when you invented these -- the technology that ultimately had become these patents?
A. I wasn't -- The first patent, as best of my recollection, was when 2XJ was incorporated, but I didn't assign it after it was issued. I didn't assign it for some time after. And I don't know the years.
Q. So just to clarify, the issuance on at least some of these broadhead patents went to you directly and then later you assigned them to 2XJ?
A. They all went to me, and then a -- and then I issued them as far as -- as far as I can remember. I was the named

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inventor. There wasn't -- there weren't any co-inventors.
Q. Did Scott Mackie do any inventing as well?
A. None.
Q. Were there any other owners brought in to either Mid-Atlantic or 2XJ from 2002 to 2012 other than you and Scott Mackie?
A. There wasn't.
Q. And according to your declaration, it says that you founded and operated them until 2012. What happened in 2012?
A. We had a -- Mr. Mackie and myself had a falling out over the operation of the financials of the company, and I left the company and -- and I left the company.
Q. What happened to your ownership share?
A. I assume it was dissolved.
Q. So, Scott Mackie never bought you out?
A. No. The company went bankrupt. And all the assets were assumed by the bank.
Q. When did the company go bankrupt?
A. I want to say in 2013 or so.
Q. After you left?
A. After I left.
Q. Are there still Crimson Talon broadheads being sold on the market?
A. I think somebody sells -- I think another company usurped the name and is manufacturing them and selling them.

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I saw them -- a folding table booth at one of the ATA shows -- Archery Trade Association shows several years after the company dissolved.
Q. To your knowledge, they are not related to the 2XJ Enterprises?
A. My understanding is they're -- they were -- This is my understanding: Is that it was a couple guys that knew that the company went under and that they were fans of the broadheads, and they decided that they were going to start manufacturing and try to sell them.
Q. So, did they -- To your knowledge, did they manufacture this -- the product using the intellectual property that you developed?
A. It's a -- They were direct copies of the Crimson Talon broadhead that I designed.
Q. Okay. Was your Crimson Talon broadhead protected by any of the patents that you owned?
A. It was.
Q. So, who owned the patents at that time and after 2013?
A. Well, 2XJ or Mid-Atlantic. 2XJ or Mid-Atlantic.
Q. And then what happened at the bankruptcy? Who owned the --
A. I was trying -- I was trying to think if the -- if the bank took possession of the intellectual property which I

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don't know.
Q. Do you know if those patents are still active or not?
A. No, I don't. I think they've expired.
Q. Did you receive any royalties for any sales of products after 2012?
A. No.
Q. Did you ever receive royalties for sales on products prior to 2012?
A. Royalties? No.
Q. Did you just share in the profits of the company with Mr. Mackie?
A. I did.
Q. Were there profits?
A. That's arguable. That's what led to the 2012 departure.
Q. Did you have any other paid income from 2005 to 2012?
A. Yeah. I do instruction manuals for the hunting industry. Mostly tree stand manufacturers.
Q. And do you do that through a company or just through you individually?
A. Myself, individually.
Q. And you said that's for tree stands?
A. Yes. The majority of.

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Q. Do you make any instruction manuals for broadheads or bowhunting?
A. I've done instruction manuals for crossbows for safety harnesses that are ancillary to tree stand use.
Q. Would it matter in your instruction manuals -- Regarding crossbows, would it matter if there was a broadhead or, like, a fixed blade or mechanical insert? Would that have any bearing on your instruction manual on the crossbow?
A. No, because it was an instruction use manual for the crossbow. It wouldn't include broadheads.
Q. Were you in Maryland, then, through 2012?
A. I was.
Q. And then where did you live after 2012?
A. Mississippi.
Q. What did you do in Mississippi?
A. I worked at the Stennis, S-t-e-n-n-i-s, Space Center and at the Michoud, M-i-c-h-o-u-d. It's in Louisiana. It's another NASA center.
Q. And what did you do at those locations?
A. I was the safety manager.
Q. And how long did you work in Mississippi at those jobs approximately?
A. A year and a half or two.
Q. For each or total?
A. Total.

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Q. And then what did you do -- So, that puts you around 2014. What did you do then?
A. 2014? I guess I was semi-retired. I still did consulting work for instruction manuals.
Q. So, since 2014 other than the instruction manuals, did you receive any other paid income?
A. Since 2014?
Q. Correct.
A. Yes. Subsequently, I moved to Florida in 2017 and started as editor of Game & Fish Magazine from 2017 to 2023, full-time.
Q. And what was the magazine?
A. Game, G-a-m-e, & -- ampersand -- Fish.
Q. So, you were only semi-retired for three years then?
A. Yeah.
Q. And then in 2023 did you leave that job?
A. I did.
Q. And are you now fully retired, or what are you doing now?
A. I'm still doing some consulting work, outdoor consulting work.
Q. On the instruction manuals?
A. Yes.
Q. How did you get into bowhunting?
A. When I -- You want the long version?

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Q. Medium version.
A. When I was probably four or five, my brother got a plastic bow and arrow set for his birthday, and I used it more than he did. And then when I turned five or six, I got -- I was -- I was given a Fred Bear Osage orange long bow and some arrows, and I started shooting things around the house, animals. And from there, just kept pursuing it.
Q. That was 1960s? 1970s? When would that be?
A. 1965, '66.
Q. When did you start hunting deer or other animals, bowhunting?
A. 1990. You said white-tail, right?
Q. When did you start shooting animals with a broadhead?
A. Probably 1970.
Q. And what were you shooting in 1970?
A. Coons.
Q. Would it be fair to say that you've been using bow and arrow and using a broadhead since roughly continuously since 1970, or were there spurts where you would go in and out of the hobby?
A. Oh, I think like any adolescent or teenager there were times when I did it more and sometimes where I did it less, depending on the opportunities, depending on what my friends were doing, our interests at the time.

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Q. And then as a young adult when you were playing baseball, did you still go bowhunting?
A. I did.
Q. And is that where Scott Mackie -- did you introduce it to Scott Mackie at that time?
A. We were the Cleveland Indians, and he mentioned that he bow hunted, and that was kind of our introduction to each other.
Q. What type of arrows did you use, you know, in the 1970s and 1980s?
A. For the most part, wooden. Some fiberglass.
Q. What about the arrowhead?
A. Mostly an -- My next-door neighbor in my neighborhood gave me the -- the heads that I used. He had them in a fishing tackle box, and I -- they were metal broadheads. I don't know the brand or the --
Q. Were they fixed blade?
A. They were.
Q. When did you start to try to design your own broadhead?
A. Probably 1990 or '91.
Q. And why did you do that?
A. I was hunting white-tail and the performance of the ones that I had were not good, so I thought I could build a better design.

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Q. What type of broadhead were you using at that time?
A. Various ones, but a Muzzy for the most part.
Q. Were you using mechanical broadheads?
A. Fixed blade.
Q. You said the performance was not good. What were you trying to improve on?
A. Their flight.
Q. Trying to make the arrow go faster?
A. No. Trying to make it shoot straighter.
Q. At this time were you using a compound bow or the traditional bow?
A. A combination of longbows or a compound.
Q. Is it accurate to say a compound bow gets more velocity on the arrow?
A. It is. Generally speaking.
Q. What aspects of the broadhead were you manipulating to try and improve them in 1990, '91?
ATTORNEY SHULL: Object to the form of the question.
THE WITNESS: I'm not sure what I'm supposed to do when you guys do that.
ATTORNEY MCKINNIE: You can answer still answer the question.
THE WITNESS: Would you repeat it?
CERTIFIED STENOGRAPHER: I can read it back if you'd like.

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ATTORNEY MCKINNIE: Thank you.
(The previous question was read out loud by the certified stenographer: Question: "What aspects of the broadhead were you manipulating to try and improve them in 1990, '91?")
ATTORNEY SHULL: Same objection. Object to the form of the question.
THE WITNESS: I -- do I answer that?
ATTORNEY MCKINNIE: Yes. You can still answer the question.
A. The blades -- the -- kind of everything.
BY ATTORNEY MCKINNIE:
Q. What were you changing on the blades?
A. The geometry.
Q. How would you change them?
A. Well, I had a bin full of parts and of broadheads, and I would interswap the parts and make some parts from other broadheads fit other broadheads that I thought had better aerodynamics or... originally.
Q. Did you ultimately create a new broadhead that you felt performed better in the 1990 to 1991 time frame?
A. No.
Q. When did you -- Let me rephrase.
Have you been redesigning broadhead blades continuously then since 1990 to -- that 1990 to 1991 time

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period?
A. Does that include today? Up until now?
Q. Yes. That would be up until now.
A. No. I'm not -- I'm not designing broadheads currently.
Q. When did you stop designing broadheads?
A. A rough estimate probably 2019, 2020.
Q. So, from around 1990 to about 2019, have you been continuously modifying and designing broadheads?
A. Not continuously, no.
Q. Do you recall when you first made a broadhead that you believed was an improvement over what you had used in the past?
A. Originally, I made a lot of them that I thought was an improvement, but they didn't turn out to be.
Q. But can you identify one modification that you had sort of a eureka moment that this actually worked?
A. The year?
Q. An approximate time.
A. 2000.
Q. So, from 1990 to 2000, had you tried numerous times to improve a broadhead?
A. I did.
Q. And what was that success in 2000?
A. I added airfoils to the broadhead blades.

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Q. What did those airfoils do?
A. When the arrow shot, the laminar flow, the air over the broadhead, induces rotational spin so it spin stabilizes the arrow in the front.
Q. Did you file for a patent application or for a patent protection on that?
A. I did.
Q. Did it issue?
A. It did.
Q. Did you make a commercial version of that product?
A. No. Not of the prototype. There wasn't a version of it, no.
Q. Well, was there ever a commercial version using that patent technology?
A. Yes. Yeah. I thought you meant that prototype that I made, if we made a broadhead that looked like that. Yes. There was a commercial product from that patent.
Q. Who sold that commercial product?
A. 2XJ Enterprises.
Q. Did you ever sell a broadhead prior to 2002 time period?
A. Did I ever sell a broadhead? No.
Q. Was your technology for broadheads ever used in a commercial product prior to 2002?
A. No.

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Q. So, is it fair to say, then, that anything that you invented related to broadheads that was ultimately sold as a product would have been sold by 2XJ or Mid-Atlantic Archery Products?
A. Yes.
Q. Up until these usurpers took the Crimson Talon product line after bankruptcy?
A. Yes. And I didn't have anything to do with whoever these new people are. And I don't know if they're still in business either.
Q. Okay. I've seen in your CV that you have numerous of publications in, like, Outdoor Life and other magazines. Were you paid for those articles?
A. I was.
Q. Approximately how long did you write for Outdoor Life?
A. I was a bowhunting editor for -- I want to say 15 years. Somewhere around -- about that.
Q. What was that time period, time frame? Years. Excuse me.
A. 2000 -- 2001, somewhere around there -- to '15, '16, '17.
Q. How did you get the job in 2000?
A. I had written publications for other bowhunting magazines. I had written other articles for other

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publications on bowhunting. And one of their advertising guys was a bowhunter that worked for Outdoor Life, and I was on a commercial hunt with him. And he was a fan of my work, and he recommended me to the Outdoor Life staff about working for them.
Q. You said you were on a commercial hunt. What does that mean?
A. That's where a manufacturer sponsors a hunt for -- for editors and writers.
Q. Would you have to pay for anything when you went on those hunts?
A. Typically not.
Q. Has Bowmar Archery ever taken you on a commercial hunt?
A. No.
Q. Has Josh Bowmar or his wife Sarah ever taken you on a commercial hunt?
A. No. Never met them.
Q. Has Matt Futtere or any of his companies ever taken you on a commercial hunt?
A. No.
Q. Have any of the inventors on any of the other prior art that you have cited taken you on a commercial hunt?
A. I don't follow.
Q. Has Mr. Flanagan ever taken you on a commercial

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hunt?
A. No.
Q. Mr. Lint?
A. No. I understand now. No.
Q. Leichty?
A. No.
Q. Krieger -- the Krieger Corporation?
A. No.
Q. Hendricks?
A. No.
Q. Missini?
A. No.
Q. Have you ever written about the Flanagan patent prior to this, prior to your declaration?
A. No. You mean like in a commercial article?
Q. Correct.
A. No.
Q. Have you ever written about a broadhead designed by Matt Futtere?
A. I may have.
Q. Can you explain your hesitancy in that question -- that answer?
A. When I was a bowhunting editor for Outdoor Life Magazine I went to the ATA show every year, and I covered new products. I would cover new products at the show, which

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

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

A. I have.

Q. What was your knowledge about him?

A. You mean the products that he makes?

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

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

Q. Had you ever met him?

A. I did at a ATA show.

Q. Do you recall when that may have been?

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

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

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

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

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

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

Q. Quality broadheads, innovative, not innovative?

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

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

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

Q. Correct.

A. I have.

Q. And what was the case?

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

Q. Was it a bankruptcy issue?

A. It was.

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

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

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

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A. Not that I recall.

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

A. I have.

Q. And what was that case?

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

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

A. Had to do with his divorce.

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

A. I have.

Q. And what was that case or cases?

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

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

A. The land owner.

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

A. I just provided my -- a declaration.

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

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

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It was very nonformal.

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

A. I did.

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

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

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

A. Non-broadhead.

Q. Was it a arrow-based patent application?

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

Q. Approximately when was that application?

A. 2001, 2002.

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

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

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

A. Somewhat.

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

A. Somewhat.

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

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A. I did.
Q. And who was it --
A. -- you're asking me on -- you're asking me -- It's a gradient scale that we're talking about, so my "somewhat" may be expert level to laymen and my "somewhat" to your level of expertise may be novice.
Q. I understand.
Who helped you understand obviousness and anticipation?
A. Who helped me? Originally? The -- the co-worker that I did my first patent application with. He was a patent examiner -- ex-patent examiner. And then my legal counsel for the prosecution of one of my first patents was a law firm out of Washington. And then the third patent firm was a patent attorney out of Coco, Florida, who prosecuted, I think, the majority of my patent applications.
Q. Now, you were asked by Bowmar Archery in this case to do what?
A. To review the intellectual property.
Q. Were you provided the patents such as Lint and Krieger and Vandewater, or did you search those on your own?
A. I searched -- did a patent search on my own and with the help of -- with the guidance of the patent attorney.
Q. So, did you find the Lint patent?
A. I don't think I found that one now.

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Q. Did you find the Vandewater patent?
A. I did.
Q. Did you find the Hendricks patent?
A. I did. I knew of it.
Q. The Krieger patent?
A. I don't think that one.
Q. How did you conduct your patent search?
A. Vis a vis the USPTO.
Q. What search terms were you looking for?
A. A long list of them: Biasing, blades, barbs, pivoting, pivot point. Just kind of all the generic terms.
Q. Did you end up giving that work to your attorneys to look at?
ATTORNEY SHULL: Object to the form of the question. And to the extent you're now asking for communications or information that was provided between me and Dr. Kuhn as a part of his work product, I object to the witness answering those questions because it's going to disclose work product and attorney-client privilege issues.
BY ATTORNEY MCKINNIE:
Q. Dr. Kuhn, are you aware that you have to produce or identify everything that you're relying on in your opinion?
ATTORNEY SHULL: Are you asking me that or ...
ATTORNEY MCKINNIE: Dr. Kuhn.
BY ATTORNEY MCKINNIE:

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Q. Are you aware that you have to produce, or identify at least, everything that you relied on in your expert report?
A. I assume that's so.
Q. Did you rely on those search results from the patent office in locating this prior art that you used in your declaration?
A. For the most part.
ATTORNEY SHULL: Object to the form of the question. Assumes facts not in evidence.
BY ATTORNEY MCKINNIE:
Q. Was that search report attached to your declaration?
A. No.
ATTORNEY SHULL: We've been going over an hour. I'd ask if we can take a break.
ATTORNEY MCKINNIE: Sure. That's fine.
(Recess taken from 10:11 a.m. to 10:25 a.m.)
BY ATTORNEY MCKINNIE:
Q. Dr. Kuhn, did you ever develop any mechanical broadheads?
A. Yes.
Q. What time period did you start developing those?
A. I have a patent on a mechanical -- mechanical actuated broadhead that we produced. I don't -- you can probably look at the date of the patent and get closer to -- I'm -- Some of this stuff I'm guessing on because it's been a

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while.
Q. Would that patent be the only product that you developed a mechanical broadhead on?
A. I think so.
Q. Did you focus your development more on the -- more on, I guess, aerodynamics versus more mechanical aspects?
ATTORNEY SHULL: Object to the form of the question.
A. I didn't really focus on anything. Whatever I thought I could -- whatever -- whatever product I thought I could improve, mostly sell, is what I focused on. I had plenty of ideas.
ATTORNEY MCKINNIE: I'm going to share with you Exhibit 2.
(Exhibit No. 2 was marked for identification.)
BY ATTORNEY MCKINNIE:
Q. I'm going to take you to the second page here. Do you recognize this letter?
A. I do.
Q. And what is this letter?
A. It's a shot against the -- across the bow. I don't know what the term is.
Q. Did you have a part in writing this letter?
A. We sent a lot of letters. There's a chance. There's probably a good chance.
Q. And this -- Scott Mackie is the person we were

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referring to earlier that was the co-owner of the company with you, correct?
A. It is.
Q. And in this, he's referencing the Atom product of Mr. Futtere. Earlier you testified that you believe the Atom from him was an innovative product; is that accurate?
A. It is.
Q. And this is the same product that you're referring to in this patent infringement letter?
A. It is.
Q. Do you know if you ever received a response from Mr. Futtere or his attorney?
A. I think we did.
Q. Do you recall if he took the product off the market?
A. No. I'm sure he didn't.
Q. Do you know if he made any changes in response to your threat?
ATTORNEY SHULL: Object to the form of the question.
A. I don't think it was a threat. I think it was a -- We sent a lot of letters to other manufacturers as we got a lot of letters from other manufacturers similar to this that said that we were potentially fringing on somebody's patents because there's so much -- so much prior art in the field that it's a common thing.
BY ATTORNEY MCKINNIE:

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Q. Did you ever sue over -- Did you ever sue based on the Atom --
A. No. No.
Q. Were you the one that did the analysis that would compare the atom product to the patent 6,918,848?
A. Oh, I don't know. It's 20 years ago. It's 2000 -- it's 20 years ago. I don't know.
Q. Did you ever participate -- Let me rephrase.
Did you ever compare a competitor product to one of your patents to determine if it was infringing?
ATTORNEY SHULL: Objection to the form of the question. It's outside the scope of his declaration. It's direct testimony. I'll let him answer this question, but these types of questions are inappropriate for purposes of cross-examination.
THE WITNESS: Would you repeat the question?
ATTORNEY MCKINNIE: Yes. Mrs. Sparling, would you read the question for me?
CERTIFIED STENOGRAPHER: Yes, sir.
(The previous question was read out loud by the certified stenographer: Question: "Did you ever compare a competitor product to one of your patents to determine if it was infringing?")
ATTORNEY SHULL: Same objection.
THE WITNESS: You want me to answer that?

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ATTORNEY MCKINNIE: Yes, please.
THE WITNESS: Yeah. Yes.
BY ATTORNEY MCKINNIE:
Q. So, it's possible that you reviewed the Atom product and compared it to the patent referenced in here to determine if there's potential infringement?
A. It's possible.
Q. Is it possible that Mr. Futtere's attorney sent a response stating that the alleged infringement was incorrect, that the Atom did not actually infringe?
A. It's very possible. Likely.
Q. I'm going to show you Exhibit 3.
(Exhibit No. 3 was marked for identification.)
BY ATTORNEY MCKINNIE:
Q. This is patent number 6,918,848.
Is this the patent that is referenced in the infringement letter?
A. I would assume so.
Q. And the date of this letter to Mr. Futerre is July 20, 2005. The issue date is July 19th, 2005. Were you waiting on the issuance of this patent before you sent out the letter?
A. I have absolutely no idea.
Q. Can you just tell me generally what is a broadhead?
A. I would say it's a subcategory of arrowheads, in

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general, that generally include an edge that are used for hunting or in war.
Q. You said that they have an edge?
A. Yes, sir.
Q. Like a blade?
ATTORNEY SHULL: Object to the form of the question.
A. Depends on what -- Typically, yeah. Typically.
BY ATTORNEY MCKINNIE:
Q. Does that edge do cutting?
A. Well, no, not necessarily. It doesn't -- no. Not necessarily.
Q. What would the purpose of an edge be on --
A. -- depending on the application of the broadhead.
Q. I believe that there's a category of -- correct me if I'm wrong -- of a fixed blade broadhead --
A. Yes.
Q. -- correct? What is a fixed blade broadhead?
A. It's a broadhead that have blades that are slit into slots or some kind of receiving mechanism. The blades don't move. A fixed blade can also be -- They make them out of sintered metal, so they're solid, one piece, but they're still considered a fixed blade. It's a general category.
Q. Are there other general categories, like, fixed blade --
A. There are.

Q. -- for broadheads?
A. There are.
Q. Can you name some of them for me?
A. Fixed blade, mechanical, cut-on-contact, hybrid, and I'd say "other."
Q. What does cut-on-contact mean?
A. It's a broadhead that's a solid blade. The major feature of the broadhead is the blade.
Q. How does that differ from a fixed blade?
A. Fixed blades have replaceable blades for the -- generally -- it's -- with -- generally fixed blades have replaceable blades. Cut-on-contact, the -- Okay. The fixed blade -- or the fixed blade has a tip, a screw-on tip, a point that's not part of the blade. A cut-on-contact has -- The tip is a portion of the blade.
Q. Would cut-on-contact be like the, you know, an Indian arrowhead artifact? Would that be like a cut-on-contact?
A. In a general sense, yes. You're comparing a -- a --
Q. I'm a novice here.
A. Well, you're comparing something that's knapped out of -- sharpened with a rock, but yeah, it is. Yeah. If you had to put a -- that into a category, it would be cut-on-contact, I would say.
Q. And then, generally speaking, what is a mechanical

broadhead?
A. In the simplest term, something with movable parts.
Q. What happens with the fixed blade broadhead when it hits bone?
ATTORNEY SHULL: Object to the form of the question.
A. What typically happens?
BY ATTORNEY MCKINNIE:
Q. Correct.
A. It's the -- It's dependent on any number of factors. The speed of the bow, the weight of the arrow, the design of the broadhead. Some companies advertise that they go through the bone. Muzzy is bad through the bone. Their advertising says that, you know. Depends on how fast the broadhead's going.
Q. Would you say it is easier to pierce a bone with a fine tip or a cut-on-contact?
ATTORNEY SHULL: Object to the form to the form of the question.
A. I don't know what a "fine tip" is.
BY ATTORNEY MCKINNIE:
Q. Well, you mentioned like on a fixed blade that there's a tip, like, a screw-on tip that's sort of separate from the blade. Correct me if I'm wrong on that description?
A. Repeat that one more time.
Q. Would it be easier to pierce a bone with a fine tip

or a -- a cut-on-contact blade?
A. I don't -- I'm not familiar with fine tip. I don't -- I've never heard that term before.
Q. Okay. Would it be easier to pierce a bone with a fixed blade having a screw-on tip or a cut-on-contact broadhead?
ATTORNEY SHULL: Object to the form of the question.
A. I'd be speculating because I don't know there -- I don't know what -- anything about the set-up. It's -- as I said, it's the speed of the arrow, it's the speed -- or it's the weight of the arrow, it's the design of the cut-on-contact; some have chisel points some are tapered points. Same with fixed blade broadheads; the screw-on tips, they've got a plethora of designs. Depends on the angle of impact. It depends -- there's just so many things that --
Q. So, is the category of a broadhead -- do some have strengths and weaknesses?
A. Yes.
Q. Okay. What -- what would a strength of a fixed blade broadhead be, typically?
A. Typically, the ability to change the blades. A lot of -- a lot of people would resharpen them. That's two.
Q. What would a weakness be?
A. Their flight characteristic because they have a fixed blade.

Q. What -- What makes that a weakness?
A. It's a flat planar surface that doesn't have any aerodynamic feature to it so you don't get laminar flow across the blade.
Q. Does that result in the arrow flying slower?
A. No. It re -- it makes the arrow flight -- I'm trying to think of the word I would use -- errantly because it's got -- it's got turbulent flow across the blade instead of laminar flow.
Q. Would that make it not accurate then?
A. It makes it turbulent, the arrow fly turbulently, if that's a word. So, it would -- in some -- Generally speaking, in some cases it would be less accurate; depends on the bow, the tune of the bow, the arrow shaft, it's --
Q. Well, I'm trying to understand. So, a fixed blade broadhead flying errantly -- is I believe the term that you used -- what is that effect when it comes to trying to shoot a deer?
A. You might miss him.
Q. Which that would go to accuracy?
A. It would.
Q. Would that also go to not being able to strike the deer where you were intending to strike the deer?
A. In that -- an inaccurate shot, yes.
Q. What would a strength be of cut-on-contact

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broadheads?
A. The sharper point. So, it would take less -- less kinetic energy for a really sharp point, tip of the arrow, to go through an animal than other broadheads, other designs.
Q. So, the tip on the cut-on-contact is a pretty sharp -- is a sharp point?
A. It's dependent on the design. Some companies have almost blunt tips on them. Some companies have extremely sharp tips on them. It's all -- it's all -- it's on a granular scale.
Q. So, does a fixed blade, then, have a blunt tip or a sharp tip?
A. It depends on the grind from the manufacturer, how sharp they are. Some I would -- some I would say are not sharp at all and some I would say are very sharp.
Q. When -- Okay. When you were saying the manufacturer is -- sometimes they're sharp and sometimes they're not, is that an issue of just manufacturing or an issue of their design?
A. Both.
Q. Are the blades on cut-on-contact -- I'm struggling to see the difference on your description of cut-on-contact versus a fixed blade as a category.
A. It's industry standard. You can -- You can Google "cut-on-contact" and "fixed blade" and immediately see the

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differences between them. One is a flying blade. It's literally a flying blade. And the other is blades that are re -- generally speaking, in a ferrule -- receptacle in a ferrule with a screw-on tip.
Q. And then on a fixed blade, the screw-on tip could be sharp or it could be blunt?
A. Varying degrees. Could be.
Q. And then in a mechanical, you've described that as basically it has a moving part?
A. Deployable blades, typically; vis a vis moving parts. The parts move. They deploy, typically.
Q. Dr. Kuhn, I'm going to show you Exhibit 4.
(Exhibit No. 4 was marked for identification.)
BY ATTORNEY MCKINNIE:
Q. Do you recognize this chapter?
A. I do.
Q. I'll represent to you that this is Chapter 8 from the Shooter's Bible -- The Shooter's Bible Guide to bowhunting, which I believe you reference in your declaration that you wrote, and I believe you referenced this chapter, specifically. Is this the chapter that you reference in your declaration?
A. It is.
Q. And you reference in your declaration this was published in 2013. When -- when did you write this?

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A. The years?
Q. Approximately, yes.
A. I probably -- I probably started on it in 2010-ish.
Q. Do you know, specifically, when you started working on this specific chapter?
A. I don't.
Q. Were you aware of the Flanagan patent at the time that you wrote this?
A. On the top of my head, no.
Q. I'm going to zoom in here on -- I believe it was kind of the last main paragraph of the text. Let me know, can you -- can you read this? It says, "Mechanicals, while getting plenty of ad time, as of late..."
A. Yeah. I can read it.
Q. What exactly is a deflected shot?
A. When shooting mechanical, generally speaking, depending on the design, the entry -- the angle of entry. If one blade hits at a specific angle, it can deploy that one blade and jackknife the broadhead or the arrow off the animal.
Q. Do mechanicals have trouble going through bone?
ATTORNEY SHULL: Object to the form of the question.
A. It depends on what bone, how fast the arrow is going, how heavy the arrow is, which mechanical it is.
BY ATTORNEY MCKINNIE:
Q. Well, you make --

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A. It's very specific.
Q. Well, you make a statement in this chapter that it requires a lot of kinetic energy for a mechanical broadhead to work properly; is that accurate?
A. Did I say that? Are you asking me that?
Q. I'm asking you, in general, do you recall that that was a theme of this chapter to an extent?
A. Yeah. It's a -- It's an industry-accepted norm.
Q. That mechanical broadheads require more kinetic energy?
A. Generally speaking.
Q. And is that a disadvantage for a mechanical broadhead?
A. It could be for some because you have less penetration.
Q. Is it accurate that you need -- in a lot of mechanical broadheads that you need a sufficient amount of kinetic energy to even deploy the blades?
ATTORNEY SHULL: Object to the form of the question.
A. Yeah. There's -- each -- Each mechanical broadhead would take a certain amount of mechanical -- or kinetic energy to deploy the blades, yes.
BY ATTORNEY MCKINNIE:
Q. I know zooming in here isn't very accurate here but on this you're referencing these two mechanical broadheads.

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

A. I do.

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

ATTORNEY SHULL: Object to the form of the question.

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

BY ATTORNEY MCKINNIE:

Q. Here, let me zoom out.

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

Q. All right. You state in this paragraph where my cursor is, "Since the early 1970s, broadhead designs have made limited progress." You go on to state, "Looking ahead to the future of broadheads and their design, it's hard to imagine any real significant advancements will be made." So, reading this, is it your opinion that there was really not much innovation between the 1970s and the time that you published this book in 2013?

ATTORNEY SHULL: Object to the form of the question.

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

BY ATTORNEY MCKINNIE:

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

A. Well, and materials.

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

A. I would agree with what I said.

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

ATTORNEY SHULL: Object to the form of the question.

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

BY ATTORNEY MCKINNIE:

Q. And so, your statement, though, that "the broadhead designs have made limited progress," that statement, says that the design aspect of them have made little progress in making them more efficient killers?

A. I believe --

ATTORNEY SHULL: Object to the form of the question. Hold on. Todd, just make sure you pause just in the event that I do want to object so I get my objection in before you answer your question so we're not talking over each other.

THE WITNESS: Okay.

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

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

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

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

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

BY ATTORNEY MCKINNIE:

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

ATTORNEY SHULL: Object to the form of the question.

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

BY ATTORNEY MCKINNIE:

Q. And what was the Grim Reaper broadhead?

A. It's the Liechty patent.

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

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

Q. Did you think the Liechty patent was innovative?

ATTORNEY SHULL: Object to the form of the question.

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

BY ATTORNEY MCKINNIE:

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

Do you think the Liechty patent is innovative?

ATTORNEY SHULL: Object to the form of the question.

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

BY ATTORNEY MCKINNIE:

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

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

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

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

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

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

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

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

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

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

A. I didn't say that.

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

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

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

ATTORNEY MCKINNIE: Object to the form of the question.

A. There's a good chance.

BY ATTORNEY MCKINNIE:

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

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

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

Q. So --

A. -- it's situation dependent.

Q. Okay. Sorry.

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

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

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

A. Generally speaking --

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

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

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person of ordinary skill in the art?

A. The archery field.

Q. Are there bachelor's degrees in archery?

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

Q. Is biology a technical field?

A. Sure.

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

A. I didn't disagree with you.

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

ATTORNEY SHULL: Object to the form of the question.

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

BY ATTORNEY MCKINNIE:

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

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

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Q. Okay. So, your education in prong two is a bachelor's degree?
A. Yes.
Q. Now, you've stated that you have more than the ordinary skill of the art during the relevant time period. How did you come to that conclusion?
A. From my work in the archery field designing broadheads, writing about the industry, all the different components, including broadheads, my experience, the years I've had experience, my patent work, all of my patent research for getting patents.
Q. And you've used that experience in drafting this declaration?
A. I did.
Q. And you used that experience in coming to your conclusions in this declaration?
A. I did.
Q. Earlier you testified that it took roughly ten years before you created an improvement in a broadhead that you ultimately then filed a patent application which was granted. You're stating in this, a person of ordinary skill in the art only has to have two years of experience. How did you distinguish -- How did you come up with the two years when it took you ten to make your first improvement?
ATTORNEY SHULL: Object to the form of the question.

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A. What I said was it took me ten years to come up with something that was commercially -- a commercially viable product.
BY ATTORNEY MCKINNIE:
Q. Okay. So, you're testifying that you made -- I -- I recalled your testimony as saying that was -- that was the first improvement that you had made?
A. No. I said I had many -- I'd made many improvements but none of which -- I said that I -- As I recall, I think I said that I made improvements, but they didn't seem to turn out to be improvements that I thought were of any consequence. Somebody else might have thought they were wonderful.
Q. I understand.
The patent owner proposed five years of experience developing broadheads or a combination of formal mechanical engineering and experience of developing broadheads. Do you have a problem with that proposal?
ATTORNEY SHULL: Yeah, I'm sorry. I didn't hear that question for some reason. My screen broke up. Can you repeat it?
(The previous question was read out loud by the certified stenographer: Question: "The patent owner proposed five years of experience developing broadheads or a combination of formal mechanical engineering and experience of developing broadheads. Do you have a

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problem with that proposal?")
THE WITNESS: He proposed five years; is that what you said --
BY ATTORNEY MCKINNIE:
Q. Correct.
A. Of experience?
Q. Correct. Five years of --
A. I'm not seeing it on the screen -- I'm not seeing that on the screen, so.
Q. No, no; this was what the patent owner wrote in their --
A. Oh.
Q. -- preliminary response.
A. I think that the five years is reasonable. I don't think that the other mechanical -- I'm going off the top of my head -- the mechanical engineering and -- Did you say no experience?
Q. Said, combination of formal mechanical engineering and experience with developing broadheads; now, there was no time frame on that --
A. Yeah, I don't know what -- Yeah, I wouldn't -- I know I -- That's saying somebody could have a mechanical engineering degree and say that I picked up a broadhead one time.
Q. But five years of experience developing broadheads

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without any formal education, would you agree with that standard?
A. It seems reasonable. It's arbitrary, but it seems reasonable.
Q. What makes your standard for a person of ordinary skill in the art not arbitrary?
ATTORNEY SHULL: Object to the form of the question.
A. Because mine is at least two years of work experience in the development of broadheads. I don't think his said that. I think it said experience with broadheads.
BY ATTORNEY MCKINNIE:
Q. Well, just to -- I had stated five years of experience developing broadheads, and you have listed at least two years of work experience in the development of broadheads.
A. Yeah. "Work" implies that you're doing it professionally, yes?
Q. Is that full-time work or a hobby-job work?
A. I... I think that you're bona fides are presented on the -- the totality of your background. I understand what you're doing.
Q. But to an extent, any time you put a year on something, it's arbitrary. I'm just trying to understand how you came up with two and the patent owner was proposing five. Why was five arbitrary but two was not --
A. Where did he come up with five? I don't know --

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Q. I'm not trying to play a gotcha game, honestly. I just --
A. I know that's --
Q. -- want --
A. -- I feel that's exactly -- I feel like that's exactly what you're doing --
Q. No, I'm not. I'm just trying to understand --
A. -- you can argue --
CERTIFIED STENOGRAPHER: Excuse me, Gentlemen. You're talking at the same time.
A. I'm not sure how you can -- how you can go that I don't -- I'm assuming that you're going to want to say that I don't have experience in broadhead development, so I think we're playing word games.
BY ATTORNEY MCKINNIE:
Q. This person of ordinary skill in the art, was this a standard you developed or the attorneys provided to you?
A. Together.
ATTORNEY MCKINNIE: Okay. I'm showing Exhibit 5.
(Exhibit No. 5 was marked for identification.)
BY ATTORNEY SHULL:
Q. Which is Exhibit 1001 to the petition. I'm representing to you that this is the Flanagan patent. Have you seen this document before, Dr. Kuhn?
A. I have.

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Q. Were you familiar with the Flanagan patent prior to this IPR?
A. I may have been. I've seen hundreds of broadhead patents in the prosecution of my patents and researching the prosecution of my patents. Hundreds.
Q. When you first saw this patent in relation to this IPR, did it seem like something you had seen before?
A. I didn't make a judgment at the time whether I'd seen it or not. Never crossed my mind.
Q. Did you recall seeing the subject matter of this patent before?
A. Of collapsible broadheads?
Q. Of -- of the actual invention described in this --
A. I've seen collapsible broadheads before.
Q. But you don't know if you've seen the Flanagan disclosure before?
A. I don't know, specifically, if I've seen it. There's a good chance I did.
Q. It didn't stand out to you, though, to make a statement one way or the other?
A. It didn't stand out to me.
Q. Do you know if you referenced this patent in your book, "The Shooter's Bible, Guide To bowhunting"?
A. I don't know offhand.
Q. Can you briefly just describe how -- First of all,

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would you consider this a broadhead?
A. I would.
Q. Would you consider this a mechanical broadhead?
A. I would.
Q. Would this fit into cut-on-contact or any other category of broadhead?
A. I wouldn't think so.
Q. Can you briefly describe how the Flanagan disclosure works?
ATTORNEY SHULL: Object to the form of the question.
A. You want me to read the abstract?
BY ATTORNEY MCKINNIE:
Q. Well, do you recall sitting here today how the Flanagan disclosure -- how -- Rephrase.
Sitting here today, do you recall how the broadhead disclosed in the Flanagan patent operates?
A. I do.
ATTORNEY SHULL: Object to the form of the question.
BY ATTORNEY MCKINNIE:
Q. Can you briefly describe how it operates?
A. The blades are -- on the right -- excuse me -- on the left are retained by that O-ring, and when the -- when the broadhead hits the animal, the O-ring deploys, pops off. The biasing member pushes the -- extends the blades, and as it goes through an animal, if it hits an -- encounters something

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of a higher viscosity, the blades will collapse, and then the biasing member will push them back.
Q. "Higher viscosity," would that potentially mean bone?
A. Potentially.
Q. And then you said the biasing member pushes the blades back. At what point does it push the blades back?
ATTORNEY SHULL: Object to the form of the question.
A. It's dependent on what it's going through. Depends on the spring tension. Depends on the speed of the arrow.
BY ATTORNEY MCKINNIE:
Q. Would it be accurate to say that if the force pushing against the blades is more than the biasing element force operating in the opposite direction, than the blades would be retracted?
A. They would move in a retracted -- in a retracted direction.
Q. And then when the force of the tissue or the bone that it's going through is less than the biasing force pushing the blades, then the blades would be moving to the extended or open position?
ATTORNEY SHULL: Object to the form of the question.
THE WITNESS: Would you repeat that?
ATTORNEY MCKINNIE: Please, ma'am.
(The previous question was read out loud by the

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

ATTORNEY SHULL: Same objection.

A. Yes.

I'm sorry, Jason.

BY ATTORNEY MCKINNIE:

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

ATTORNEY SHULL: Object to the form of the question.

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

BY ATTORNEY MCKINNIE:

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

A. No.

Q. No?

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

ATTORNEY SHULL: Object to the form of the question.

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

BY ATTORNEY MCKINNIE:

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

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

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

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

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

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

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

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

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

A. It could.

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

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ATTORNEY SHULL: Object to the form of the question.

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

BY ATTORNEY MCKINNIE:

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

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

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

BY ATTORNEY MCKINNIE:

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

A. Of course.

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

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dull?

A. To varying degrees.

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

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

Q. What does "cutting" mean?

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

Q. I want to point out on the claim -- Nah.

So, does the term "blade" mean that it would have a cutting surface in your opinion?

A. No.

Q. No?

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

A. I did.

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

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

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

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

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

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the sand, or does it bounce off the sand?
A. Again, it depends on a lot of factors: The arrow speed, the geometric design of the broadhead blade.
Q. If you're practicing at shooting something, wouldn't you want it to stick as to where you're shooting it at so you can see it?
A. No, not necessarily. Depends on the design of the -- of the practice head. There's some practice heads that are designed not to cut at all or not to pierce the target, not to -- to do nothing.
Q. So, it just bounces off the target?
A. Some do.
Q. How do you know, then, where you hit?
A. Depends on what kind of target you're shooting at.
Q. Do they put, like, paint on the end of it? I'm just trying to understand why you would even do this.
A. You could probably put a piece of paper on the target. I don't know how people do it. I know that there's broadheads with practice blades that don't -- that are designed not to do any damage.
Q. Are those practice blades still made out of metal?
A. I think metal is one of the compositions that the blade could be made out of.
Q. Even the practice ones?
A. I think so.

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Q. What does the term "biasing" mean as it relates to the Flanagan patent?
A. Something that pushes against and biases something from one position to another.
Q. How do you understand the term "pivot"?
ATTORNEY SHULL: Sorry. The term what?
ATTORNEY MCKINNIE: Pivot, p-i-v-o-t.
A. How do I understand it?
BY ATTORNEY MCKINNIE:
Q. Correct. In terms of broadheads.
A. It's an axis about which -- again, generally speaking, it's an axis about which something turns.
Q. Is a pivot point fixed or movable?
ATTORNEY SHULL: Object to the form of the question.
A. It would depend on the design.
BY ATTORNEY MCKINNIE:
Q. So, you could have a fixed pivot point or you could have a slideable pivot point?
ATTORNEY SHULL: Object to the form of the question.
A. You could have any number of different pivot points.
BY ATTORNEY MCKINNIE:
Q. Are you aware of any commercial embodiments that utilize the Flanagan disclosure in this patent?
A. Not offhand.
Q. Do you agree with me that the express purpose, at

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least listed by Flanagan, was to provide reliable penetration of bone and maximizing cutting of soft flesh on either side of the bone to increase the likelihood of a successful kill?
ATTORNEY SHULL: Object to the form of the question.
A. I believe that's what the inventor thought he was doing.
BY ATTORNEY MCKINNIE:
Q. Do you have any reason to indicate that his design as disclosed in this patent would not accomplish that?
ATTORNEY SHULL: Object to the form of the question.
A. I can't make a judgment on how well his broadhead worked.
BY ATTORNEY MCKINNIE:
Q. You have no reason to believe one way or another if his worked or didn't work as intended?
A. I think in theory that it should work.
BY ATTORNEY MCKINNIE:
Q. Do you think that would be an improvement over previous designs if it worked in theory?
ATTORNEY SHULL: Object to the form of the question.
A. As I state in my declaration, I think there's other designs that do the same thing, so I don't know that this is an improvement over anything else.
BY ATTORNEY MCKINNIE:
Q. I'm just going to give you a hypothetical here: All

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things considered of the same bow strength and the same person pulling on it and the same type of bow and same deer, same shoulder bone mass, would Figure 3 disclosure -- let's pretend that it's fixed in the collapsed portion -- would that flow through a bone or fly through a bone easier than the disclosure in Figure 4 if those blades were fixed in the extended position?
ATTORNEY SHULL: Object to the form of the question. It's an incomplete hypothetical.
THE WITNESS: Am I supposed to answer that?
ATTORNEY MCKINNIE: Yes.
A. Yeah. Physics would dictate, more likely than not, the Figure 3 broadhead would penetrate better than Figure 4.
(Exhibit No. 6 was marked for identification.)
BY ATTORNEY MCKINNIE:
Q. Okay. I'm showing Exhibit 6 which I'm representing to you is Exhibit 1002, the Lint patent, that was attached to Petitioner's IPR or the IPR petition.
Do you recognize this patent?
A. I do.
Q. Can you tell me briefly -- Would you consider this a broadhead?
A. I would.
Q. Would you consider this a -- what subtype of broadhead?

A. Mechanical.
Q. Is that because it's got moving parts?
A. Yes.
Q. Is there any other reason why you'd consider it a mechanical?
A. The main reason is because of the moving -- the ability of the parts to move, the blades to move.
Q. Can you explain to me how the disclosure in Lint operates?
A. When Figure 2 goes into an animal and the blades encounter something hard or viscous, it has more force than the biasing spring's tension, the blades move, they articulate.
Q. You're referring to Roman numeral 19 as a blade?
A. I am.
Q. And you're aware that Lint, discloses Roman numeral 19, as a barb; are you aware of that?
A. I am.
Q. So, you are changing the term "barb" to mean "blade"?
ATTORNEY SHULL: Object to the form of the question.
A. Blades and barbs -- To define a barb in the bowhunting industry, in the archery industry, it refers to the orientation of the blade or the barb to the ferrule. If it's less than 90 degrees, less than perpendicular, then it's

considered a barb. So, you can have blades that are barbs. You can have -- You can have blades that are labeled blades that are barbs. So, in the bowhunting world, the archery industry, the terms can be interchangeable, generally.
BY ATTORNEY MCKINNIE:
Q. Well, I still haven't heard a definition of what a blade is. So, are you telling me that the barb is in -- in this patent, this barb is interchangeable with a blade, the term?
A. Yes. Yes.
Q. Will you agree with me that when Lint's disclosure penetrates flesh of any kind, the barbs are retracted into the closed position as shown in Figure 3, correct?
ATTORNEY SHULL: Object to the form of the question.
A. When the broadhead enters the animal, the blades are biased to the open position, and when they encounter a force greater than the biasing force, they retract.
BY ATTORNEY MCKINNIE:
Q. And then you agree with me that they don't open again until it has stopped penetrating the animal?
A. No. No. No, I don't agree. They can open -- They articulate just as the Flanagan blades do.
Q. Is that based on your understanding of the specification?
A. That's based on my understanding of the entirety of

the patent.
ATTORNEY MCKINNIE: Mrs. Sparling, could you read back his answer? Not this last one, but the one before that.
(The previous answer was read out loud by the certified stenographer: Answer: "No. No. No, I don't agree. They can open -- They articulate just as the Flanagan blades do.")
BY ATTORNEY MCKINNIE:
Q. Would it surprise you to learn that the term "blade" is not once mentioned in the Lint patent?
A. Surprise me? No.
Q. Is "blade" a synonym for "barb"?
A. In the bowhunting world, yes. Could be.
Q. Is it "yes" or "could be"?
A. Yes.
Q. So, it is a synonym for a barb?
A. (Witness nods head.)
Q. Okay. Dr. Kuhn, I'm going to show you Exhibit 7. This is US Patent Number 6,695,726. Do you recognize this?
(Exhibit No. 7 was marked for identification.)
A. I do.
BY ATTORNEY MCKINNIE:
Q. And is this a patent that you're the inventor on?
A. I am.

Q. And it doesn't appear to have any assignment on its face. So, this is a patent that you currently still own?
A. I think the bank probably owns it.
Q. Okay. So, you believe it was probably assigned with the X -- the 2XJ -- XJ2 -- you believe it was assigned to the company?
A. Yes.
Q. All right. Can you read the name of this?
A. Arrow Blade Locking System.
Q. And what is this patent describing, generally? I can scroll for you.
A. Describes the way the blades are held in the ferrule.
Q. Now, would you describe these as barbs?
A. What are you pointing to?
Q. Would this patent make sense if we did a "find/replace blade" and changed every term "blade" to "barb"?
A. Could you do that? Is that the question?
Q. Right. Would that be accurate?
A. You could do that.
Q. Okay. Didn't you state that a barb had to be 90 degrees less than the angle between -- the rear angle of the ferrule and the bottom of the unit that was sticking down?
ATTORNEY SHULL: Object to the form of the question.
A. Generally speaking.

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BY ATTORNEY MCKINNIE:

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

A. Correct.

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

ATTORNEY SHULL: Object to the form of the question.

THE WITNESS: Could you repeat that?

ATTORNEY MCKINNIE: Please.

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

ATTORNEY SHULL: Same objection.

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

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

BY ATTORNEY MCKINNIE:

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

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

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

ATTORNEY SHULL: Object to the form of the question.

BY ATTORNEY MCKINNIE:

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

A. Could be a barb.

Q. So, it is a barb?

A. It could be defined as a barb.

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

A. It can be a barb or a blade.

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

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

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

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

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

BY ATTORNEY MCKINNIE:

Q. Okay. Thank you.

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

A. It is.

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

ATTORNEY SHULL: Object to the form of the question

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

BY ATTORNEY MCKINNIE:

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

A. I am.

Q. Do you know if those laws ever use the term that the blade is banned?

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

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

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

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

ATTORNEY SHULL: Object to the form of the question.

ATTORNEY MCKINNIE: Let me rephrase.

BY ATTORNEY MCKINNIE:

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

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

ATTORNEY MCKINNIE: -- the notice --

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

ATTORNEY MCKINNIE: Objection --

ATTORNEY SHULL: -- way outside the scope of this

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

BY ATTORNEY MCKINNIE:

Q. Can you answer the question, please?

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

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

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

A. The blade -- they banned the broadhead.

BY ATTORNEY MCKINNIE:

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

ATTORNEY SHULL: Object to the form of the question.

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

BY ATTORNEY MCKINNIE:

Q. You think it does or it does not?

A. It does.

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Q. It does. Where does it show a cutting surface? Would you like me to show you the figures?

A. Figure 1.

Q. And what is the cutting surface?

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

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

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

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

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

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

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

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

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

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

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

A. No.

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

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

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

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

A. Right.

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

A. Generally, yeah.

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

A. Yes.

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

A. Correct.

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

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

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

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

Where, specifically, are you referring to?

BY ATTORNEY MCKINNIE:

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

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

A. I do.

Q. And do you recall that anticipation means every

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

A. I do.

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

A. I recall that.

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

ATTORNEY SHULL: Object to the form of the question.

BY ATTORNEY MCKINNIE:

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

A. Because one skilled in the art would know that that is a cutting blade, barb, whatever you want to call it. We're getting hung up on definitions, but that is a blade that would cut, even though they call it a barb.

Q. Well, what I do understand is on the obviousness rejection when you state that you could swap out -- you could change the barb to a blade, how is that possible when the barb is already a blade member?

ATTORNEY SHULL: Object to the form of the question. It mischaracterizes his Direct testimony.

A. It would be obvious to anybody skilled in the art to know that that would function -- in form and function exactly like the Flanagan patent because those barbs/blades,

either/or, cut tissue when they go through an animal because they have an edge. They have speed and they have pressure.

BY ATTORNEY MCKINNIE:

Q. I'm going to refer you to page 82 of your declaration, and you state here at the bottom: "However, it would have been obvious to a person of ordinary skill in the art to simply -- to add a sharp edge to the first blade member disclosed in Lint because a person of ordinary skill in the art would know that the sharp edge facilitates expeditious cutting of flesh, expedited hemorrhaging, which ultimately leads to a humane discharge of the animal and flight characteristics." Are you stating here -- Why would a person of ordinary skill in the art make any change when the barb is already a blade?

A. It was an improvement because the quintessential lethality of a broadhead would be to have as sharp a surface as you could possibly have; not merely an edge, but as sharp as you could possibly get it.

Q. But doesn't a person of ordinary skill in the art already know that a barb is a blade?

A. People would know that a barb could be replaced by a blade or a blade by a barb.

Q. So, you're saying in one breath that it would be obvious to a person of ordinary skill in the art to change the barb to add the sharp edge to the barb --

A. This was --

Q. -- another breath, you're stating that a person of ordinary skill in the art would already know that the barb is a blade; is that accurate?

ATTORNEY SHULL: Object to the form of the question.

A. This was added for this reason exactly, for somebody saying that that's not a blade, that's a barb. It's not sharp. It was combining Lint with Minisini that says that the optimal design for a barb would be to be sharpened.

BY ATTORNEY MCKINNIE:

Q. Well, in this, I'm just referencing Lint only, not Lint in combination with Minisini or Krieger unless I misunderstood your declaration.

A. I think what I said was -- when --

ATTORNEY SHULL: Can you blow the screen up? Because it's real small, microscript font.

ATTORNEY MCKINNIE: Sure. Any particular spot?

ATTORNEY SHULL: So, you're referencing the portion of his Direct testimony relating to ground three. Now, you're going back and claiming that your questions are limited to his opinions with respect to ground one. So, which is it?

BY ATTORNEY MCKINNIE:

Q. Are there two different persons of ordinary skill in the art, Dr. Kuhn?

A. Pardon me.

Q. Are there two different persons of ordinary skill in the art for ground one versus ground three?

A. You've lost me.

ATTORNEY SHULL: Object to that form of the question.

BY ATTORNEY MCKINNIE:

Q. I'll move on. It's fine.

All right. I'm going to show Exhibit 8 which is Exhibit 1006 to the IPR petition. It's the -- representing it's the Krieger patent.

Dr. Kuhn, do you recognize this?

A. I do.

(Exhibit No. 8 was marked for identification.)

BY ATTORNEY MCKINNIE:

Q. And what is this disclosure showing?

A. Shows the -- adding a sharp edge to increase your aerodynamic efficiency.

Q. And it's increasing that aerodynamic efficiency by sort of changing the angle or spiraling of the blades as it relates to the shaft, correct?

A. It's sharpening the blades to make them cut through the air more aerodynamically.

Q. That's your interpretation of what the specification says? I'll reference you to column one, line 51.

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A. I'm trying to find my copy.
Q. I can zoom in for you if that makes it easier.
A. Sorry. Go ahead.
Q. Okay. So, I zoomed in. Can you read line 51 here? Is that clear?
A. I can read it.
Q. And then when you go up to the next part, where does it state that it's a sharp blade?
A. Can you refer me where in my declaration where we're looking?
Q. Says, column one lines one through two, "This invention relates to arrows and more particularly arrowheads. Krieger is directed to arrows and more particularly to arrowheads..." Okay. There it is. All right. I stand corrected.
So, here they're saying wings or blades; again, you're making sort of a distinction that blades don't necessarily have to be a super sharp edge to make it a blade?
A. To be lethal.
(Certified Stenographer asks for clarification.)
BY ATTORNEY MCKINNIE:
Q. Now, do you agree that Krieger also discloses changing the orientation of the blades to increase aerodynamics?
A. In addition to, yes.

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Q. Do you have any demonstrative data that shows how sharp the edge needs to be to make any sort of measurable difference -- measurable change in the speed of an arrow?
A. In the speed of an arrow?
Q. Or accuracy.
A. No, I don't have any.
(Exhibit No. 9 was marked for identification.)
BY ATTORNEY MCKINNIE:
Q. I'm going to show you Exhibit 9 which is Exhibit 1005, Minisini, to the IPR petition.
Do you recognize this document?
A. I do.
Q. And what is this disclosure showing?
A. It's showing that in a preferred embodiment that the barb would be sharpened to cut through flesh of the fish.
Q. You agree with me that Minisini's barb is exposed even before deployment, correct?
A. As I said, this is to demonstrate in a preferred embodiment that a barb would be sharpened. There's lots of embodiments in the prior art talking about sharpening barbs to increase their cutting -- their ability to cut. As I mentioned, Zwickey was probably the first to do it in 1945.
Q. But again, though, this simple question: You'd agree with me that the barb that is disclosed in Minisini even in the retracted state still has an outside edge exposed to

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flesh when it enters into tissue, correct?
A. I would not agree because I don't know where the -- you -- depending on the grind on the barb where you start and stop.
Q. Well, so this portion right here that I'm -- I'll zoom in --
A. I can see it.
Q. You're stating this edge right here is not exposed to flesh as it enters into a target?
A. Yes, it is exposed.
Q. Now, I want to refer you back to Lint. Would you agree, on Figure 3, that this barb, for what you're referring to as a blade, 19, is not exposed --
ATTORNEY SHULL: Object to the form of the question.
BY ATTORNEY MCKINNIE:
Q. -- to flesh as it is entering in --
ATTORNEY SHULL: Object to the form of the question.
A. No. I'm looking at Figure 2 is how it would be shot and it is exposed.
BY ATTORNEY MCKINNIE:
Q. In Figure 2 it is exposed, correct, but in Figure 3 it is not exposed?
A. Number three is when they're going into the retracted position.
Q. Right. But when it's in the retracted position,

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it -- in Lint, it is fully retracted, correct --
A. That's after it's been --
ATTORNEY SHULL: Object to the form of the question. Let's make sure we're not talking over each other.
THE WITNESS: Sorry, Jason.
ATTORNEY MCKINNIE: Which Jason?
BY ATTORNEY MCKINNIE:
Q. So, you'd agree, though, that the barb shown in 19 -- for simplicity's sake, reference Roman numeral 19, when it is fully retracted as shown in Figure 3 is not exposed to the flesh?
ATTORNEY SHULL: Object to the form of the question.
A. What I'm saying is you're comparing two different -- You're saying that the -- if Hendricks is shot or -- What was the other patent?
BY ATTORNEY MCKINNIE:
Q. Minisini.
A. That figure is the same as Figure 2 when it's going through the animal. This is after it's gone through the animal and they've retracted the blades.
Q. I'm just looking at the structure.
A. If the question --
Q. Hypothetically, if Figure 3 on Lint, is penetrating into the flesh, there is no outside edge of Roman numeral 19 here that is capable of cutting or slicing tissue?

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ATTORNEY SHULL: Object to the form of the question.
A. Figure 3 is not when it's penetrating the animal. It's after it's been shot through the animal and they want to retract it. It's not the same as Minisini. But that's in retraction. That's pulling it out. That's after Figure 2.
BY ATTORNEY MCKINNIE:
Q. That's your understanding of Lint?
A. That's my understanding of what we're looking at there.
Q. The general -- Would you agree that the general nature of a barb is to help retain the arrow within the tissue?
ATTORNEY SHULL: Object to the form of the question.
A. No, I wouldn't.
BY ATTORNEY MCKINNIE:
Q. What would be the purpose of a barb, then, in your opinion?
A. You said the general purpose of a barb?
Q. Correct.
A. I would say that the -- Generally speaking, that it was to keep an animal attached to the tether. And it also could be used as -- to cut through the flesh. Depends on what the design is. Some broadheads have barbs on them and they sharpen the backs -- they sharpen the -- Going back to what you said earlier about the geometry of a blade making the barb

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being outlawed, originally, the first broadheads that were ever made had blades that were considered barbs -- both barbs and blades and they sharpened -- they'd sharpen the barb portion.
Q. So, what was the effect on the animal?
A. The effect on the animal was a dual cut going in and coming out.
Q. Was that considered inhumane, or do you have an understanding as to why that would be a problem?
A. It was considered more efficient, the ability to cut going in and going out. It would be more humane because it would express -- it would cause the animal to expire quicker because you're increasing the lethality of the broadhead and the blade, the barb.
Q. Was it ever a problem that if you did not have a barb where the portion that was angled 90 degrees rearward, as we'd mentioned earlier for generally a barb if you did not have that, would it be easier for an animal to potentially remove an arrow or have it fall out after being shot than with a barb?
A. The reason for the law is so the animal can't theoretically pull the arrow back out.
Q. So, in that instance, the barb would help keep the arrow or broadhead inside the animal?
A. In that instance, the broadhead would be able to

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be -- with the sharpened barb, would make it more lethal.
Q. When it's pulled out?
A. The -- as it's being pulled out.
ATTORNEY MCKINNIE: I've probably got about another 30 to 40 minutes, Guys. You want to take a quick break real quick? I'd like to use the restroom.
THE WITNESS: Please.
(Recess taken from 12:27 p.m. until 12:40 p.m.)
ATTORNEY MCKINNIE: All right. Dr. Kuhn, I'm going to share Exhibit 10 which is -- I'll represent to you it is Exhibit 1003 of the IPR petition and it is to the Vandewater patent.
(Exhibit No. 10 was marked for identification.)
BY ATTORNEY MCKINNIE:
Q. Do you recognize this?
A. I do.
Q. And it states here that it has a filing date of March 16th, 2009, which is after the filing date of Flanagan. Were you told by your attorneys that there was a provisional application that created the -- that allowed for this to be priority -- or be prior art?
A. I -- I believe I state that in my declaration.
Q. Did you review the provisional application?
A. Generally.
Q. Okay. I'm going to start by reviewing embodiment

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one; actually, start with embodiment two, which is described as Figure 7, 8, 9 through 12, I believe.
Can you describe how this embodiment of Vandewater works?
A. The arrow shaft is shot and that impacts the animal of 225 and 224, open the blades to the deployed position, and -- and then they -- they lock as in Figure 8 and they pivot on 236.
Q. 236?
A. Yeah.
Q. Did you want me to go back a figure?
A. No. I've got them here.
Q. So the blades, once they reach the -- So, in Figure 7 they're in a retracted position, correct?
A. Correct.
Q. Figure 8 they're in a deployed extended position, correct?
A. Correct.
Q. And then they're locked in the extended position, correct?
A. Correct.
Q. And then the blade can -- Once it's formed this unitary blade as shown in figure 11, it can rotate along this pivot point, 216; is that accurate?
ATTORNEY SHULL: Object to the form of the question.

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A. Yes.
BY ATTORNEY MCKINNIE:
Q. Now, in this embodiment as drawn, there was no reference to a biasing element in the drawing; is that accurate?
A. Well, a reference that these drawings can include this 300 series. So, there was not -- To answer your question, that drawing, no, there's not a biasing element.
Q. So, the 300 series would be the third embodiment, correct?
A. Figures 15, 16, yeah.
Q. So how does this embodiment work?
A. The broadhead enters the animal, 324, and 325, push the blades open -- not push the blades open. They begin moving the blades in an aft direction biasing element three -- if I get the numbers right 323, retaining element -- if I get the numbers wrong; I apologize. Retaining element 323 holds the blades closed. 3 -- The 317 pushes the blades -- biases, excuse me, the blades into an open position, and then --
Q. Excuse me. Which one biases them to the open position?
A. 317. 317. It both retains and --
(Certified Stenographer asks for clarification.)
A. It both retains and biases. And then Figure 18 shows the blades deployed and the biasing element/retaining

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element articulates on that pin sliding left to right to bias the blades.
BY ATTORNEY MCKINNIE:
Q. When the blades as shown in -- When you said that the blades move towards the aft direction, are they sliding within that slot that looks like 313 maybe on Figure 17?
A. I believe it --
ATTORNEY SHULL: Object to the form of the question.
THE WITNESS: I'm sorry. Jason Shull, I didn't hear what you said.
ATTORNEY SHULL: I object to the form of the question.
A. Yes. They slide.
BY ATTORNEY MCKINNIE:
Q. And then once they reach the deployed state on Figure 18, they are locked; is that accurate?
ATTORNEY SHULL: Object to the form of the question.
ATTORNEY MCKINNIE: Let me rephrase that.
BY ATTORNEY MCKINNIE:
Q. They are locked to the deployed or extended position?
ATTORNEY SHULL: Object to the form of the question.
A. I don't know if they're locked or not.
BY ATTORNEY MCKINNIE:
Q. Do you agree with me that Figure 15 shows the blades

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in a retracted position?
A. I do.
Q. And you agree with me that Figure 18 and 16 show the blades in an extended position?
A. I do.
Q. Are you aware if the blades can then return back to the retracted position as shown in Figure 15?
ATTORNEY SHULL: Object to the form of the question.
A. Do I know if they can return back to the -- go from 18 to 15?
BY ATTORNEY MCKINNIE:
Q. Correct.
A. I would say they probably could. Well, yeah. They could go back.
Q. What force allows them to go back to 15?
A. Well, the user can put them back to 15, or theoretically, if it went through the animal and you pulled it back out.
Q. Going back to this second embodiment, again, would you agree Figure 10 is the retracted position and Figure 11 is the extended position of the blades?
A. 10 is retracted and 11 is deployed, yes. I would agree.
Q. And these blades are locked because of the tabs on item 222, correct?

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ATTORNEY SHULL: Object to the form of the question.
A. Yes. They can lock.
BY ATTORNEY MCKINNIE:
Q. And there is no intent on Vandewater that the blades on the second embodiment return from the deployed position to the retracted position within the animal during its course of the flight?
ATTORNEY SHULL: Object to the form of the question.
A. I'm not sure what that -- what that matters given the claims of Flanagan.
BY ATTORNEY MCKINNIE:
Q. I'm asking you that question.
A. Would you repeat it one more time?
(The previous question was read out loud by the certified stenographer: Question: "And there is no intent on Vandewater that the blades on the second embodiment return from the deployed position to the retracted position within the animal during its course of the flight?")
ATTORNEY SHULL: Object to the form of the question.
A. Well, yeah, they do because, as it goes through -- So, they're deployed in Figure 11, as it goes through, those -- that pivots on 216, and depending on which way it pivots, it goes back to the retracted position. The retracted position defined in Flanagan isn't -- isn't how you're

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depicting it. It's simply the first -- how would I describe that? The first and the second and the distance -- the greater distance of the second member has nothing to do with the broadhead folded up, if that answers your question.
BY ATTORNEY MCKINNIE:
Q. So, you're stating that because the blade, as shown in Figure 11, can pivot around 216, 213, the blade may end up being sort of in the position that is shown in Figure 10; is that correct?
A. Correct.
Q. Now, when it -- When Figure 11 -- If 213 were to move into that position, 212 would not also be in that retracted position, though, would it?
A. It would not.
Q. And then what is the element that is putting blade 213 back out to the extended position?
ATTORNEY SHULL: Object to the form of the question.
A. There isn't an element in that figure described that the patent says that the 310 and 210 drawing figures, the components in 310 can be used on -- on the 200 series.
BY ATTORNEY MCKINNIE:
Q. Correct me if I'm wrong, I think what you're referencing is in the first embodiment where it discloses this engaging element?
A. No, I'm --

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Q. -- biasing; is that accurate or no?
A. No.
Q. No?
Are you relying on embodiment three, then, as the retaining and biasing element, and you're stating that that biasing and retaining element is almost 317?
A. For application for drawing -- to Figures 8 -- is that -- No. We have 4. Yeah, that -- Sorry. Figure 11. Yeah. That biasing and retaining element to go onto -- could be used on Figure 11.
Q. How does the biasing element work on -- for 317?
A. When the blades are deployed, it -- it biases the 322, that knob, that lobe, and the blade's in the extended position.
Q. So it's your interpretation in this figure, then, that Figure 18, that the blades can then move in -- back into Figure 15 position and they can slide along that --
A. No. I'm sorry. I misspoke. That's not -- That's not what I meant to say. That can be -- they will move back into the retracted position as defined by the claims in Flanagan when they pivot to the left or right according to the first member and second member increasing or decreasing the distance.
Q. Are you aware that Flanagan requires a biasing element to bias the blades to the extended position?

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A. It's 317.
Q. Where is the spring on 317?
A. Well, in the body of the patent it says the biasing element. They don't disclose -- they disclose the use of a spring, but they don't -- they don't show it. These aren't manufacturing drawings, and somebody skilled in the art would know that you could add a spring to that, although you wouldn't need to add a spring because as soon as it biases to the left or the right, it's decreased the first and second distance as required by Flanagan.
Q. So Vandewater describes 317 as a pivot limiter. How do you interpret that phrase "pivot limiter"?
ATTORNEY SHULL: Object to the form of the question.
A. I'm looking at Figure 18, and by the descriptions of the figure with the -- the post 321 and that slotted channel, 323, let's both -- He can call it a pivot limiter. It's a biasing element because that pushes the blades left and right as they pivot on 316.
BY ATTORNEY MCKINNIE:
Q. But the blades, would you agree, though, that the blades act as unitary action as shown in Figure 18? Once they're deployed, similar to our conversation about the -- the second embodiment, if 313 is pushed, as you're saying, back to the retracted position, blade member 318 is not in the retracted position; is that accurate?

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ATTORNEY SHULL: Object to the form of the question.
A. I would say in one embodiment that would be accurate.
BY ATTORNEY MCKINNIE:
Q. In the third embodiment?
A. Yes.
Q. Then you're stating that it automatically returns to the center position?
A. No. I didn't state that.
Q. Would you agree that the apparent purpose of Vandewater is to pivot the blade along that pivot point when it strikes something of a harder density on one side of the broadhead? Is that accurate?
A. Let me -- this -- This summarizes it: "An arrowhead -- an arrowhead for use with an arrow in archery includes the body at least one blade pivotally mounted ...
(Certified Stenographer asks for clarification.)
A. I'm just -- I'm reading the abstract. Let me skip down. "The blade has a cutting edge and a rear edge, the rear edge having a notch and the blades pivot relative to the body in about a pivot axis between the generally centered position and an angled position. The retaining mechanism engages with the notch of the blades when the blade is in the center position impeding pivotal movement of the blade about the pivotal connection." So, the foundation of the design is

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to -- in my opinion, in number -- in Figure 18 in the deployed position when something strikes, say, 313 or 319, somewhere on the blade, it allows the blade to pivot to a retracted position from a deployed position.

BY ATTORNEY MCKINNIE:

Q. I'm going to go back to your declaration, Dr. Kuhn. I'm looking at Claim 11 on -- It's page 65 of your declaration. It's in your claim chart in reference to the element, "At least one biasing member biasing the first and second blade members towards the extended positions." You're citing in here, Figures 7 through 12, and you're also, then, citing biasing element 36 which is a ball bearing and a notch, though, it's in embodiment number one. Does this refresh your memory?

A. I think Figure 2 as the ball bearing and the notch.

Q. And in Figure 2, the biasing element is biasing against that ball bearing, correct?

A. It is.

Q. Going back to embodiment three, if you look at Figures -- Figure 17 and look at the pivot point, 316, is the blade -- First, is that pivot point in the forward end, in your opinion?

ATTORNEY SHULL: Can you repeat the question, please? I didn't hear it.

(The previous question was read out loud by the

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certified stenographer: Question: "Going back to embodiment three, if you look at Figures -- Figure 17 and look at the pivot point 316, is the blade -- First, is that pivot point in the forward end, in your opinion?")

ATTORNEY SHULL: Object to the form of the question.

A. When the blade moves to the aft position as we talked about, sliding to the aft position, it moves into the pivot position as described in Vandewater -- as described, so the blade moves into the pivot position with the pivot pin on the forward end of the blade as shown in Figure 18.

BY ATTORNEY MCKINNIE:

Q. So, your suggestion, if I'm understanding correctly, is that the pivot point is not determined until it's at Figure 18; is that accurate?

A. It could pivot anywhere along the line, but the pivot position is the forward position, 318.

Q. 316 you mean, or 3 --

A. 316. I apologize.

Q. So, you're saying you can pivot anywhere along that slot, trench, whatever you want to refer to it, 313A and 312A, it can pivot anywhere along that slot --

A. It can move. It can move.

Q. And if it were to pivot as shown in Figure 17, would that be the forward end, in your opinion?

A. No. The forward end is depicted in Figure 18.

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Q. I want to go up to column eight. Let me just go through the figures here. So, is it -- I'm referring to Figure 1, the first embodiment, because that is the one that has the drawings at least of this engaging element. It is your understanding, then, if this blade were to hit bone on, let's say, 18 and push 18, as you would say, it would go into a retracted position in your terminology, you'd agree with me there's nothing that would automatically return it back to the center, correct?

ATTORNEY SHULL: Object to the form of the question.

A. In the body of the patent it says you can use the elements in the 300 series, so you would -- one skilled in the art would know that you could take those elements that we were just talking about for the latter figures and use them on Figure 2, Figure 1.

BY ATTORNEY MCKINNIE:

Q. And so you'd add in that 317 pivot limiter?

A. Something -- something along that line. I would know that you would put a biasing element, something -- something like -- like described in those figures.

Q. So, even though in embodiment three you're still suggesting that you would have to add a spring in there --

A. No, I'm not.

Q. -- not shown in the drawing?

A. No, I'm not.

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Q. Okay. So, as drawn, you're suggesting, for Figure 18, you push 313 into a retracted position and it will automatically bounce back to an expanded position?

A. That's not what the claims say in the Flanagan patent.

Q. Well, I'm asking you about Vandewater in Figure 18.

A. If that was -- Okay. So, if that was going -- I'll answer your question then: If that was going through an animal and 319 or 313 got pushed, then yes, it would return generally to the center position.

Q. What is pushing it back to the centered position?

A. Whatever it was encounting what it was going through.

Q. So, it's the forces acting on the blade that are making it in the centered position?

A. Or -- The answer is yes. Or you could add a spring, which it says you can do.

Q. But again, there's no spring shown on the drawing?

A. They expressly say that it's not shown, but no, it's not shown in Figure 18.

Q. The only spring that is shown in Vandewater on the figures is Figure 2; is that correct?

ATTORNEY SHULL: Object to the form of the question.

A. Yeah. That's -- I would agree.

(Exhibit No. 11 was marked for identification.)

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BY ATTORNEY MCKINNIE:

Q. I'm going to show you Exhibit 11 which is -- I'll represent to you it's Exhibit 1012 to the petition. And you're pronouncing it as the Liechty?

A. Liechty.

Q. Liechty. Are you familiar with this patent?

A. I am.

Q. Were you familiar with this patent prior to this dispute?

A. I was.

Q. And you stated -- I believe you said that you thought that the Grim Reaper commercial embodiment was related to this patent?

A. I said I think it could be. The reason why I say that is the guy that owns -- the patent owner owns Grim Reaper broadheads.

Q. Is Grim Reaper a brand of -- like, the Crimson Talon, like it's a line of broadheads, or is it a company name?

A. I think it's the -- I --

Q. Or both?

A. I think it's -- I think both.

Q. Okay.

A. I don't know for sure. The broadhead's called the Grim Reaper.

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Q. Okay. Thank you.

A. If that's what this is depicting. I don't -- it's been years since I've seen -- I've held one and used one or touched one or --

Q. I understand.

Can you tell me briefly how this -- how the disclosure in Liechty works? Operates. Excuse me.

A. Figure 2, that broadhead is shot; 58 contacts the animal. The force on 58 overcomes the biasing of the -- the locking of the spring at the bottom of the blades and the blades extend, and then as it goes through an animal, let's see -- that's figure -- sorry. Figure 5, that's a -- that's the drawing of it going through an animal. The blades are biased by 80 and maybe 82, two lines on the spring. And they pivot about -- pivot point 70, and the arrows show the direction of the biasing.

Q. And that's urging -- So, Figure 1 and 2 are showing the blades in the retracted position?

ATTORNEY SHULL: Object to the form of the question.

BY ATTORNEY MCKINNIE:

Q. Figure 5 is showing the blades in the extended position?

A. No.

ATTORNEY SHULL: Object to the form of the question.

A. Actually -- Actually, Figure 5 shows them in the

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retracted position and the arrows indicate the direction to push them into the deployed position; thus, increasing the distance between the first and second blade member to the ferrule.

BY ATTORNEY MCKINNIE:

Q. So, your suggestion is Figure 5 is not showing the blades in a deployed position. You're showing that's showing that in a retracted position?

A. I am. And I believe the abstract pretty much delineates how this -- what I just said -- Well, let's see. "When the arrowhead penetrates an object, the blade edges are disengaged from the holding elements. The blades freely rotate to an open position with the other opposing blade end of each blade rotating away from the body urging -- the urging force continuously urges the cutting edges of the blade in a forward direction when the blades are in the open position further slicing uncut and unpenetrated tissue."

Q. But even though the specification says it goes into an open position, you're suggesting that it's actually going into a retracted position?

A. Well, by definition -- I'm looking at this from the Flanagan claims. I'm not interpreting what the -- what he calls stuff. It's like the pivot limiter versus a biasing element. And Figure 5 as noted by 80 or 82, the spring, you can see that the spring is nearly compressed but not

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completely compressed so that those blades could go further down into a further retracted position. And then if you look at Figure, say, 3 or 4, too, the spring, you can see that the spring will open up in Figure 5 and push the blades forward to a deployed position, so mimicking the Flanagan patent.

Q. But the pivot point, though, is 52, correct?

A. It is.

Q. And you're suggesting that is at the forward end?

ATTORNEY SHULL: Object to the form of the question.

A. The forward end of what?

BY ATTORNEY MCKINNIE:

Q. Well, let's go look at Claim 11 for Flanagan. "A ferrule having a rearward end configured for attachment to the shaft and an opposite forward end with the ferrule body extending therebetween." So, let's look at Liechty. Would you say --

A. Go back, would you? I -- I was --

Q. Sure.

A. Your mind works a lot faster than mine does.

ATTORNEY SHULL: I think it would be also helpful if you make reference to where he's making this opinion in his declaration. It's unclear what you're referring to. When you reference his opinion in here, you're not centering on his direct testimony, so it's vague and ambiguous.

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BY ATTORNEY MCKINNIE:

Q. So, under Claim 11 under the first element, the first element paragraph it says, "A ferrule having a rearward end configured for attachment to the shaft and an opposite forward end with a ferrule body extending therebetween.

"The forward end of the ferrule defining the forward tip of the arrow and being fixed with respect to the ferrule body." So, let's look at Liechty. Would you agree that 32 appears to be pointing to a -- to the tip, to the forward end of the ferrule?

ATTORNEY SHULL: Object to the form of the question. It mischaracterizes his direct testimony. That's not what his testimony is.

A. Yeah. I was going to say where are we referencing my -- my declaration?

BY ATTORNEY MCKINNIE:

Q. Dr. Kuhn, I'm asking you a question: Is 32 the forward tip on Liechty?

A. Well, your assumption was that in Figure 3 that was the retracted position, so...

Q. So, you're suggesting --

A. It's not.

Q. -- this is the retracted position? Your position is Figure 5 is retracted, correct?

A. Correct.

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Q. Is 32 the forward tip of the ferrule body?

A. Let's go on my declaration where we're talking about this. Can you refer me to that?

ATTORNEY SHULL: Or you can just turn to that, Dr. Kuhn. Just turn to where your declaration -- where you're making that statement.

A. I don't know exactly where that is. I don't want to get wrapped around terms that one inventor is using that don't apply to -- to the -- what we're talking about in the patent. The Flanagan patent.

BY ATTORNEY MCKINNIE:

Q. Well, you can go to 154.

A. Okay.

Q. Those are your annotations. The words were added by you; is that accurate?

A. That's correct.

Q. So, you have a forward end. You have the ferrule. You have the rearward end. So, now I want to reference back to Flanagan where it says, "A first blade member having a forward end pivotally interconnected with the ferrule body and an opposite rearward end." So, you're suggesting that it's interconnected at the forward end -- I'm not entirely understanding why you're referencing that as the forward end when it's clearly at the back of the ferrule on the broadhead.

A. I think -- I think, as I said, Figure 5 depicts what

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the issue is, which is retracted versus deployed, the biasing member, the direction of the biasing.

Q. Well, let's look at page 156.

A. The image that is on the right with the blades at 90-degree angle to the --

A. I think we -- I think we need to look at Figure 5 on 155.

Q. Well, I -- Okay. What did you want to tell me about it?

A. It says, "Illustrate in Figure 5 annular spring --

(Certified Stenographer asks for clarification.)

A. I'm sorry. I don't know why I keep doing that. "Liechty II discloses this requirement of claim 1. Liechty discloses: As illustrated in Figure 5, annular spring 80 drives continuously urges cutting edge 54 of each blade 50 in a forward direction, further slicing or cutting -- or further slicing uncut or unpenetrated tissue."

BY ATTORNEY MCKINNIE:

Q. So, looking at page 156, though, you're acknowledging the blade is moving in the, quote, forward direction, which puts it more towards close to the ferrule body, correct? I mean, that's swinging that outside -- where you have that second end is swinging up towards the ferrule body, correct?

A. Increasing the distance of the first -- between the

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first and the second end.

Q. Now, how did you arrive --

A. Are you -- Are you asking me if those blades rotate, they're going to rotate all the way up?

Q. They're rotating towards that direction though, correct?

A. They're being biased -- biased up.

Q. Only when a force is being applied against them, correct?

A. When they're being shot -- When it's in Figure 5 when it's being shot through an animal, here's a force being applied to the blade member, correct.

Q. So, how does it end up at the figure that you've added on 156?

A. That's just -- I think in retrospect -- in retrospect, I think that that's an exaggerated illustration. I think it should be -- Figure 5 should be here and then the annotated or the -- the illustration that -- on the right, could be like this. I think the exaggeration is what is confusing because it goes from here, to here, to here, to here, to here. That was an exaggeration to show you that the blades were being urged in a forward motion.

Q. Do you have any data to back that up as to where it would be or why you'd be -- you're saying that's wrong now?

ATTORNEY SHULL: Object to form.

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A. I'm not saying it's wrong.
BY ATTORNEY MCKINNIE:
Q. Sorry. An exaggeration.
A. I'm not saying it's an exaggeration. I'm saying -- I'm saying that -- that it shows an exaggeration of the blade movement. They can move from anywhere in between there. The Delta could be a millimeter. It could be a centimeter. It could be -- as long as it's increasing the first -- as long as the distances between retracted and deployed are increased. Doesn't say how much, in Flanagan, it needs to be increased or decreased. It just says that they increase or decrease.
Q. Could it be possible that that spring could rotate those blades all the way back up?
A. No.
Q. Why not?
A. Well, because if you look at Figure -- I'm not on Liechty. I think we're getting off on a tangent here because all that matters is when the -- when the broadhead is going through the animal as in Figure 5, it's not going -- the blades are not going to be urged into that position. They're going to be urged forward but not to the -- as what you called the retracted position.
Q. And you're just -- I mean, does the specification say that?
A. One skilled in the art would know that. I don't

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think that every single thing is going to be delineated in the specification. That's my opinion as the expert and having designed lots of broadheads with springs.
Q. Just so we're clear, the drawing that you have on 156, though, every drawing that you have in which the blades are at a 90-degree angle to the ferrule body are ones that you generated that were not in the Liechty patent, correct?
ATTORNEY SHULL: Object to the form of the question.
A. Figure 5 is in the Liechty patent. The noted drawing on the right is -- Yes. That's how I modified that drawing.
BY ATTORNEY MCKINNIE:
Q. Right. Page 156 and 158, it -- essentially, I was just trying to get a --
A. It was illustrative because when I read the Liechty patent, you can get wrapped around the axle -- excuse my street lingo; whatever it is. You can get wrapped around the axle about the words used: Deployed, retracted. And if you're not paying attention with the patent, with the mechanism, how the mechanism actually works, you can go, oh, that's not the same thing. But it is. Figure 5 shows you that it's the same thing. Deployed, retracted, urging the blades forward; yes, it's going through an animal. And no, it's not going to get to the -- to the annotated figure on the right.

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Q. All right. Last patent. This is Exhibit 12.
ATTORNEY SHULL: Let's take a quick break. We've almost gone for an hour. I need a bio break.
(Recess taken from 1:29 p.m. until 1:36 p.m.)
THE WITNESS: Can I make -- can I add a note to -- the -- I think that I'm confusing -- I'm confusing Jason. Not my Jason, but the other one.
The Figure 5, the annotated one, when I said that the -- I'm using the word "exaggerated," that's the -- Did I lose you?
BY ATTORNEY MCKINNIE:
Q. I'm trying to find the picture.
A. The one on the right -- the one on the left -- I'm struggling to make myself... The one on the left is when it's going through the animal. And the blades are being urged forward increasing the distance, and the figure on the right shows how that -- how those blades can be urged forward. And depending on the viscosity, whatever the broadhead on the left is going through, those blades can be urged forward along some linear line or -- to get it to the -- if it's not -- if it went -- if it went through a stomach, a void stomach or a lung, then the blades could be urged the way they are noted on the right side. That's to show -- does that make sense? I -- that's -- I --
Q. If I understand you, you're suggesting that if the

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force going against the blade while going through the animal, the weaker that force is then the more biasing force, in your opinion, from the spring moves those blades to the forward position?
A. Yeah. It's -- it's the -- the amount of force on the blades as it's going through the animal in Figure 5. It's a balancing act between Figure 5 and the annotated -- I hope annotated is the right word -- figure on the right where the blades are perpendicular to the ferrule. The more viscous it is, they're going to stay further down. The less viscous, the further up they go. And if you went through a lung that has no viscosity -- let's argue that it has air -- then the blades could be urged into that position on the right. I didn't want my word "exaggerated" misinterpreted. That's all I had.
Q. And how did you reach the conclusion that they could be at that 90-degree angle?
A. By one skilled in the art. It's just urging the blades forward.
Q. There's nothing in the specification that expressly told you the blades could be at this 90-degree angle if they were going through lung tissue or stomach tissue?
ATTORNEY SHULL: Object to the form of the question.
A. It's dependent on the viscosity or the hardness of whatever the blades encounter in Figure 5. If there's less hardness, the blades are going to move forward further. If

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it's more -- If it's harder, the blades going to move further back; hence, the spring on the -- The reason why is because -- now, I'm not on the right -- the blades -- The spring is the key on the right. It shows the spring extended. So, that's -- In my opinion, that's the extent of where the blades with go.

Q. That's -- in your opinion, that's the maximum amount is --

A. That's --

ATTORNEY SHULL: Object to the form of the question.

A. -- we're kind of -- we're kind of nitpicking now. That's my opinion as one skilled in the art after building and designing broadheads that have springs that bias the blades.

(Exhibit No. 12 was marked for identification.)

BY ATTORNEY MCKINNIE:

Q. All right. Let's -- I don't know if I introduced it or not. Exhibit 12 is Exhibit 1013 to the IPR petition, and it is the -- referred to as the Hendricks patent.

Dr. Kuhn, do you recognize this?

A. I do.

Q. And this is entitled A Spearhead With A Swingable Barb. And it is your opinion that "barb" can -- is a synonym for "blade" --

A. It is.

Q. -- in this patent, correct?

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A. It is. It's also my contention that anyone skilled in the art could look at the -- look at the figures with that 26 and know that can be a blade.

Q. Do you recall what the purpose of this invention was?

A. Do I recall what the purpose of this invention is?

Q. Correct. Of the Hendricks patent. I'll just reference you here to column one where it says, "The cocking action between the barb and the catch permits the barb to be quickly closed and the head withdrawn from the target with only a minimum expenditure of time and effort on behalf of the weapon user." When you read that, do you understand that to mean this invention is intending to create a faster way to remove a spear that has a barb on it from the animal that it was pushed into?

ATTORNEY SHULL: Object to the form of the question.

A. What the inventor's purpose as stated there, to me as one skilled in the art is of little consequence because what I do -- did, is I look at the -- we're back to pivot limiter and biasing element. I'm looking at the drawings, Figure 3, and seeing that retaining mechanism a biasing member, a pivot point; those things that are required by the Flanagan patent. I don't know what the -- what his intention was or if that's germane to what -- to what I was looking at to determine if this was pertinent for the Flanagan patent.

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I'm sure that's what -- if that's what it says, he says his purpose was.

BY ATTORNEY MCKINNIE:

Q. So, you looked at the -- So, then, in the Flanagan patent, there was a second blade member and you saw in Hendricks that there was only one blade, correct?

A. Correct.

ATTORNEY SHULL: Object to the form of the question.

BY ATTORNEY MCKINNIE:

Q. I used the term "blade" as in that -- that's how you refer to it. Hendricks refers to it as a barb.

So, then you determined, then, going back to your declaration, page 138 -- page 138 you determined that you could add a second barb on the other side of the ferrule head, correct?

A. I said blade. Not barb.

Q. You could add a second blade to the Hendricks patent similar to how Flanagan described it?

A. You want -- Sorry, Jason, you're page what?

Q. 138.

A. Okay. Thank you. I apologize for being absent-minded. Yes. That's what I determined.

Q. And this drawing is one that you created, correct?

A. Correct.

Q. And so, the drawings on 138 -- sorry. I'm going too

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fast here. 139, 140, 141, 142, 143, are all drawings that you added or manipulated from Hendricks, correct?

A. I mirrored -- I mirrored Hendricks' mechanical contrivance if that's what you'd call it. And I mirrored it, yes, to produce those drawings, figures.

Q. So, I'm looking at Figure 3 on the Hendricks patent, and it looks like the barb, which you are referring to as a blade, is within a slot that generally takes up the entire ferrule unit; whereas, now, in the drawings that you have made, you have almost doubled the width of the ferrule body; is that accurate?

A. I don't think I claimed that it was to scale, but yes, for illustrative purposes.

Q. So, now, if Hendricks wanted to remove -- So, under your position here, if Hendricks had done this, both barbs, or as you're referring to them as blade members, would be deployed within the animal or the fish, correct?

A. They would be deployed in whatever ...

Q. Target?

A. Target releases the retaining mechanism.

Q. And as Hendricks expressly states as the purpose of the patent, to go back out, that, "The cocking action between the barb and the catch permits the barb to be quickly closed and the head withdrawn from the target with only minimal expenditure of time and effort." So, if you had two -- what

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you're referring to as blade members, now -- would that double the amount of time necessary to now pull the entire unit out of the target?

ATTORNEY SHULL: Object to the form of the question.

A. I think you may be misunderstanding what he's saying. When you shoot this and it goes through an animal, the blades are deployed. They've been urged by the biasing element. And if there's two, it's out the other side of the animal.

To retract it, you merely reach down and go [indicating] -- Jason, can you see me? You go [indicating] and it closes it. If you had it one-sided and you went to close it, you'd do that [indicating]. It's the same. You're not doubling any time, any -- anything it's the same. Same-same.

Q. So, you don't think there's any extra effort by adding -- You're assuming that the size of it would fit between two hands or two fingers, then? It's not a giant spear? We don't have any --

A. No. I don't think you should mistake my illustrations as a manufacturing drawing. And one skilled in the art would know how to -- to design that to scale.

Q. Well, the point of the barb for Hendricks is to help maintain the spear or like-weapon within the target, correct?

ATTORNEY SHULL: Object to the form of the question.

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A. That's what the -- that's what he says, but as I said, looking at this simply from one skilled in the art, that is a really good mechanical machine there as far as biasing the blade with a simple retaining mechanism that does exactly what Flanagan does and you simply mirror it, and whether you have to scale it or not, evidently you would have to, maybe you wouldn't, you could shrink the size of the blade. The blade doesn't have to be that wide. That blade is very wide. You could shrink the size of the blade. You could get it to where it was a consumable, marketable broadhead by simply mirroring what's in Figure 3.

BY ATTORNEY MCKINNIE:

Q. And Flanagan had the second blade so you added the second blade on Hendricks?

ATTORNEY SHULL: Object to the form of the question.

A. What I'm telling you is not -- is not uncommon for people that design broadheads. Nobody designs one side of a mechanical -- or two sides of a mechanical broadhead at the same time. It's -- it's common to design one side and then the other. And the prior art teaches that.

Probably the most decorated broadhead designer ever is Robert Mizek who worked for New Archery Products, and he -- in his prior art, he demonstrates the one-sided mechanical, and then in his following figures he shows how he doubles both sides. This is not uncommon at all. At all. Any -- any

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first-year CAD person could do this. And that's how they would do it with the -- In fact, that's exactly how you would design a broadhead using CAD. You would -- you would mock-up the one side and then you would -- you -- for lack of a better word, copy and paste it and mirror it on the other side. No stretch of any -- there's -- There's no imagination needed to do this.

Q. I may be done, but before that goes, Dr. Kuhn, have you had any conversations with Mr. Shull during the breaks?

A. I have not.

Q. Have you read any other material or done any -- talked to anybody else?

A. I went to the bathroom, and I did get another Dr. Pepper.

Q. Okay. Nothing wrong with that.

A. I'm not being tongue-in-cheek. I just --

Q. I understand. I have no further questions. I'll pass the witness.

A. I do appreciate, on a side note, you being patient with me. I --

Q. You were being patient with me, so I appreciate that as well.

A. Well, there's a lot of stress, and we're both -- we both want the best for who we represent.

ATTORNEY MCKINNIE: Correct. Are we done, or,

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Jason, did you have anything?

ATTORNEY SHULL: Yeah. I don't have any follow-up questions.

ATTORNEY MCKINNIE: All right. Thank you for time.

(Discussion off the record.)

ATTORNEY SHULL: Yeah, he'll read it, and then send it to me.

CERTIFIED STENOGRAPHER: And did you need me to produce a transcript, Mr. McKinnie?

ATTORNEY MCKINNIE: Yes. As far as the exhibits go, did you want me to email those to you?

CERTIFIED STENOGRAPHER: Yes, please.

(Discussion off the record.)

CERTIFIED STENOGRAPHER: Mr. Shull, did you want a copy of the transcript?

ATTORNEY SHULL: Yes, please.

(The videoconferenced deposition of TODD A. KUHN, PHD, concluded at 1:57 p.m. CST Reading and signing were not waived.)

CERTIFICATE OF OATH

STATE OF FLORIDA }
COUNTY OF GULF }

I, the undersigned authority, certify that TODD A. KUHN, PHD appeared remotely via videoconference and was duly sworn on Friday, September 6, 2024.

Lisa M. Sparling

Lisa M. Sparling, RPR, FPR
Notary Public - State of Florida
My Commission No. HH 313063
Expires: July 1, 2025

Personally Known _____
OR Produced Identification X
Type of Identification Produced: Driver's License

DEPOSITION CERTIFICATE

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

RE: Bowmar v. Veteran's Innovative
PATENT NO: 8,043,177
DATE OF DEPOSITION: Friday, September 6, 2024

ERRATA SHEET

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Under penalties of perjury, I declare that I have read my deposition and that it is true and correct subject to any changes in form or substance entered here.

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