United States Patent

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[54] **ARROWHEAD WITH ROTATABLE CUTTING BLADE**
2 Claims, 6 Drawing Figs.

[52] U.S. Cl. 273/106.5B, 30/319, 30/347
[51] Int. Cl. F41b 5/02
[50] Field of Search ..... 273/106.5, 106.5 B; 30/319, 347, 307

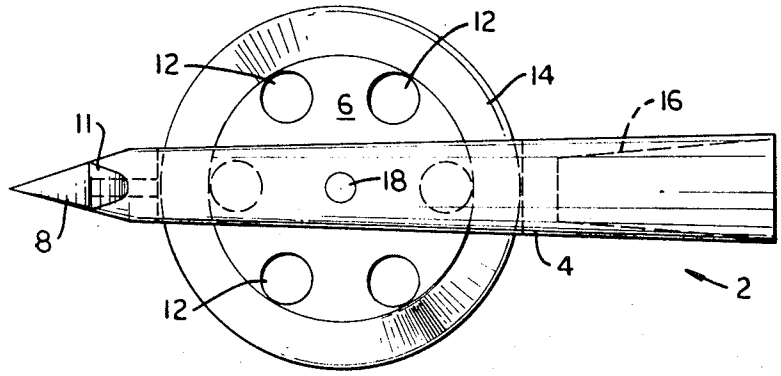
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ABSTRACT: A hunting arrowhead formed from a ferrule body section and having a circular cutting member which is rotatably mounted therein. The circular cutting member is positioned in an elongated slot formed in the ferrule body section. The elongated slot can be centrally located in said body section or it can be disposed forwardly thereof so that the member projects beyond the end of the body section. When the slot and hence the cutting member are centrally located in said body section, a multisided point is positioned at the forward end of said body section.



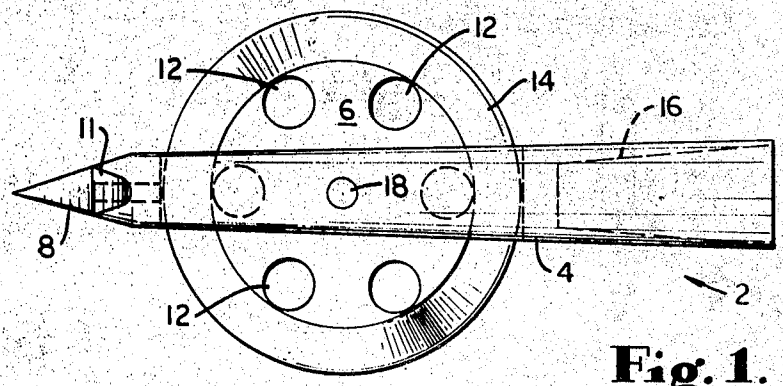


Fig. 1.

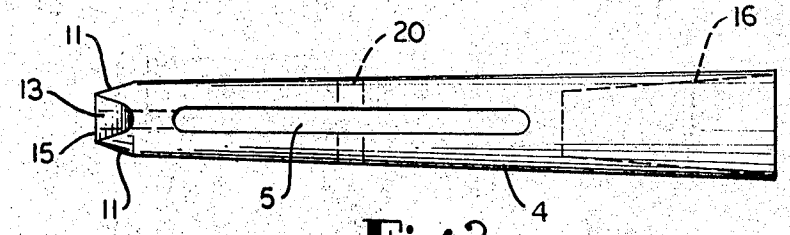


Fig. 2.

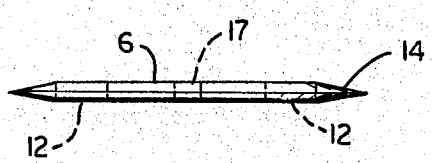


Fig. 3.

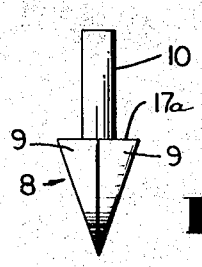


Fig. 4.

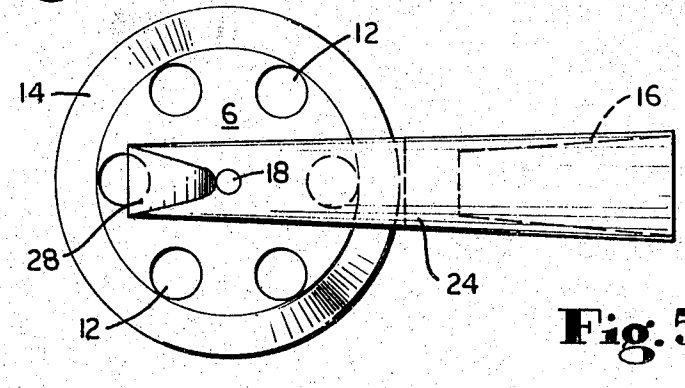


Fig. 5.

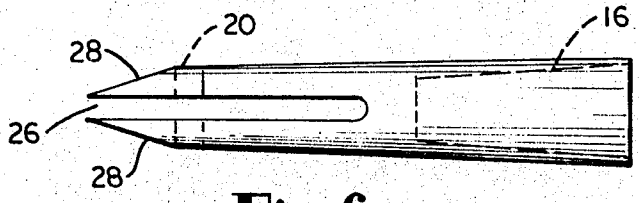


Fig. 6.

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ARROWHEAD WITH ROTATABLE CUTTING BLADE

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention is concerned with an arrowhead which is particularly suited for hunting use. More specifically the arrowhead of this invention is of the broadhead type and has a rotatable member that is characterized by a circular or peripheral cutting edge. It likewise can incorporate a multisided and multiedged point.

2. Description of the Prior Art

Archery has experienced unparalleled growth and popularity in recent years. With this growth there likewise has developed a tremendous interest in archery hunting. In fact the sport has become so popular that most states have special archery hunting seasons.

The prior art includes a multitude of arrowheads which are suitable for hunting use. In the arrowheads of these patents the cutting edges are secured in rigid relationship with the arrow shaft. This is generally true of the prior art. Because of this rigid relationship the arrowhead is not capable of rolling over obstacles which enter its path during penetration. For example, it is not capable of rolling over bones which may be struck in a game animal, and therefore it does not "strike home." Because of this problem with the prior art arrowheads, game animals are often only wounded and succeed in escaping from the hunter. This may result in the animal dying a lingering death or being too easy prey for the next hunter, both conditions being unfortunate.

Likewise, the prior art structures are disadvantageous in that they tend to wind plane in flight in such fashion that the trajectory of the arrow is affected. Also some prior art structures whistle in flight to such a degree that the game may be spooked.

From the above problems, it can be seen that there is a need for a superior broadhead-type hunting arrowhead. These problems of the prior art are solved by the arrowhead of this invention which incorporates a circular, rotating member having a cutting edge. This construction permits the arrowhead to rotate over obstacles in its path and thereby results in deeper penetration and cleaner kills.

SUMMARY OF THE INVENTION

This invention relates to a broadhead-type arrowhead having a ferrule body section with an elongated slot therein. A member having a circular or peripheral cutting edge is rotatably mounted in said slot. This construction permits the arrowhead to rotate over obstacles in its path. The arrowhead is quiet in flight and it does not cause the arrow to wind plane.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side elevation view of the preferred embodiment.

FIG. 2 is a top plan view of a portion thereof.

FIG. 3 is a top plan view of the rotating cutting member shown in FIG. 1.

FIG. 4 is a side elevation view of the point or tip shown in FIG. 1.

FIG. 5 is a side elevation view of a modified form of my invention.

FIG. 6 is a top plan view of a portion of the modified form.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIGS. 1 and 2, it can be seen that the arrowhead shown generally at 2 includes a ferrule body section 4, a circular cutting member 6 and a point 8. The body section incorporates a slight taper and has an elongated slot 5 formed therein. This slot is sized to receive for free rotation therewithin the circular cutting member. In the embodiment as illustrated in these figures, the slot is positioned centrally in the body section so that both of its ends are closed off by the body section. In still another embodiment, the slot is positioned forwardly in the body section and is open ended so that a portion of the rotatable member projects beyond the body section.

As is illustrated in FIGS. 1 and 3, the cutting member 6 has a sharpened periphery 14 which is preferably honed to razor sharpness. The member has a central aperture 17 which is aligned with aperture 20 of the body section. A pin 18 extends through said apertures, rotatably connecting the member to the body section. The fit of the rotatable member in the slot of the body section is such that the member is free to rotate. Preferably the member is formed from tool steel.

A plurality of apertures 12 are provided in the circular cutting edge. The number of these apertures and their size are such that the weight of the member can be properly adjusted to bring the overall weight of the arrowhead to the proper level.

The rear portion of the body section incorporates a socket 16 which tapers inwardly toward the front portion of the body section. The degree of taper of this socket can be any convenient figure. However, it is preferred that it be the standard 5°. It is to be understood, of course, that an arrow shaft is to be received within the socket.

The forward end of the body section is tipped with a point or tip 8 having a shank portion 10. This shank portion is adapted to be received in opening 13 which is formed in the forward portion of the body section. The tip can be secured in opening 13 by any convenient means. However, it is preferred that it be by means of an adhesive. When the tip is secured in position, shoulder 17*a* thereof abuts shoulder 15 of the body section.

The forward section of tip 8 can incorporate any convenient pointed structure. However, in accordance with the preferred aspects of this invention this tip has several edges dividing the plurality of sides or faces 9. This type of construction is desirable since the edges aid in the penetration of the arrowhead. The plane of sides 9 of the tip match up with sides 11 as formed in the opening in the forward end of the main body section. Tip 8 is solid in its construction and as such shows extreme resistance to bending. It is preferred that it be formed from a hard material such as tool steel or tungsten carbide.

FIGS. 5 and 6 illustrate another embodiment of this invention which is suited for small game use. In this structure, ferrule body section 24 has a slot 26 positioned in its forward portion such that one end of the slot is open. Mounted in this slot and journaled through aperture 20 of the body section is a cutting member 6 which is identical to that described above. It is adapted to rotate in slot 26 with a portion thereof projecting forwardly of the body section.

The forward end of body section 24 includes tapered sides 28 which terminate at slot 26. (See FIG. 6). These tapered sides generally form a sharpened frontal area which aids in the penetration of the arrowhead.

As has been mentioned, a portion of the circular cutting member projects forwardly of the leading edge of body section 24. Thus, in this modification the leading surface of the arrowhead is rotatable. This is desirable when shooting at small game such as squirrels, for the reason that when a tree limb or other obstacle is struck, the arrow will be deflected instead of becoming lodged in the obstacle. This prevents the arrow from becoming stuck and hence lost in tree limbs.

Both of the above described arrowheads have the advantage of being quiet in flight. In contrast, due to their construction, some prior art arrowheads tend to whistle in flight in such a fashion that game can be spooked. Likewise, some prior art arrowheads tend to act as wings on the front of the arrow resulting in wind planing such that the trajectory of the arrow is affected. This is very undesirable in that it can cause an archer to miss. The arrowheads of this invention do not tend to wind plane and hence the trajectory of the arrow is not influenced.

I claim:

1. An arrowhead comprising:

a ferrule body having a slight taper with an elongated slot formed therein, said body having a hollow proximal end engageable with an arrow shaft and a hollow distal end;

a sharp-edged disc rotatably mounted to said body and being positioned within said slot, said disc extending outwardly from said body being positioned between said distal end and said proximal end; and,

a multiedged tapered head having a mounting rod positioned in said hollow distal end, said head being secured to said body.

2. The arrowhead of claim 1 wherein:

said body is tubular and tapers inwardly from said proximal end to said distal end;

said head has a shoulder abutting said distal end;

said head is shaped to provide a smooth contour with said body; and further comprising:

a pin secured to said body rotatably connecting said disc to said body.

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