United States Patent [19]

Karbo

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[54] **ARROWHEAD WITH REMOVABLE BLADES**

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[73] Assignee: **Brunswick Corporation,** Chicago, Ill.

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[52] **U.S. Cl.** ..... **273/106.5 B**

[51] **Int. Cl.** **F41b 5/02**

[58] **Field of Search** ..... 273/106.5 B

[56] **References Cited**

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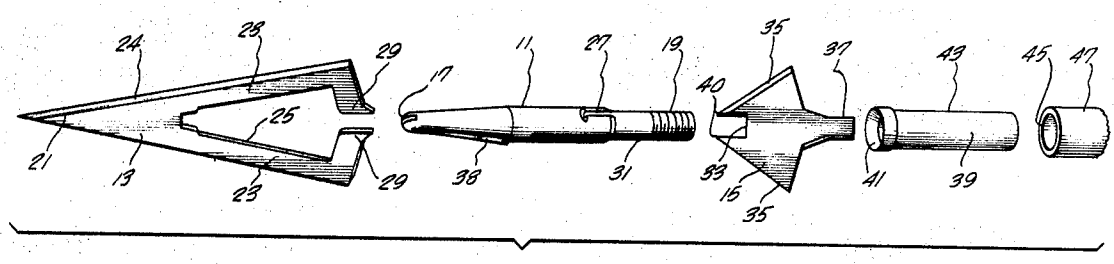
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[57] **ABSTRACT**

A readily disassemblable hunting arrowhead including a first blade engaged in a slot communicating with the front end of the collet and a second blade, orthogonal to the first, engaged in a second slot communicating with the rear end of the collet. Rearwardly and inwardly extending portions of the blades form wedge shaped elements which are engaged and wedged onto the collet by a beveled ferrule threaded onto the rear of the collet. There is a windsplit attached to the collet in front of each side edge portion of the second blade.

3 Claims, 3 Drawing Figures



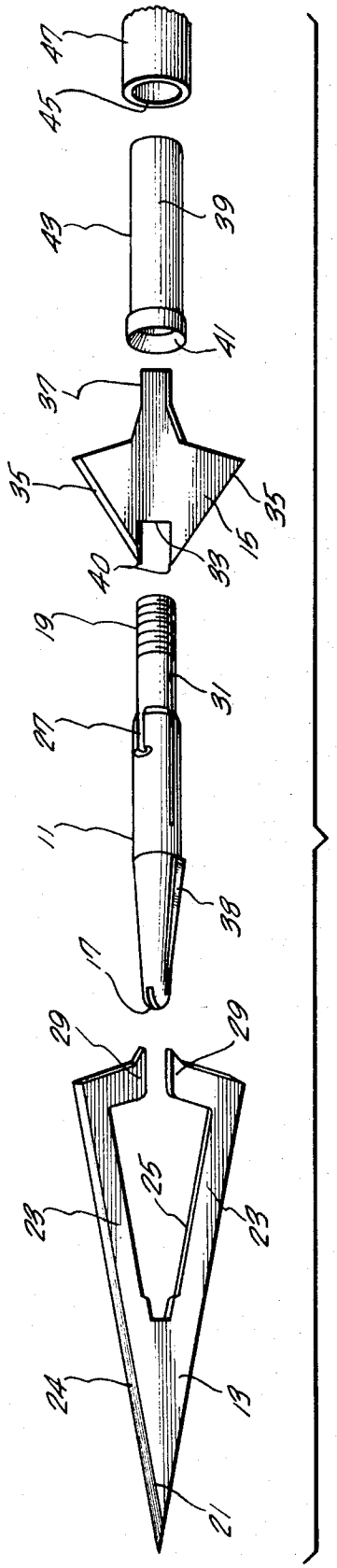


FIG 1

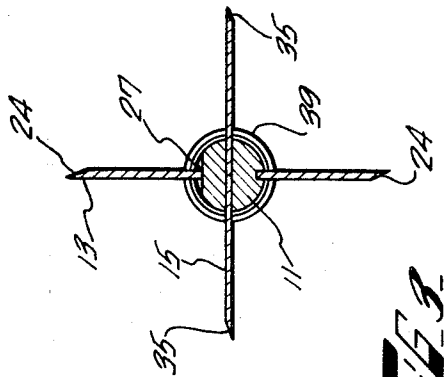


FIG 3

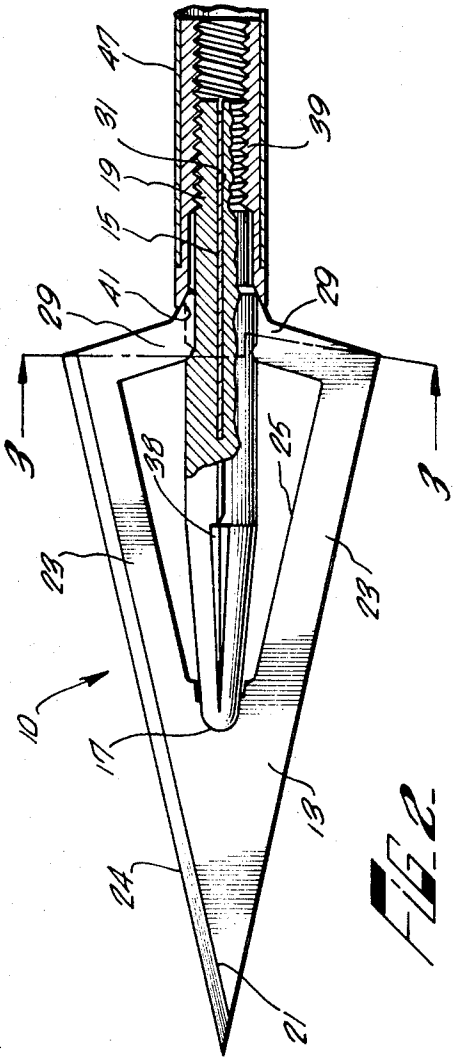


FIG 2

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ARROWHEAD WITH REMOVABLE BLADES

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to archery equipment and more particularly to arrowhead constructions.

2. Description of the Prior Art

The arrowhead of the present invention is an improvement over an arrowhead construction described in U. S. Pat. application Ser. No. 47,219 filed June 18, 1970 now abandoned. In that application the arrowhead comprised a collet having a frontal point secton and four segmental sections extending rearwardly therefrom. A pair of blade members are positioned to extend through the slots formed between the collet segments and extend radially outward therefrom. A collar is provided to be threadedly connected to the rear extremities of the segments to hold the segments together and secure the blades thereto.

A shortcoming with the arrowhead of the prior application is that the frontal point section of the collet is not sharp enough to have the desired piercing quality. As a result, the blades, which have novel razor cutting edges, do not have the opportunity to function properly to provide deadly cutting edges for killing game.

Another shortcoming with the arrowhead of the abandoned application is that the interchanging of the blades is cumbersome. Moreover, since these blades are not secured to the collet until the collar is installed, the blades would quite often fall out and become lost during assembly.

SUMMARY OF THE INVENTION

The present invention overcomes the above-mentioned shortcoming by providing an arrowhead having a greatly improved frontal point section for a greater piercing capability and a novel interconnecting means for greater ease of assembly. The improved arrowhead comprises an elongated substantially cylindrical collet having a slotted frontal area and a threaded rear extremity. A first triangular blade is provided having a frontal point section and two legs extending rearwardly therefrom. The blade further comprises a cut-out portion having an interior apex where the two legs originate. The interior apex of the blade is adapted to extend into the slotted frontal area of the collet while the legs are adapted to extend longitudinally along the sides of the collet. The interior of the legs form a pair of foot sections which are adapted to snap into engagement with a pair of axial grooves formed near the rear end of the collet. The exterior edges of the blade extending from the apex of the frontal point rearwardly along the exterior edges of the legs are finely honed to a razor sharpness to enhance the piercing and cutting capabilities of the arrowhead. The rear end of the collet further comprises a transverse slot separating that portion of the collet into two segments. A second blade is adapted to extend into the slot with the blade having two razor edges extending radially outward therefrom for cutting purposes. A ferrule is provided to be connected to the threaded end of the collet with the ferrule further comprising an annular flanged portion which is adapted to extend over the foot portions of the first blade and portions of the second blade for securing the blades to the collet.

An important advantage of the present invention is the piercing and cutting portions of the arrowhead are integral in a single removable blade. Not only are both sections honed to a razor sharpness, but if they become dull, the blade can be easily interchanged with a new blade.

Another important advantage of the present invention is that the blade changing can be accomplished easier and quicker than heretofore possible.

The features of the present invention which are believed to be novel are set forth with particularity in the appended claims. The present invention, both as to its organization and manner of operation, together with further objects and advantages thereof, may best be understood by reference to the following description, taken in connection with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an exploded perspective view of the arrowhead assembly of the present invention;

FIG. 2 is an elevational view of the arrowhead in its assembled form; and

FIG. 3 is a sectional view of the arrowhead taken along line 3—3 of FIG. 2.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings, FIGS. 1 – 3 show a detachable arrowhead assembly, generally indicated by arrow **10** comprising a substantially cylindrical collet **11** having a first and second blades **13** and **15** respectively, mounted thereon. The collet **11** includes a slotted frontal area **17** and a threaded rear extremity **19**. The first blade **13** is triangular in shape having a frontal point section **21** and a pair of legs **23** extending rearwardly therefrom. The exterior edges **24** of the blade **13** extending from the apex of the frontal point rearwardly along the exterior edges of the legs **23** are finely honed to a razor sharpness to enhance the piercing and cutting capabilities of the arrowhead **10**.

The interior of the first blade **13** includes a triangular cut-out portion **25** in which the apex, where the two legs **23** originate, is adapted to extend into the slotted frontal area **17** of the collet **11**. The collet **11** further includes a pair of axial grooves **27** which are adapted to receive two inwardly extending foot portions **29** of the legs **23**. Because of their flexibility, the legs **23** are adapted to snap into engagement with the grooves **27** after the interior apex of the blade is inserted into the slotted frontal area **17** of the collet **11**. As can be seen, the first blade **13** not only comprises the cutting edges **24**, but it further comprises the frontal point section **21** integrally formed therewith. The advantage of this is that when the blade **13** becomes worn, a new blade can be installed not only having sharp cutting edges, but having a sharp point also.

The collet **11** further comprises a transverse slot **31** formed through the rearward portion thereof for receiving the second blade **15**.

The second blade **15** comprises a recessed portion **33** adapted to extend to the forward end of the slot **31** with the forward portions of the recess initiating a pair of radial cutting edges **35** extending radially outward therefrom. The rearward portion **37** of the second blade **15** is adapted to extend into the transverse slot **31** adjacent the threaded end **19** of the collet **11**.

A pair of windsplits **38** is also formed on the forward end of the collet **11** and is positioned directly in front

of the cutting edges **35** of the blade **15** for protecting the points **40** of the blade **15.**

The arrowhead assembly **10** further comprises a ferrule **39** which is adapted to be threadedly connected to the collet **11.** The ferrule **39** further comprises a frontal annular flanged portion **41** which is adapted to extend over the portion of the collet which contains the rear portion **37** of the second blade **15** and the foot portions **29** of the first blade **13.** For securing these portions to the collet, the exterior cylindrical surface **43** of the ferrule **39** is adapted to be epoxyed into a bore **45** formed within the frontal end of an arrow shaft **47.**

In assemblying the arrowhead assembly, the first blade **13** is mounted on the collet **11** in the manner described above. Afterwhich, the second blade **15** is inserted through the transverse slot **31** with both blades being secured thereto by the ferrule **39** which is threadedly connected to the collet **11.**

An advantage of the present invention is that when the blades **13** and **15** become worn, they can be easily replaced by simply separating the collet **11** from the ferrule **39** and removing the first and second blades **13** and **15** from the collet **11.** Afterwhich, a new set of blades **13** and **15** can be easily mounted on the collet **11** before it is threaded back onto the ferrule **39.**

It should be noted that various modifications can be made to the apparatus while still remaining within the purview of the following claims.

What is claimed is:

1. A readily disassemblable hunting arrowhead comprising:

an elongated collet having a first axial slot communicating with the front end thereof and a second axial slot substantially orthogonal to said first slot and communicating with the rear end thereof,

a first substantially triangular blade comprising the tip of the arrowhead and having a rear undercut portion adapted to fit within said first slot,

a second substantially triangular blade adapted to fit within said second slot, said first and second blades having portions extending rearwardly of the cutting edges thereof, said rearwardly extending portions of said first and second blades are outward of said collet and inclined radially inwardly and toward the rear end thereof, and

means for retaining said blades in a position within said collet including means encompassing said rearwardly extending portions removably engageable upon the rear end of said collet for retaining said blades in place, said means further including a ferrule having its forward inner surface beveled substantially parallel to said incline so as to engage said inclined portions and wedge them inwardly upon being engaged upon said collet.

2. A readily disassemblable hunting arrow comprising:

an elongated collet having a first axial slot communicating with the front end thereof and a second axial slot substantially orthogonal to said first slot and communicating with the rear end thereof,

a first substantially triangular blade comprising the tip of the arrowhead and having a rear undercut portion adapted to fit within said first slot,

a second substantially triangular blade adapted to fit within said second slot, said first and second blades having portions extending rearwardly of the cutting edges thereof, said second blade comprising a unitary structure including a body portion adapted to ride within said second slot and two side edge portions each extending along the surface of said collet from a point forwardly of said second slot and angling radially outward and rearwardly therefrom, and

means for retaining said blades in position within said collet including means encompassing said rearwardly extending portions and removably engageable upon the rear end of said collet for retaining said blades in place, said collet includes a plurality of windsplints each terminating at the most forward point of the side edge portion of said second blade.

3. A readily disassemblable hunting arrowhead comprising:

a. an elongated collet having a first axial slot communicating with the front end thereof and a second axial slot substantially orthogonal to the first slot and communicating with the rear end thereof;

b. a first substantially triangular blade comprising the tip of the arrowhead and having a rear undercut portion adapted to fit within the first slot;

c. a second substantially triangular blade adapted to fit within the second slot, the first and second blades having portions extending rearwardly of the cutting edges outward of the collet and inclined radially inwardly and toward the rear end thereof; and,

d. a ferrule removably engageably mounted on the rear end of the collet, the ferrule having its forward inner surface beveled substantially parallel to the inclined portions of the blades so as to engage the inclined portions and wedge them inwardly upon being engaged upon the collet.

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