

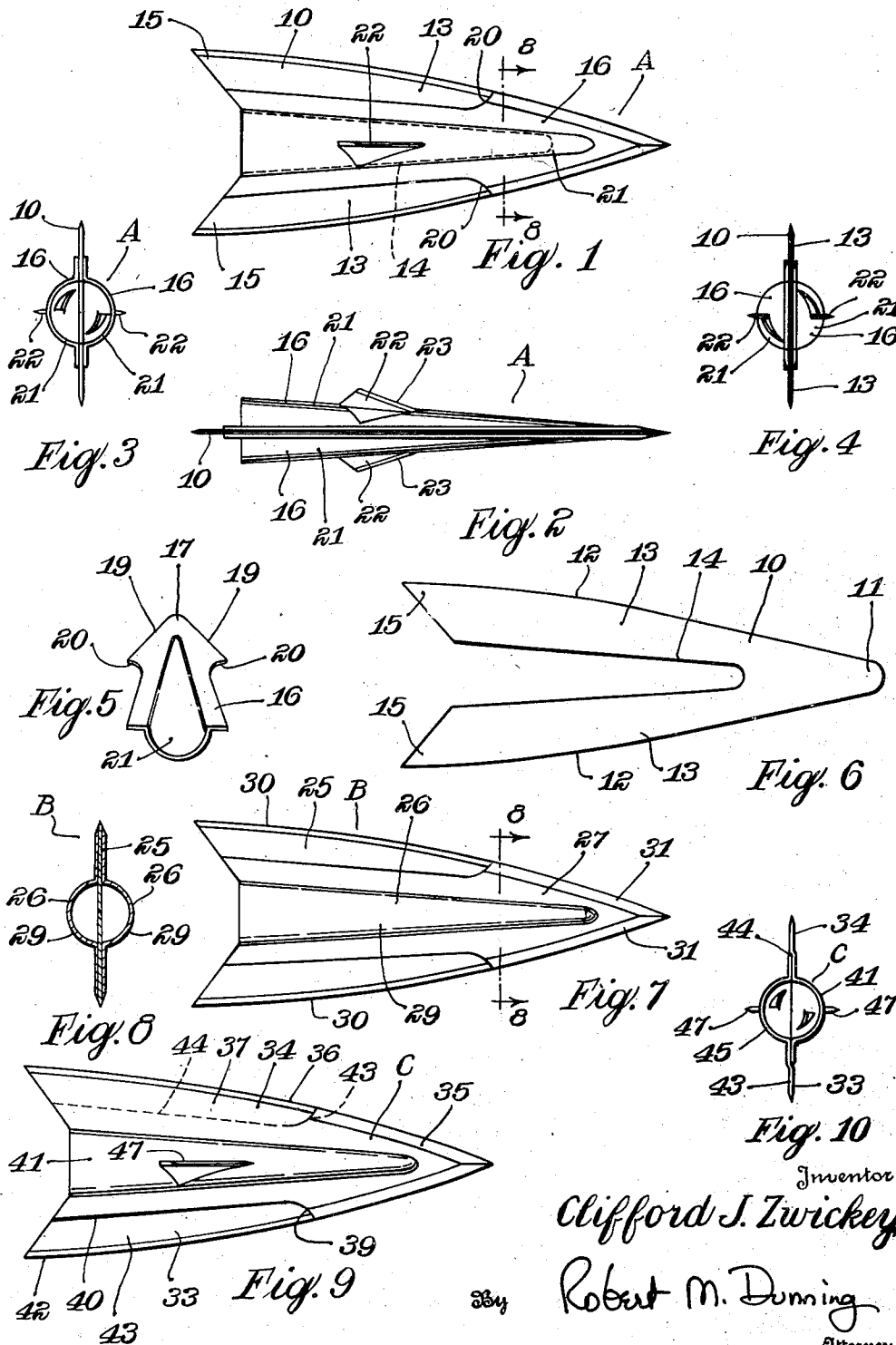
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ARROW HEAD

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ARROWHEAD

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My invention relates to an improvement in arrow heads, and deals more particularly with a type of arrow head to be used in hunting and for similar purposes.

It is an object of the present invention to provide an arrow head having a reinforced tip or point and which is generally sturdy in construction. This tip is strengthened without sacrificing speed or accuracy due to the unusual construction thereof.

It is a feature of the present invention that my arrow head is formed of three general parts. One of these parts comprises a central portion including a pair of opposed blades and a pointed forward end. The other two parts of the arrow head fit on opposite sides of the center part and are welded or otherwise affixed thereto. These opposed parts form a socket for embracing the forward end of the arrow shaft and are provided with a pointed forward end designed to strengthen and reinforce the pointed end of the central section.

A feature of the present invention lies in the fact that the arrow head is completely balanced in the construction thereof. The central portion of the arrow head comprises merely a flat sheet of material while the other two pieces forming the arrow head are identical and may be formed on the same die, if it is so desired. When the three parts are in assembled relation the arrow head is completely balanced and is no heavier on one side than upon the other.

A further feature of the present invention lies in the fact that the central arrow head forming member is slotted longitudinally to permit the forward end of the arrow shaft to engage therein. The two opposed arrow head forming sections are each provided with a tapered recess therein which forms one-half of the socket to engage the forward end of the arrow shaft. If the central element were not notched, it would be necessary to provide a longitudinal split in the forward end of the arrow to receive this arrow shaft.

A further feature of the present invention lies in the manner of reinforcing the arrow tip or point. In the formation of the arrow head the side members are spot welded or otherwise affixed on opposite sides of the central bladed element. The forward ends of the three elements lie flat against one another and are welded or secured together in this position. Accordingly when the blade is sharpened the top portion thereof is of three thicknesses and may be readily sharpened in the manner of a single thickness of material.

An extremely strong, light construction is thus provided.

A further feature of the present invention lies in the fact that sharpened transverse vanes or blades may be formed to project from the arrow head on a plane intersecting the axis of the arrow head, and at right angles to the plane of the bladed central section of the arrow. These transverse vanes or blades are preferably sharpened and act to reduce friction on the arrow shaft when the arrow passes through the material penetrated. These vanes are preferably integral with the opposed side elements forming the arrow head and do not comprise a separate blade projecting through a slot in the head. These transverse blades or vanes also act to cut a cross-shaped slot in the material penetrated, reducing friction on the arrow shaft and causing greater injury to the material penetrated.

A further feature of the present invention resides in the fact that in a modified form my arrow head may be made in two parts, rather than three, with many of the same advantages. The point of the arrow head is reinforced, being of double thickness, while the cutting blades of the head are formed of a single thickness. The construction is such that each of the two parts forming the arrow head are similar. Each part includes one blade and one grooved portion designed to form one-half of the socket for receiving the arrow shaft. Thus this construction is balanced and is slightly less expensive to construct than the preferred form of construction.

These and other objects and novel features of my invention will be more clearly and fully set forth in the following specification and claims. In the drawing forming a part of my specification:

Figure 1 is a side elevational view of an arrow head showing the construction thereof.

Figure 2 is a top plan view of an arrow head showing my new construction.

Figure 3 is an end view of the arrow head shown in Figures 1 and 2 of the drawings.

Figure 4 is an end view showing the end of the arrow head opposite that shown in Figure 1.

Figure 5 is a front perspective view of one of the side elements used in the assembly of the arrow head.

Figure 6 is an elevational view of the central bladed section of the arrow head before assembly thereof.

Figure 7 is a side elevational view of a modified form of arrow head construction.

Figure 8 is a sectional view through the tip

of the arrow, the position of the section being indicated by the line 8—8 of Figures 1 and 7.

Figure 9 is a side elevational view of a modified form of construction of arrow head.

Figure 10 is an end view of the arrow head illustrated in Figure 9.

The arrow head A, best illustrated in Figures 1 through 6 of the drawing, is formed of three main parts secured together. One of these parts 10 comprises a flat blade designed to act as the central member of the arrow head. Before assembly of the arrow head the blade has the general appearance illustrated in Figure 6. It will be noted that the member 10 is provided with a rounded forward end 11 and outwardly diverging edges 12 which form the edges of opposed blades 13. These blades 13 are separated by a tapered slot 14 which is formed in order to permit the forward end of the arrow shaft to engage between the blades 13. The rear edges of the blades 13 may be pointed at 15 to provide barbs, if it is so desired. Obviously the ends of the blades may be cut off square or at forwardly inclined angles if the barbs 15 are not desired.

The opposed side elements are similar in form and are designed to engage on opposite sides of the flat blade 10. The side elements 16 are provided with a rounded point 17 corresponding to the rounded point 11 of the plate 10, and outwardly tapered edges 19 diverged from the pointed end to follow the contour of the edges 12 of the plate 10. As one member 16 is on either side of the plate 10, the forward end of the arrow head is formed of three thicknesses of material.

At a point spaced from the forward end of the members 16, shoulders 20 are formed which cut down the width of the plate considerably. From the shoulders 20 the members 16 taper gradually outwardly. A groove or channel 21 is provided in each member 16, this channel 21 being substantially semi-circular in cross-section and tapering from a relatively narrow depth and width to a depth and width of considerable size at the rear edge of the member. This groove 21 corresponds in taper to the slot 14 in the plate 10.

A triangular barb is formed from each of the grooves or channels 21 and these barbs 22 are bent outwardly to extend on a plane at right angles to a plane through the surface to the plate 10 in assembled form. The forward edges 23 of the barbs are sharpened so as to provide a cutting surface.

The arrow head is assembled so that one of the side members 16 is positioned on either side of the plate 10 in opposed relation. These side members 16 are then spot welded to the central plate 10, thus securing the three elements forming the blade in proper assembled form. The edges of the blade are then sharpened the full length of the arrow head as best illustrated in Figure 1 of the drawing. The edges 19 of the forward end of the side elements 16 are ground away together with the edges 12 of the central plate 10 until a sharp pointed edge is provided. This sharp edge is relatively narrow to the rear of the thickened forward section, but the forward thickened section of the arrow head is of three thicknesses of material. Thus the rear of the arrow head is reinforced by the edges of the socket forming elements without sacrificing lightness in weight. Furthermore, while the point of the arrow is reinforced, and is relatively thick, a thin keen cutting edge is provided

rearwardly from this thickened forward section.

The triangular blades 22 act to slit the material penetrated at right angles to the cut formed by the cutting edges of the central plate 10, thus reducing the friction caused by stretching the material penetrated as the arrow head and shaft penetrate the same. The arrow head and shaft can enter such a cross cut in the material penetrated much more readily than they could enter a single elongated cut.

The arrow head B, illustrated in Figures 7 and 8 of the drawing, is identical to the construction previously described with the exception that the transversely extending blades 22 are omitted in this construction. The arrow head B includes side elements 26 identical in form with the side members 16 of the previously described arrow head A, secured to a central plate 25 identical in shape with the previously described plate 10. The side members 26 include a pointed forward portion 27 and a tapered channel 29 between the lateral edges thereof. The channels 29 are in opposed relation, as best illustrated in Figure 8, when the side members have been secured to the central member 25. The opposed edges 30 of the central plate 25 are sharpened and the edges 31 of the forward portion of the blade are likewise sharpened, as illustrated in Figure 7.

In Figures 9 and 10 of the drawing, I illustrate a modified form of arrow head construction C which is preferably formed of two elements rather than three. In this type of construction the arrow head is formed of two similar members 33 and 34 which are spot welded or otherwise secured together to form a complete balanced arrow head. While the two elements forming the arrow head are identical, different numerals will be given the parts of each so that the parts may be readily described in the drawings. The arrow head portion 34 comprises a substantially flat body including a pointed forward end 35 which on one side extends along a continuously tapered edge 36 to form a blade 37. The opposite side of the tip 35 terminates in a shoulder 39 which leads to a narrower edge 40. A channel 41 is provided between the blade 37 and the narrower edge 40. This channel is tapered in form and is substantially semi-circular in cross-section.

The other arrow head section 33 comprises a substantially flat body having a forward point, not shown in the drawings, but underlying the point 35 of the section 34 and extending contiguous therewith. One side of this point continues along a curved edge 42 to form a cutting blade 43 in opposed relation to the blade 37. The other side of the point terminates in a shoulder 43 which continues along into a narrower edge 44. The channel 45 is positioned between the edge 44 and the blade 43.

Each of the blades 37 and 43 are offset slightly to extend on a single plane through the center of the arrow head. The offset of the blade 37 follows the contour of the narrow edge 44 and the shoulder 43 of the arrow head section 33. Similarly the offset of the blade 43 follows the contour of the narrow edge 40 and the shoulder 39 of the arrow head section 34. Thus the blades 37 and 43 are directly opposed and at the same time the arrow head is entirely balanced in its formation. The channels 41 and 45 provide a socket for the forward end of the arrow shaft.

Each of the members 33 and 34 may be provided with a transversely extending blade cut from the body of the channel and projecting out-

wardly therefrom. These blades 47 are preferably substantially triangular in form and are provided with a sharpened forward edge similar to that illustrated on the blades 22 shown in Figure 2 of the drawing. These transverse blades may be omitted if it is desired, but form an important function in providing a transverse slit when the arrow is used for hunting purposes.

While I have described all of the arrow heads as having pointed forward ends, it should be understood that the forward end can be blunt if it is so desired. In construction of arrows to be used for certain types of game, a blunt forward end is preferable, so that the arrow may be used to provide shock rather than to penetrate. Furthermore, the arrow head may be made of material such as hard plastic, and still have the same shape as well as many of the same advantages.

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

I claim:

1. An arrow head comprising three sheet material elements secured together in surface contact, a pointed forward end formed of all three thicknesses of material, and an axial socket formed by outwardly bulging the two outermost layers of material.

2. An arrow head comprising three sheet material elements secured together in surface contact, a forward end formed of all three thicknesses of material, the rear ends of the center thickness of material extending beyond the edges of two outermost thicknesses to form a central single thickness blade on each side of said head, and an axial socket formed by the outermost thicknesses of material to receive an arrow shaft.

3. An arrow head comprising three laminations

of material secured together, a pointed forward end formed of all three thicknesses of material, continuous diverging edges on the center lamination extending beyond the edges of the outer two laminations to provide single thickness side blades, an axial socket formed by bulging outwardly the two outermost thicknesses, and an axial slot in said center lamination within said socket.

4. An arrow head comprising a pointed central plate having outwardly diverging edges, a pair of similar socket forming plates secured in opposed relation on opposite sides of said central plate, and a blade cut from the body of each socket forming element and extending outwardly at substantially right angles to the plane of said central plate.

5. An arrow head comprising a sheet material body including a pointed forward end and outwardly diverging edges extending from said pointed end, an axial socket rearwardly of said pointed end to receive the forward end of an arrow shaft, and a pair of blades cut from said body and projecting outwardly from said socket at substantially right angles to the plane of said outwardly diverging edges.

6. An arrow head comprising a body of laminations of sheet material, a pointed forward end on said body comprised of a plurality of laminations of material, outwardly diverging edges comprised of a single thickness of sheet material, and an axial socket formed by outwardly bulging two laminations of sheet material.

7. An arrow head comprising a sheet material body including a forward end and oppositely disposed blades extending rearwardly therefrom, an axial socket rearwardly of said pointed end to receive the forward end of an arrow shaft, and a pair of blades cut from said body and projecting outwardly from said body at substantially right angles to the plane of said oppositely disposed blades.

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