

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BOWMAR ARCHERY LLC,
Petitioner,

v.

MATTHEW FUTTERE,
Patent Owner.

IPR2024-00401
Patent 8,043,177 B2

DECLARATION OF ROBERT MIZEK

TABLE OF CONTENTS

	Page
I. INTRODUCTION	2
II. QUALIFICATIONS	3
III. THE INTERPRETATION OF THE TERM “BLADE”	6
A. CLAIM CONSTRUCTION PRINCIPLES	6
B. THE ORDINARY AND CUSTOMARY MEANING OF “BLADE”	7
C. THE TERMS “BARB” AND “BLADE” ARE OFTEN USED AS SYNONYMS IN THE ARCHERY INDUSTRY	13

I, Robert Mizek, declare as follows:

I. INTRODUCTION

1. I have been retained as an expert in this matter by Bowmar Archery LLC. For purposes of brevity, I will refer to Bowmar Archery LLC as “Bowmar.” I understand that Bowmar has petitioned for an *Inter Partes* Review of certain claims of U.S. Patent No. 8,043,177. For purposes of brevity, I will refer to the patent as the “Flanagan patent.”

2. I have been asked to respond to the opinions of Patent Owner’s expert, Mr. Wayne Willkomm, relating to the interpretation of the term “blade member.”

3. In forming my opinions I have considered the Flanagan patent, the prior art and other references cited in this Declaration, my more than 40 years of education, training and experience in the design of archery products including broadheads and my knowledge of what was known in the archery field during the relevant period of time. A copy of my CV is attached to the end of this Declaration.

4. I have been involved in the engineering, design and development of broadheads for hunting and target practice for most of my professional career. I have also been shooting bows and crossbows for over 40 years and have developed a good understanding of how broadheads function.

5. I am being compensated for my time at a rate of \$225.00 USD per hour, plus actual expenses. My compensation is not dependent in any way upon the outcome of Bowmar's petition.

II. QUALIFICATIONS

6. My formal education began with a Bachelor's Degree in Business Administration. After college I awakened to the realization that my life's passion was engineering and sought to gain the knowledge and necessary skills to be a competent engineer without starting over in school. I have taken numerous courses and received substantial training relating to engineering and product design, including for example: training regarding the use of computer aided drafting (CAD) software, three-dimensional modeling, Finite Element Analysis (FEA) software, gear design, machine design, and training in the use of advanced materials. Some of that training occurred when I worked as a Senior Process Engineer for a manufacturing company for approximately four years (approximately 1989-1993).

7. Twenty one years of my professional experience (approximately March 1993 – February 2014) was with New Archery Products ("NAP"), a well-known and respected company that has a history of making new and innovative archery products including broadheads and other archery products. While at NAP, I held various roles including Director of Operations and New Product Development, and my last title was Director of Engineering. During that time, I contributed to the development of

well over 15 broadhead product line. One of those products, branded ““BloodRunner,” was in development at the same time as the filing date of the Flanagan patent. As another aspect of my work at NAP, I monitored the archery industry and kept abreast of new archery products, including broadheads. I also contributed directly to and am a named inventor on approximately 42 patents related to archery technology, with 21 patents related to broadheads specifically, including both fixed and mechanical broadheads. For reference purposes, several patented inventions are under license by other companies within the archery industry including those broadheads successfully marketed by Ravin Crossbows.

8. I also worked for Bear Archery, Inc. (“Bear Archery”) as a Project Manager for almost two years (from March 2014 to December 2015). While at Bear Archery, I was routinely involved in the design and engineering of fixed blade and mechanical broadheads as well as vertical bows and related components. I also mentored and collaborated with engineers regarding the design of crossbows and crossbow components.

9. Since retirement I also was employed from 2018 thru 2023 by Easton Technical Products for the purpose of getting them into the broadhead business. The result was the “Sev’r” mechanical broadhead, which is the first successful direct-to-consumer broadhead brand.

10. I also founded and operated Hi-Tek Sports Products, an archery product company for approximately 4 years (1990-1993). As part of that company, I was responsible for the design and development of new and innovative archery products, including for example the “Accu-Flite” archery stabilizer which introduced the first generation of vibration dampening to vertical bows and crossbows. The company remains in business today and continues to be a leader in its field.

11. For my work I have received numerous awards and recognitions. For example, for several years from 1999 – 2014, many products that I designed such as the Spitfire broadheads, QuikTune Arrowrest, Thunderblox, Quikspin vane, Magnok, Apache arrowrest, among others, won Gold, Silver, or Bronze “Readers’ Choice” awards from “Bowhunting World”, a leading archery publication for consumers, and “Dealers Choice” awards from “Inside Archery,” a leading publication for archery retailers.

12. I am now semi-retired, but continue to perform some contract design and engineering work in a number of different industries, including archery, sporting goods, high precision machining, amorphous metal vacuum casting, and consumer products.

III. THE INTERPRETATION OF THE TERM “BLADE”

A. CLAIM CONSTRUCTION PRINCIPLES

13. I have been informed that the scope of a patent claim is to be determined by the words of the claim itself, read in view of the relevant intrinsic record—i.e., the specification and file history. I have further been informed that the claims are to be interpreted in terms of their meaning to one of ordinary skill in the art at the time of the invention (i.e. “the ordinary and customary meaning”), which I understand means on the effective filing date of the patent application. In my opinion, a person of ordinary skill in the art at the time of the filing of the Flanagan patent would have either: (1) a bachelor’s degree in the field of mechanical engineering, and/or related field and at least two years of work experience in the design and development of broadheads; or (2) any education and experience equivalent to (1).

14. I have also been informed that extrinsic sources of information, in addition to the patent and file history, may be used inform the understanding of one of ordinary skill in the art at the time of patenting but that such extrinsic information cannot overcome a meaning for a term that is compelled by the specification or file history, such as when the patents expressly define a term in the specification or when the patentee has made a clear and unambiguous disclaimer during prosecution of the patent.

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

B. THE ORDINARY AND CUSTOMARY MEANING OF “BLADE”

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

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

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

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

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

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

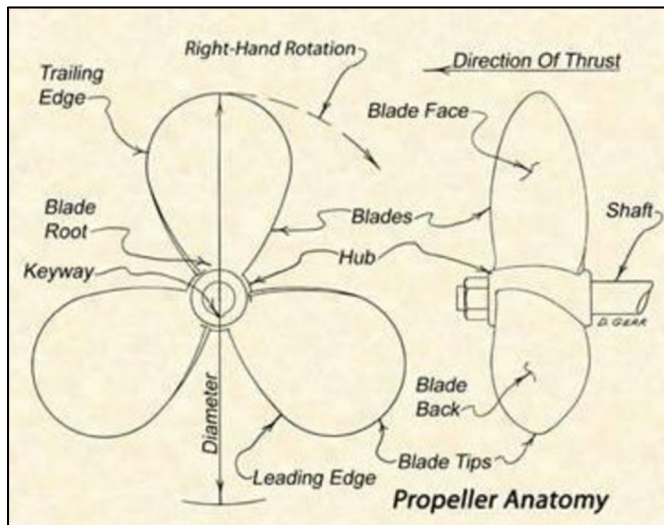
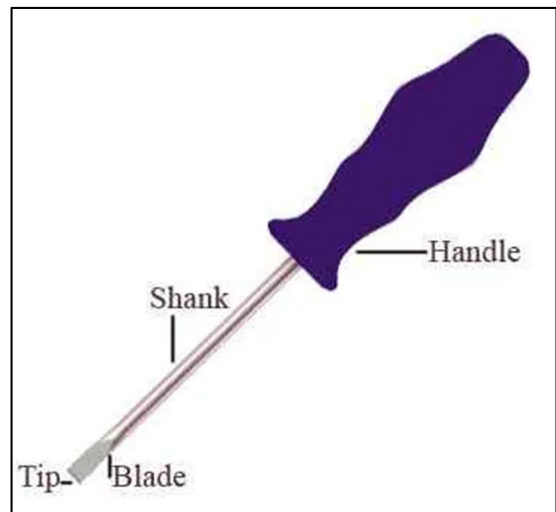
issued on July 1, 1980. The invention disclosed in Kosbab permits a user to switch or interchange different forms of blades depending on the use of the broadhead. Kosbab explains that the “broadhead arrowhead 20 may be easily assembled and disassembled so that its blades and/or devices can be interchanged easily with blades and/or devices of other types.” Col. 3, Lines 33-36. Kosbab discloses different forms of blades, depending on the application of the broadhead. For example, Kosbab states: “FIGS. IX through XII show four different forms of blades, namely straight, notched, unsharpened and blunt.” Col. 3, Lines 50-52. A person of ordinary skill knows that the “unsharpened and blunt” blades disclosed in Kosbab are still “blades” even though that do not contain a sharp edge.

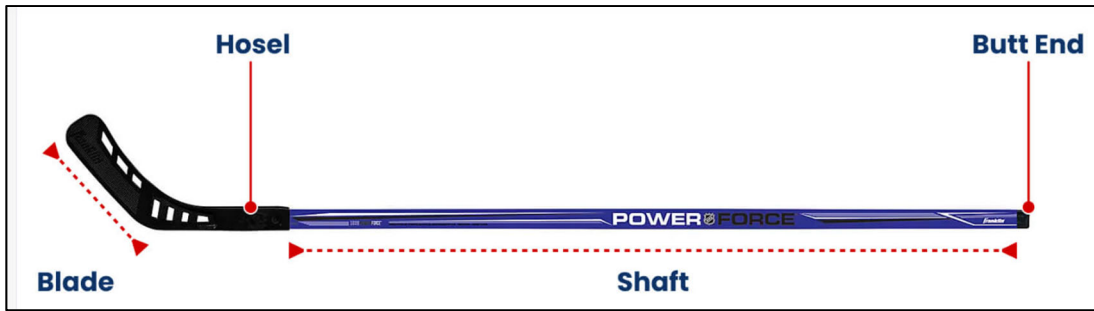
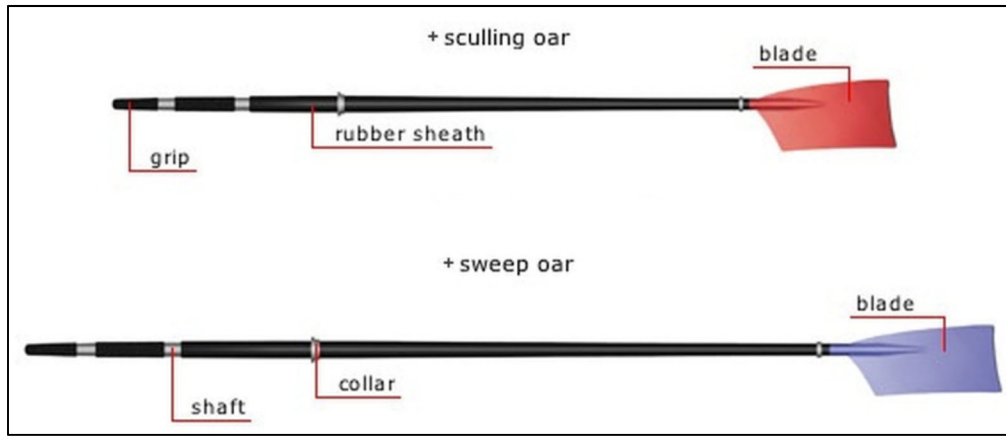
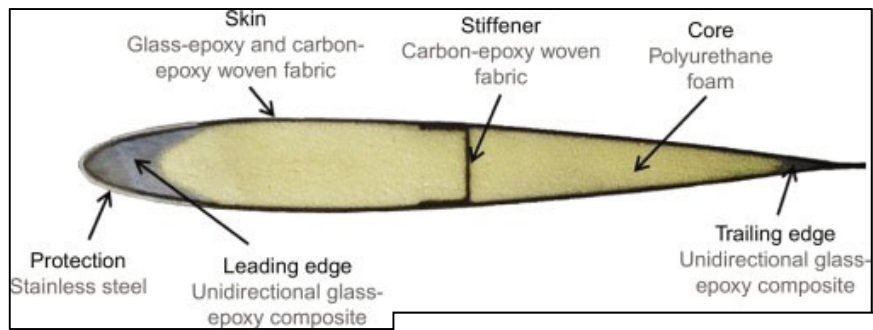
21. U.S. Patent No. 4,405,133 is entitled “Practice Arrow Adaptor Simulating Hunting Arrow Characteristics.” For purposes of brevity, I will refer to this patent as “Cartwright.” Cartwright issued on September 20, 1983. Cartwright discloses “the blades 66 may be two or more, as desired to simulate a particular type hunting head, and may sweep back rearwardly as at 68.” Col. 3, Lines 7-9. Cartwright discloses: “Area and weight and sight picture and flight characteristics are by design practically the same as those of the hunting head simulated. The blades preferably are dull, not sharp.” Col. 3, Lines 12-15. A person of ordinary skill in the art knows that the “dull” blades disclosed in Cartwright are still “blades” even though that do contain a sharp edge.

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

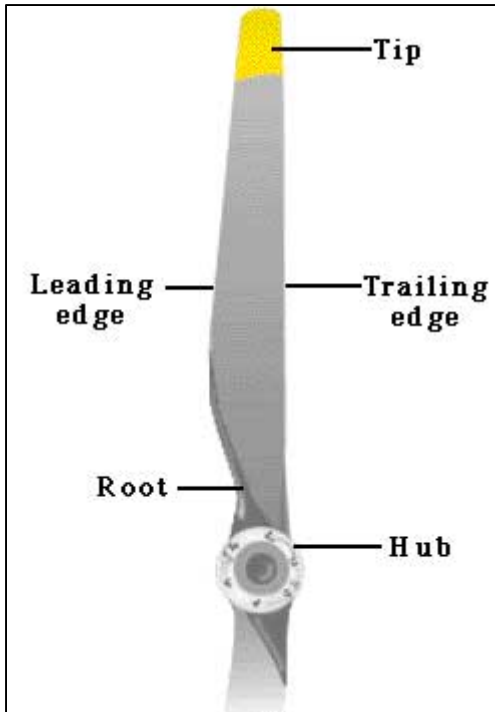
23. As noted above, I have reviewed the deposition testimony of Mr. Wayne Willkomm. Mr. Willkomm testified that he did not consider any such prior art when forming his opinion. His interpretation of the term “blade” is therefore incorrect and clearly does not account for the fact that the term “blade”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

24. As noted above, the term “blade” is not unique to the archery industry. It is common knowledge that “blades” are utilized on common devices, for example, screwdrivers, oars, hockey sticks, and propellers – just to name a few. For example, flathead screwdrivers feature a single, flat blade and come in various sizes to fit different screws. It is common knowledge that “blades” on screwdrivers are not sharp, and do not have a “sharp part.” Likewise, oars, hockey sticks, and propellers all have “blades” – none of which have a “sharp part.” I have had a pilot’s license for a number of years and became a student helicopter pilot in 2024. Helicopters use blades instead of wings to provide lift. The back of each blade forms a trailing edge to aid in the creation of lift. In summary a common feature of all “blades” on such devices, however, is that they have an edge.





Cross Section of Helicopter Blade



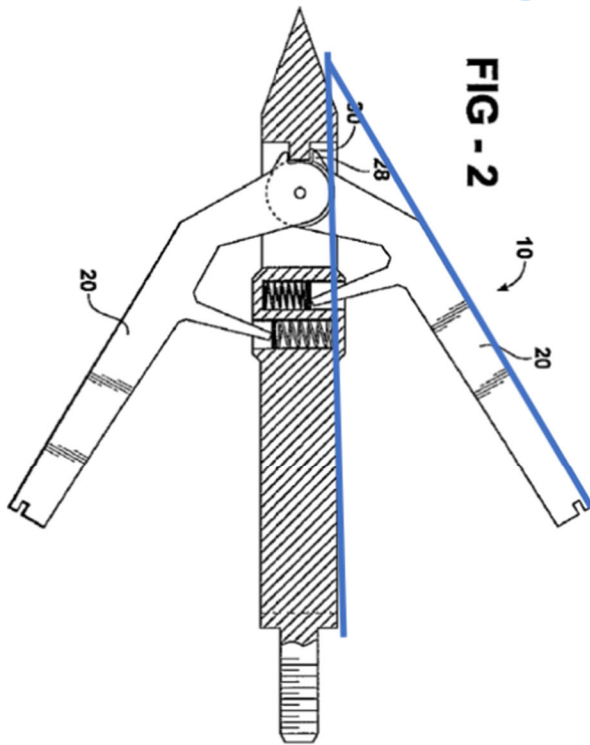
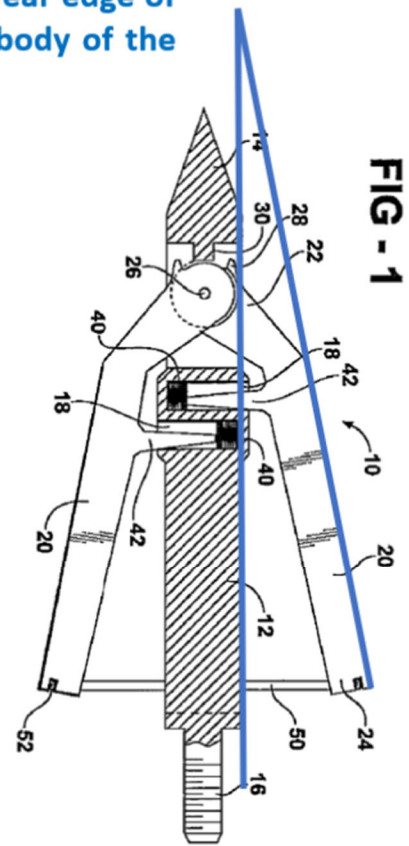
Leading/Trailing Edges of Typical Airplane Propeller

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

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

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

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

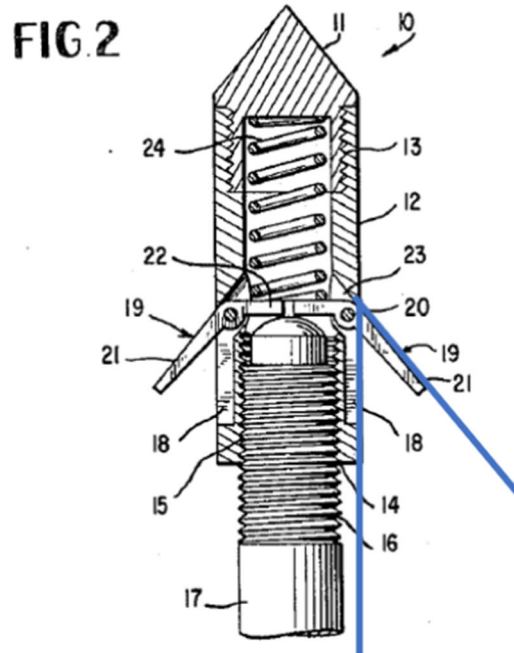


27. Another example of a broadhead that contains both a “blade” and a “barb” is U.S. Patent No. 3,168,313. For purposes of brevity, I will refer to this patent as the Lint patent. The broadhead disclosed in the Lint patent contains two “barbs 19.” Each “barb 19” constitutes a blade because it is a device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

of each “barb 19” and the ferrule body of the broadhead is less than 90 degrees.

Figure of the Lint patent, along with annotations, is shown below.

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

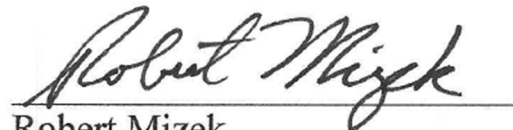


28. I note that during his deposition Mr. Willkomm was shown a well-known bowfishing broadhead sold by Feradyne under the brand “Muzzy.” Feradyne and its Muzzy brand of products are well-known and reputable in the archery industry. Mr. Willkomm testified that the Muzzy broadhead (shown in Exhibit 1031)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

which is the terms “blade” and “barb” are often used to describe the same component or element of a broadhead in the archery industry.

29. I hereby declare that all statements made in this declaration of my own personal knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like are punishable by fine, imprisonment, or both, under Section 1001 of Title 18 of the U.S. Code.

Executed on December 17, 2024


Robert Mizek

Curriculum Vitae

Robert S. Mizek

1033 119th St.
Lemont, IL 60439

December 2024

ACADEMIC BACKGROUND

Bachelor of Science in Business Administration, Illinois State University, May 1977

OTHER EDUCATION

Certificate in Statistical Process Control, IBM Corp, 1982

Certificate in Metrology, Triton College, 1982

Certificate in Theory of Constraints in Manufacturing, Goldratt Institute, 1988

Certificate in Gear Design and Manufacturing, Koepfer America, 1990

Certificate in CNC Programming, Triton College, 1990

Certificate in Solidworks 3-D CAD, Solidworks Corp., 1999

Certificate in Design for Metal Injection Molding, Metal Injection Molding Institute, 1998

PROFESSIONAL EXPERIENCE

Independent Consultant – Broadhead Design, Mechanical Design. Manufacturing, Industrial Process Improvement, Intellectual Property reviews, Expert Witness. January 2015 - present

Areas of expertise: Mechanical Design, Automated Assembly, Test Protocol Development, Machining, Plastic and Metal Injection, Metrology, Amorphous Metal Casting. Advanced Materials, Stamping, Grinding, and Edge Sharpening among others.

List of Broadhead Brands Developed and Commercially Offered for Sale

SEV'R Mechanical Broadhead – Easton Technical Products

SIK Mechanical Broadheads – Bear Archery

Killzone Mechanical Broadhead – New Archery Products

Ravin Mechanical Broadheads (under license)
Spitfire Mechanical Broadheads – New Archery Products
Shockwave Mechanical Broadheads – New Archery Products
Scorpion Mechanical Broadheads – New Archery Products
BloodRunner Mechanical Broadheads – New Archery Products
FOC Mechanical Broadheads – New Archery Products
Thunderhead 85 Fixed Blade Broadhead – New Archery Products
Thunderhead Edge Fixed Blade Broadhead – New Archery Products
Thunderhead Pro Series Fixed Blade Broadhead – New Archery Products
Nightmare Fixed Blade Broadhead – New Archery Products
Nitron Broadheads – New Archery Products
Hell Razor Fixed Blade Broadhead – New Archery Products
Razorbak 2 and RB-3 Fixed Blade Broadheads – New Archery Products

Bear Archery Division of Escalade Sports

Project Manager, March 2014 to December 2015

New Archery Products Corp.

Director of New Product Development and Engineering, June 2002 - March 2014

Director of Operations and Engineering, July 1997 – March 2002

Design Engineer, May 1993 – July 1997

Hi-Tek Sports Products

President and Founder, April 1989 – May 1993

Merit Machined Products

Assistant General Manager, July 1980 – April 1989

Meaden Precision Products

Cost Estimator / Inside Sales, June 1977 – July 1980

SEMINARS TAUGHT

“Design for the manufacturing of high volume turned components”

IBM Corp, Boulder, CO, 1985

“Design for the manufacturing of high volume turned components”

Ford Motor Co, Dearborn, MI, 1992

“Geometric Dimensioning and Tolerancing for Machine Components”

Forster Tool and Manufacturing. Bensenville, IL, 2018

WHITE PAPERS

“A Sound Decision” Liquidmetal alloy in Musical Instruments

Liquidmetal Technologies, Rancho Santa Margarita, CA, Jan. 2017

ISSUED US PATENTS

[RE49938](#) [Broadhead](#)

[9,664,484](#) [Broadhead](#)

[9,267,773](#) [Broadhead](#)

[8,911,311](#) [Expandable arrowhead or broadhead and spring element](#)

[8,893,700](#) [Archery bow stabilizer having asymmetrical dampeners](#)

[8,469,843](#) [Expandable arrowhead or broadhead and spring element](#)

[8,469,842](#) [Expandable arrowhead or broadhead](#)

[8,460,134](#) [Arrow point alignment system](#)

[8,398,510](#) [Expandable arrowhead or broadhead and spring element](#)

[8,342,161](#) [Arrow rest](#)

[8,333,180](#) [Moveable arrow rest](#)

[8,176,906](#) [Cable buss apparatus for deflecting tension cables in a compound bow](#)

[8,147,360](#) [Serrated blade for arrowhead](#)

[7,955,201](#) [Spin element for arrow or bolt](#)

[7,951,024](#) [Blade-opening arrowhead](#)

[7,856,968](#) [Move-away arrow rest](#)

[7,338,397](#) [Rotatable arrowhead](#)

[7,337,773](#) [Electrically activated archery component](#)

<u>7,331,338</u>	<u>Biased move-away arrow rest</u>
<u>7,232,390</u>	<u>Lockable rotatable arrowhead</u>
<u>7,165,543</u>	<u>Electrically activated arrow rest</u>
<u>7,037,222</u>	<u>Rotatable arrowhead</u>
<u>7,025,697</u>	<u>Blade steering apparatus</u>
<u>6,958,023</u>	<u>Arrow fletching</u>
<u>6,942,551</u>	<u>Method for forming a cutting edge along an edge portion of a blade stock</u>
<u>6,913,008</u>	<u>Apparatus for holding arrow</u>
<u>6,910,472</u>	<u>Archery bow vibration dampener</u>
<u>6,782,881</u>	<u>Move-away arrow rest</u>
<u>6,684,874</u>	<u>Archery bow vibration dampener</u>
<u>6,634,349</u>	<u>Move away arrow rest</u>
<u>6,494,196</u>	<u>Archery bow stabilizer having energy directors</u>
<u>6,431,162</u>	<u>Archery quiver for holding a broadhead</u>
<u>6,398,676</u>	<u>Arrowhead with interchangeable blades</u>
<u>6,186,135</u>	<u>Archery bow stabilizer</u>
<u>6,174,252</u>	<u>Arrowhead with interchangeable blades</u>
<u>6,164,864</u>	<u>Cycle seat clamp</u>
<u>6,142,896</u>	<u>Quickspin archery vane</u>
<u>6,102,020</u>	<u>Slow return arrowrest</u>
<u>6,050,251</u>	<u>Apparatus for adjustably mounting a pivotal arrow rest</u>
<u>5,941,784</u>	<u>Arrowhead with interchangeable blades</u>
<u>5,871,410</u>	<u>Ferrule with irregular skin surface for an archery broadhead</u>
<u>5,743,245</u>	<u>Arrow rest</u>
<u>5,722,381</u>	<u>Apparatus for adjustably mounting a pivotal arrow rest</u>
<u>5,564,713</u>	<u>Arrowhead with pivotally mounted blades</u>
<u>5,522,375</u>	<u>Archery accessory adapter</u>
<u>5,016,602</u>	<u>Noise and recoil reducing bow stabilizer for archery bows</u>