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ARROWHEAD CONSTRUCTION

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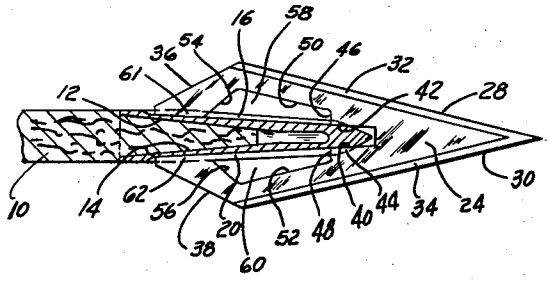

FIG. 1

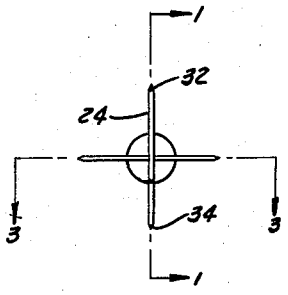

FIG. 2

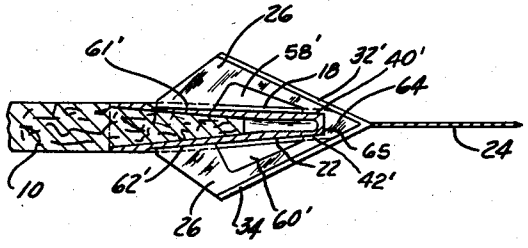

FIG. 3

INVENTOR.
WILLIAM DOONAN
BY
SMITH, WILSON, LEWIS & McRAE

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ARROWHEAD CONSTRUCTION

William Doonan, Ypsilanti, Mich.

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8 Claims. (Cl. 273—106.5)

This invention relates to an arrowhead construction which employs cutter blades for game-killing purposes. The blades are provided with air passages for causing the arrow to spiral in flight in a manner to maintain the arrow on a true course without tendency of the arrow to have a "planning" action on the air such as would deflect it from its initially directed path.

Objects of the invention are to provide a bladed arrowhead construction wherein:

(1) the blades are economically formed and assembled onto the arrowhead, and

(2) the primary game-killing blade is removable from the arrowhead for replacement purposes.

Other objects of this invention will appear in the following description and appended claims, reference being had to the accompanying drawings forming a part of this specification wherein like reference characters designate corresponding parts in the several views.

In the drawings:

Fig. 1 is a longitudinal sectional view of one embodiment of the invention taken on line 1—1 in Fig. 2.

Fig. 2 is a right end view of the construction shown in Fig. 1.

Fig. 3 is a longitudinal sectional view taken on line 3—3 in Fig. 2.

Before explaining the present invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawings, since the invention is capable of other embodiments and of being practiced or carried out in various ways. Also, it is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation.

In the drawings there is shown an arrowhead including a wooden shaft 10 having its forward end fixedly received within the hollow portion 12 of an aluminum ferrule or head portion 14. Head portion 14 may be economically formed by an extrusion operation.

Four equally spaced grooves or slots 16, 18, 20 and 22 are cut into the side surfaces of head portion 14 for mounting two flat V-shaped steel cutter blades 24 and 26.

Blade 24 is provided with two forwardly converging edges 28 and 30 sharpened in areas 32 and 34 to form game-killing cutter edges. Extending from the rear limits of edges 28 and 30 are two rearwardly converging edges 36 and 38. The central portion of the blade is cut away to form a slot 40. The interior blade edge portions 42 and 44 formed by said slot function as fingers for slidably positioning the blade on member 14.

The cut away portion of blade 24 also defines two interior edges 46 and 48 extending laterally from finger portions 42 and 44, and then parallel to edges 28 and 30 along lines 50 and 52. The interior edges then converge toward one another as at 54 and 56 to form air spaces 58 and 60. These air spaces cooperate with similar air spaces in blade 26 to cause a spiralling of the arrow in flight in a manner to maintain the arrow on a true course.

The rear portion of blade 24 is slotted to form two spaced fingers 61 and 62. These fingers cooperate with fingers 42 and 44 to releasably mount blade 24 on head portion 14. In assembling the blade in place the blade is merely slid longitudinally in a rearward direction until the four fingers are firmly seated against the bottom walls of slots 16 and 20. The blade arm portions formed by air passages 58 and 60 can flex slightly so as to provide a rather firm engagement between fingers 61, 62 and the bottom surfaces of slots 16 and 20.

Blade 26 is of generally the same construction as blade 24 except that it terminates at the forward end of body portion 14 (rather than forwardly thereof as in the case of blade 24). In order to correctly mount blade 26 there is provided in body portion 14 a slot 64, which interconnects slots 18 and 22. Slot 64 forms a shoulder 65, which limits movement of the blade onto the arrowhead.

Blade 26 is provided with front fingers 40' and 42', air openings 58' and 60', and rear fingers 61' and 62'. Assembly of blade 26 onto the head portion 14 is effected by sliding the blade rearwardly so as to cause the blade fingers to grip against the bottoms of slots 18 and 22. It will be understood that assembly of blade 26 onto member 14 is effected prior to assembly of blade 24.

In operation of the arrow, blade 24 acts as the primary game-killing blade. In the event that the arrow should inadvertently be shot into the trunk of a tree blade 24 will usually become embedded in the tree without any corresponding embodiment of blade 26. This condition is due to the fact that blade 24 extends a considerable distance beyond the front end of member 14, whereas blade 26 terminates at the front end of member 14.

The manner of removably mounting blade 24 (through the use of its four fingers engaged in slots 16 and 20) enables the archer to pull the arrow away from the tree with blade 24 remaining embedded in the tree trunk. When the arrow is pulled away from the tree it carries with it the blade 26. Therefore the only damage to the arrow is the loss of blade 24. Blade 24 is economically formed by a stamping operation, and it can be replaced with considerably less expense than would be involved in replacing an entire arrow assembly.

The detachable mounting of blade 24 (as well as blade 26) is also advantageous in the case where the blade becomes bent in service. An arrow with a bent blade will not fly true, and conventional arrows must be discarded if their blades become unduly bent in service. With the present invention replacement of a bent blade is easily effected at low cost.

I claim:

1. An arrowhead comprising an elongated hollow head having a first pair of diametrically spaced longitudinally extending grooves terminating in a slot at the forward end of the head, an inner blade comprising an uninterrupted forward section positioned in said slot and having V-shaped cutter blade portions diverging outwardly along the head and having converging portions received within said first pair of grooves, a second pair of diametrically spaced longitudinally extending grooves in the head spaced circumferentially from the first pair of grooves, and an outer blade clampingly engaged at longitudinally spaced points within said second pair of diametrically spaced grooves and having V-shaped cutter blade portions, the arrowhead being so constructed and arranged that the inner blade may be slidably mounted on the head with its uninterrupted forward section projecting into the slot at the forward end of the head prior

to assembly of the outer blade on the head, and the outer blade when assembled on the head provides an obstruction against removal of the inner blade.

2. The invention defined in claim 1 wherein the elongated hollow head is tapered.

3. The invention defined in claim 1 wherein the outer blade is clampingly engaged at different diameters to the elongated head.

4. The invention defined in claim 1 wherein the first and second pairs of grooves are uninterrupted axially.

5. An arrowhead construction comprising an elongated hollow head provided with first and second pairs of diametrically spaced longitudinal grooves extending only part way through the side surfaces of the head, the forward end of the head being formed with a slot in alignment with the first pair of diametrically spaced grooves, a relatively small V-shaped secondary blade having its rear central portion cut away to define opposed gripper sections extending into said first pair of grooves and having its apex portion positioned at least partially within the transverse slot, and a relatively large V-shaped primary blade having its central portion cut away to define opposed gripper sections seated at longitudinally spaced points in the second pair of grooves, with the forward end portion of the primary blade located in front of the apex portion of the secondary blade to provide an obstruction against removal of the secondary blade.

6. An arrowhead construction comprising an elongated hollow head provided with first and second pairs of diametrically spaced longitudinal grooves extending into the side surfaces of the head, the forward end of the head being formed with a slot in alignment with the first pair of diametrically spaced grooves, a relatively small longitudinally extending secondary blade having its rear central portion cut away to define opposed blade sections extending into said first pair of grooves and having its apex portion positioned at least partially within the slot, and a relatively large longitudinally extending primary blade having its central portion cut away to define opposed blade sections seated in the second pair of grooves, with the forward end portion of the primary blade located in front of the apex portion of the secondary blade to provide an obstruction against removal of the secondary blade.

7. An arrowhead construction comprising an elongated hollow head provided with a pair of diametrically spaced longitudinal grooves extending only part way through the side surfaces of the head, the extreme forward end of the head being formed with a forwardly opening axially extending slot transverse to the diametrically spaced grooves, a relatively small V-shaped secondary blade having its rear central portion cut away to define opposed blade sections extending along opposite side surfaces of the head and having its apex portion positioned at least partially within the transverse slot, and a relatively large V-shaped primary blade having its central portion cut away to define opposed blade sections seated in the grooves, with the forward end portion of the primary blade located in front of the apex portion of the secondary blade to provide an obstruction against removal of the secondary blade.

8. An arrowhead construction comprising an elongated hollow head provided with a frontal end and a pair of diametrically spaced longitudinal grooves extending into its side surfaces from its frontal end rearwardly for the major portion of its length, the frontal end of the head being formed with a forwardly opening axially extending slot transverse to the diametrically spaced grooves, a relatively small V-shaped secondary blade having its rear central portion cut away to define opposed blade sections extending along opposite side surfaces of the head and having its apex portion positioned at least partially within the transverse slot, and a relatively large V-shaped primary blade having its central portion cut away to define opposed blade sections seated in the grooves, with the forward end portion of the primary blade located in front of the apex portion of the secondary blade to provide an obstruction against removal of the secondary blade through the slot.

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