

Sept. 18, 1951

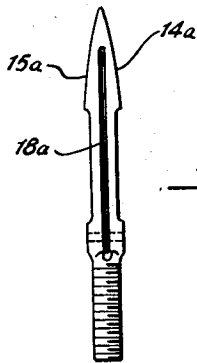
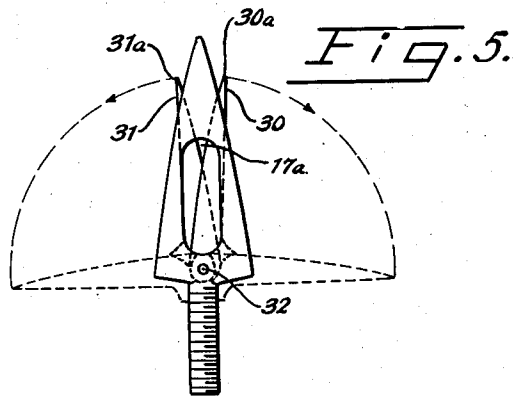
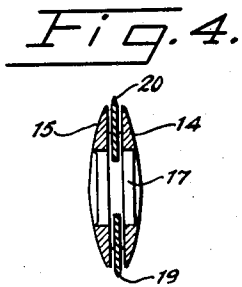
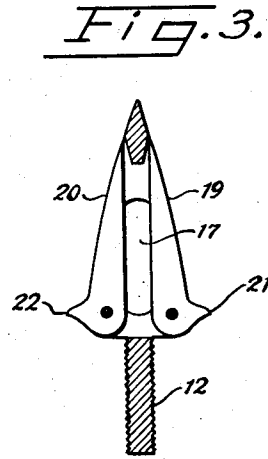
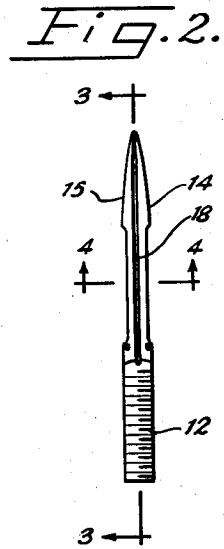
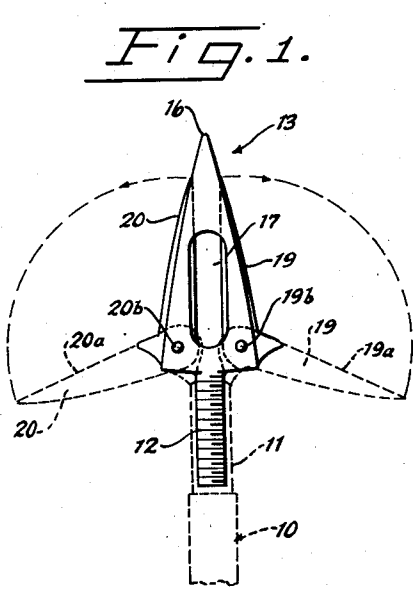
B. H. STEINBACHER

2,568,417

ARROWHEAD ASSEMBLY

Filed Oct. 19, 1948

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 7.

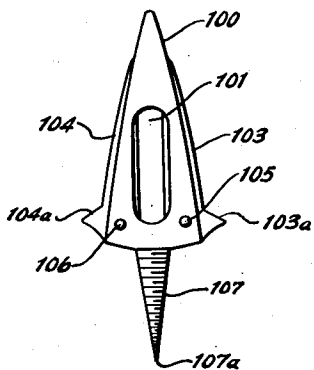


Fig. 8.

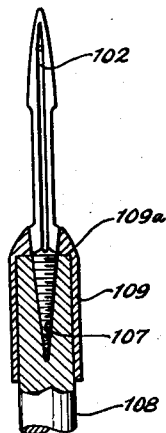


Fig. 9.

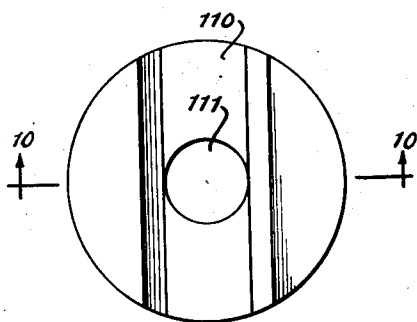
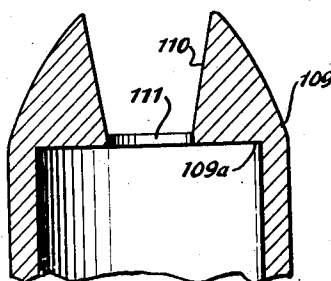


Fig. 10.



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UNITED STATES PATENT OFFICE

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ARROWHEAD ASSEMBLY

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7 Claims. (Cl. 273—106.5)

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The present invention relates to an arrowhead, and more particularly to an arrowhead adapted to be removably secured to a shaft.

In the art of archery, three of the main objectives are to obtain distance of flight, flat trajectory, and striking force. The accomplishment of these objectives depends in a great degree on the design of the projectile or the arrow being employed. However, often in achieving one of these objectives, efficiency or effectiveness in one or both of the others is sacrificed. For example, when employing an arrow as the projectile, increasing the size of the arrowhead, with the addition of weight to thereby increase the striking force, results in a corresponding loss in the distance of flight, reduction of velocity, and consequently a much shorter flight having a flat trajectory. Similarly, by reducing the size of the arrowhead to increase the distance of flight and the distance of the flat trajectory, the striking power is correspondingly reduced because of the decrease in size and weight of the arrow.

Therefore, it is desirable, so far as greater effectiveness in the use of the bow and arrow is concerned, particularly in hunting, to have an arrow the flight of which is increased in distance, has a flat trajectory, and has sufficient striking force to inflict an effective blow.

Much of the effectiveness of the arrow is dependent upon the design of the arrowhead, and the present invention concerns itself primarily with the provision of an arrowhead having the proper weight, construction and size to accomplish the maximum distance of flight, a greater flat trajectory distance, and a maximum striking force.

The primary object of the present invention is to provide an arrowhead so constructed and designed that its passage through an animal is impeded by means of mechanism which automatically operates as the arrowhead enters the prey.

Another object is to provide a simple, inexpensive arrowhead which is easily secured to or removed from an arrow shaft.

Still another object is to provide an arrowhead comprising, a body portion provided with a slot therethrough, and means including a blade pivotally secured to said body and adapted to removably seat in said slot.

In another of its aspects, the present invention relates to a projectile including a shaft, with a cap adapted to removably fit over an end portion of the shaft, with said shaft having an aperture in the head thereof adapted to receive there-through a screw positioned on an arrowhead por-

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tion, so that the arrowhead and cap can be secured to the shaft by screwing the arrowhead into the end of the shaft.

Other and further objects and advantages of the present invention will be apparent from the following description thereof and from the claims appended thereto.

In the drawing, wherein like numerals refer to like or corresponding parts throughout the several views;

Figure 1 is a front elevation of the arrowhead attached to the arrow shaft, and embodies the features of the present invention;

Figure 2 is a side elevation of the arrowhead shown in Figure 1, detached from the arrow shaft;

Figure 3 is a sectional view taken along the line 3—3 of Figure 2 in the direction of the arrows;

Figure 4 is a sectional view taken along the line 4—4 of Figure 2, in the direction of the arrows;

Figure 5 is a front view of a modified form of an arrowhead;

Figure 6 is a side elevation of the arrowhead shown in Figure 5;

Figure 7 is a front elevation of a modified form of the invention;

Figure 8 is a side elevation of the modified form of the arrowhead shown in Figure 7, when attached to an arrow shaft;

Figure 9 is an enlarged top plan view of the cap which removably fits over the end of the arrow shaft; and

Figure 10 is a sectional view taken along the line 10—10 of Figure 9, in the direction of the arrows.

Referring now to the drawing, the numeral 10 represents the arrow shaft, provided with a threaded ferrule 11 on the tip end portion thereof, which ferrule 11 is adapted to threadedly receive a threaded shaft 12 of the arrowhead, which embodies the features of the present invention. The arrowhead is generally indicated by the numeral 13 and includes two arrow-shaped segments or faces 14 and 15 which merge at a forward point 16. The faces 14 and 15 are preferably integral with the threaded shaft 12, and as shown in Figure 1, are provided with an aperture 17 extending therethrough, to decrease the weight of the arrowhead while still maintaining a desirable size.

Extending between the segments 14 and 15 is a slot 18, which is transversely disposed with reference to slot 17. At the base of the arrow, near the threaded shaft 12, there is pivotally secured to faces 14 and 15, blades 19 and 20. Blades 19 and 20 are preferably provided with knife edges 19a and 20a, and as pointed out, are pivot-

ally secured to the faces 14 and 15, by means of pivot pins 19b and 20b which pass through suitable apertures in said faces 14 and 15.

Blade 19 is exteriorly provided, at the lower end thereof, near the pivot pin 19b, with an outwardly extending flange portion 21, while blade 20 is provided with a similar flange 22, said flanges 21 and 22 being adapted to trip or open the blades as the arrow enters game or the like.

The blades 19 and 20 are adapted to seat in recess 18 between faces 14 and 15, while the arrow is in flight, but as the arrow enters game, say a bear, the flanges 21 and 22 will cause the blades 19 and 20 to move outwardly from the slot 18, and as the points of the blades 19 and 20 catch in the flesh of the bear, the blades will be swung until such time as the flanges 21 and 22 engage opposite sides of one end portion of the threaded shaft 12. The swinging outwardly of the blades 19 and 20 prevents the arrow from passing through the bear.

Referring now to Figures 5 and 6, I have shown a modified form of an arrowhead which is similar in structure to the arrowhead shown in Figure 1, but is different in that it is provided with two overlapping blades 30 and 31, pivotally secured to the base of the arrow at a single point by means of a pivot pin 32. As shown in Figures 5 and 6, blades 30 and 31 normally seat in the recess similar to recess 18 and identified in the modified form as 18a. While the blades 30 and 31 substantially lie within the recess 18a during the normal flight of the arrow, the points of blades 30 and 31 identified as 30a and 31a do extend beyond the faces of the arrowhead identified as 14a and 15a, which are similar in shape to the faces 14 and 15 of the form of the invention shown in Figures 1 through 4. As the arrowhead enters the prey, the points 30a and 31a of the blades 30 and 31 respectively, catch in the flesh of the animal and the blades 30 and 31 are swung outwardly to impede the progress of the arrow through the game.

In the modified form of the arrowhead, as shown in Figures 5 and 6, there is also provided a cutaway portion identified as 17a which extends through the faces 14a and 15a, which cutaway portion is transverse to the slot 18a.

Referring now to Figures 7, 8, 9 and 10 of the drawing, the numeral 100 generally represents an arrowhead similar in construction to the arrowhead shown in Figure 1, and provided with a cutaway portion 101 in the face thereof, and a slot 102 therethrough, with knife blades 103 and 104 adapted to normally seat in slot 102, with said knife blade 103 being pivoted to the arrowhead 100 at pivot pin 105, while knife blade 104 is pivoted to arrowhead 100 at pivot pin 106. Knife blade 103 is provided with a flange 103a approximately at the pivot point 105 and outwardly therefrom. Knife blade 104 is provided with a flange 104a near the pivot point 106 and outwardly therefrom. Secured to the arrowhead 100 is a tapered wood screw 107, which is adapted to be screwed into the end of an arrow shaft 108, as best shown in Figure 8 of the drawing. In securing the arrowhead 100 to the arrow shaft 108, I employ a cap 109 which removably fits over the end portion of the wooden arrow shaft 108, with said cap 109 having a grooved head 110, and also being provided with a central opening 111, having a diameter substantially the same as the upper diameter of the wood screw 107.

In attaching the arrow 100 to the shaft 108, the arrowhead 100 is positioned so that the wood

screw 107 is disposed in the opening 111 in the cap 109. The cap 109 is then placed over the end of wooden shaft 108, and because of the central position of the aperture 111, the end tip 107a of the wood screw 107 is in dead center, and the arrowhead 100 is screwed into the end of the shaft 108, until such time as the inner shoulder 109a of the cap 109 rests against, or substantially abuts the upper end of the shaft 108. It is noted that the end portion of arrowhead 100 fits into the groove 110 when the parts are in assembled relation.

In operation, when it is desired to employ the arrowhead of the present invention, it is secured to the shaft and the blades are seated in the slot in the arrow and it is ready for use. When the arrow enters its objective, the blades of the arrow are tripped outwardly to impede or prevent the passage of the arrow therethrough.

The arrowhead of the present invention is preferably flat and made of a metal, such as steel, or the like. However, the arrowhead may be of any convenient shape without departing from the invention.

Various modifications of the present invention will be apparent to those skilled in the art without departing from the spirit thereof and it is therefore desired to be limited only by the scope of the claims.

What I claim is:

1. An arrowhead comprising, a flat body portion including an upper and lower face merging into a point, said upper and lower faces having an aperture extending therethrough, said body having a slot therethrough transverse to said aperture through said faces, a blade pivotally secured to opposite sides of said body with said blades adapted to removably seat in said slot, an outwardly extending trip flange carried by each of said blades near said pivot points, and a threaded shaft for said body portion.

2. An arrowhead comprising, a flat body portion including an upper and lower face merging into a point, said upper and lower faces having an aperture extending therethrough, said body having a slot therethrough transverse to said aperture through said faces, a blade pivotally secured to opposite sides of said body with said blades adapted to removably seat in said opening in said slot in said body, and an outwardly extending trip flange carried by each of said blades near said pivot points.

3. An arrowhead comprising, a flat body portion including an upper and lower face merging into a point, said upper and lower faces having an aperture extending therethrough, said body having a slot extending therethrough transverse to said aperture through said faces, two blades substantially in overlapping position pivotally secured to said body, said blades adapted to removably seat in said slot in said body by having their tip end portions extending outwardly therefrom when the blades are in seated position, and a threaded shaft for said body portion.

4. An arrowhead comprising, a flat body portion including an upper and lower face merging into a point, said upper and lower faces having an aperture extending therethrough, said body having a slot extending therethrough transverse to said aperture through said faces, and two blades substantially in overlapping position pivotally secured to said body, said blades adapted to removably seat in said slot in said body by having their tip end portions extending outwardly therefrom when the blades are in seated position.

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5. In a projectile including a shaft, a cap adapted to removably fit over an end portion of said shaft, said cap having an aperture in the head thereof, an arrowhead provided with a screw portion adapted to fit through said aperture in the head of said cap and to be screwed into the end of said shaft, said arrowhead being slotted, and blade means pivotally secured to said arrowhead and normally seated in said slot therein.

6. In a projectile including a shaft, a cap adapted to removably fit over an end portion of said shaft, said cap having a groove in the head thereof and being provided with a centrally disposed screw receiving aperture, a substantially flat arrowhead provided with a screw portion adapted to fit through said aperture in the head of said cap and to be screwed into the end of said shaft to secure said cap and arrowhead thereto, said arrowhead being slotted, and blade means pivotally secured to said arrowhead and normally seated in said slot therein.

7. An arrowhead comprising a flat body portion including an upper and lower face merging into a point, said body having a slot there-

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through, and a blade pivotally secured to opposite sides of said body and adapted to removably seat in said slot and having a leading edge disposed rearwardly of said point for engaging the flesh of an animal upon the entering movement of the arrowhead into the animal to effect swinging movement of the blade to a position transverse of the arrowhead and at substantially right angles to the direction of inward travel of the arrowhead to prevent the arrowhead from passing through and outwardly of the animal.

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