DUAL PURPOSE ARROW HEAD

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Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

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This invention relates to an improvement in dual purpose arrow head and deals particularly with an arrow which can be used either as a hunting arrow or as a practice arrow.

During recent years the art of hunting game with a bow and arrow has become more and more popular. Certain states have even acted to encourage hunting of this type by providing a lengthened open season for the hunting of deer and other such game with a bow and arrow. Hunting of this type naturally takes considerable skill and practice. Persons who are adept at hunting in this manner usually spend many hours in practice shooting to develop the necessary skill and speed.

One of the obstacles which has been encountered lies in the fact that under normal circumstances a different type of arrow is used for hunting than is normally used for practice. Hunting arrows are usually equipped with pointed blades having diverging sharpened edges so as to penetrate into the game to the desired extent. However, blades of this type are not normally used for practice shooting in view of the destruction which they cause to targets. If the practice shooting takes place in wooded areas, there is also a considerable danger of injuring the arrowhead or dulling the blades by engagement with trees and underbrush. However, the use of other arrows as practice arrows sometimes creates difficulty because the weights of the arrows may vary, and the flight characteristics of the arrow may also vary. Accordingly, it is the object of the present invention to provide a dual purpose arrow which may be used either as a hunting arrow or for practice.

An object of the present invention resides in the provision of an arrowhead including a pair of blades which are pivotally connected together and which are capable of swinging from an extended form in which the edges of the blade extend rearwardly and outwardly from the arrow point along diverging lines to a collapsed position in which the blades are substantially completely overlapping, and so that the sharp edges of the blades do not extend beyond the periphery of the arrowhead. When in one position, the arrow may be used for hunting purposes, and will act similarly to almost any hunting arrow. When in collapsed position, the blades are virtually confined within the body of the arrowhead, and therefore will not cause damage to targets, and will not be damaged thereby.

A further feature of the present invention resides in the provision of an arrowhead which is diametrically slotted in order to accommodate the blades therebetween. The blades are pivotally connected near their forward ends to the arrowhead. A sleeve or ferrule is slantly supported upon the head of the arrow and includes diametrically extending slots which register with the first named slot and through which the blades may project. The sleeve also includes a diametrically extending pin which extends through a slot in the head of the arrow at right angles to the first named slot. This pin extends through cam slots in the blades. By sliding the sleeve or ferrule in one direction, the pin acts to move the blades into projected position. When the sleeve is moved in the opposite direction, the blades are pivoted into retracted position. Means is provided for retaining the sleeve in either extreme position.

These and other objects and novel features of the present invention will be more clearly and fully set forth in the following specification and claims.

In the drawings forming a part of the specification:

FIGURE 1 is a side elevational view of an arrowhead showing the general arrangement of parts therein.

FIGURE 2 is a plan view of the arrowhead shown in FIGURE 1.

FIGURE 3 is a longitudinal sectional view through the arrowhead, the position of the section being indicated by the line 3-3 of FIGURE 2.

FIGURE 4 is a side elevational view of the arrowhead with the blades in collapsed position.

FIGURE 5 is a sectional view of the arrowhead in collapsed position, the position of the section being indicated by the line 5-5 of FIGURE 4.

FIGURE 6 is an elevational view of the two blades removed from the remainder of the arrowhead.

The arrow is indicated in general by the letter A. For the purpose of illustration, the shaft 10 of the arrow is shown as being a solid rod which might be of wood or other suitable material. However, if the arrow is to be made of metal, such as aluminum, the shaft 10 may be of hollow tubular form. Also shown in FIGURE 2 is an illustration of the arrowhead shown as including a forward end portion 11 which may be integral with the main portion of the shaft 10, or which may be detachably connected thereto.

As indicated in the drawings, the end portion 11 of the arrow A is provided with a diametrically extending slot 12 which extends into the arrow shaft end 11 from the forward extremity thereof. The forward extremity 13 of the shaft portion 11 is preferably tapered or beveled as indicated at 13. A pair of blades 14 and 15 are pivotally secured in the slot 12 by a pivot 16. The pivot 16 extends through the forward extremity 13 of the arrow shaft and through registering apertures 17 and 19 near the forward portions of the blades 14 and 15 respectively.

The blades 14 and 15 are generally similar, one blade being reverse of the other. The blades may be provided with one flat side, and the outer edge of the other side of each blade may be marginally sharpened as indicated at 20 and 21 respectively. The forward end of each blade is cut off diagonally as indicated at 22 and 23 respectively and these edges are marginally sharpened as indicated at 24 and 28 respectively. The blades are elongated and the sharpened edges may curve slightly but the blades are no wider than the portion of the arrowhead in which they are supported, as will be later described.

The blades 14 and 15 are provided with cam slots 25 and 26 which are angularly related relative to the longitudinal axis of the blades. These cam slots 25 and 26 provide a means of pivoting the blades in unison, as will be later described.

A sleeve 27 which is preferably provided with tapered ends 29 and 30 is slidably supported upon the end 11 of the arrow shaft near the forward end 13 thereof. The arrowhead body 11 is provided near its forward extremity with a slot 31 which intersects the previously described slot 12 at right angles. A pin 32 extends diametrically through the sleeve 27 and extends through the slots 31. As is indicated in FIGURE 3 of the drawings, the pin 22 also extends through the cam slots 25 and 26 of the blades 14 and 15. When the sleeve 27 is moved forwardly toward the forward end 13 of the arrowhead, the pin 32 extends through the forward ends of the slots 25 and 26 and the blades 14 and 15 are swung outwardly so that the sharpened cutting edges thereon are in outward and rearwardly diverging relation. In this position, the pointed ends of the two blades are in congruous relation as may also be seen in FIGURES 1 and 3 of the drawings. By sliding the sleeve 27 rearwardly away from the forward end of the arrow, into the position shown in
3,138,333 3 FIGURE 4 of the drawings, the pin 32 moves rearwardly in the slots 25 and 26, and pivots the two blades 14 and 15 in unison until they are retracted into the slot 12 and the registering slots 33 and 34 in the sleeve 27. When in the position shown in FIGURE 4, the cutting edges of the blades are substantially retracted within the confines of the sleeve 27 so that the blades are ineffective. When in this position, the arrow may be used as a practice arrow and the likelihood of injuring the blade is greatly reduced. At the same time, the weight of the arrowhead remains unchanged and the flight characteristics of the arrow remain substantially unchanged. As a result, the same arrow may be used either for practice or as a hunting arrow, and there is no danger of shooting errors due to the fact that practice arrows are of one weight and the actual hunting arrows are of another.

When the blades are in the concealed position illustrated in FIGURE 4 of the drawings, the pointed ends of the two blades which are indicated in FIGURE 4 swing slightly out of registry due to the fact that the pivot cannot well be at the extreme forward end of the blade. However, these pointed ends project but slightly beyond the forward extremity 13 of the arrowhead body and are protected thereby.

In the preferred form of construction, the arrowhead body 11 is provided with a pair of parallel apertures 39 and 40 extending therethrough. The aperture 39 is exposed as the sleeve 21 is moved into its forward position illustrated in FIGURE 3 of the drawings, and a small locking pin 41 may be inserted through the aperture 39 to hold the sleeve 27 in its adjusted position.

When the sleeve is moved rearwardly to the position shown in FIGURES 4 and 5 of the drawings, the forward aperture 40 is exposed through the rear ends of the slots 33 and 34, and the locking pin 41 may be engaged in the aperture 40 to hold the sleeve in its rearward position. The pin 41 may frictionally engage in place, or may be held in place by any suitable means, and projects from the arrowhead body to the extent necessary to lie in the path of movement of the sleeve. The blades are of sufficient thickness and strength to withstand the strain to which they are subjected.

In accordance with the patent statutes, I have described the principles of construction and operation of my improvement in dual purpose arrow heads, and while I have endeavored to set forth the best embodiment thereof, I desire to have it understood that changes may be made within the scope of the following claims without departing from the spirit of my invention.

I claim:

1. A dual purpose arrow head including a body portion having a diametrically extending slot therein, a pair of blades of a width substantially no greater than the diameter of the body portion, and a pivot extending through the forward portions of said blades and through the forward end of said body portion, said pivot supporting said blades for pivotal movement from side by side relation in said slot and substantially within the diameter thereof to outwardsly and rearwardly diverging relation, and manually operable means engageable with said blades for pivoting the same in unison, and means for holding said last named means in either extreme position.

2. The structure of claim 1 and in which said blades extending beyond the forward end of said body.

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