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A. J. BROCHU

2,137,014

ARROW

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FIG. 1.

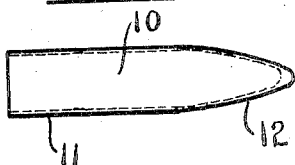


FIG. 2.

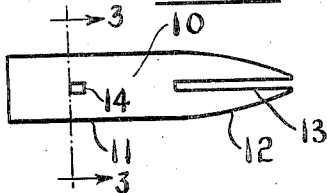


FIG. 3.

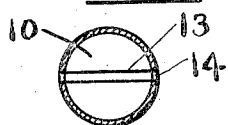


FIG. 4.

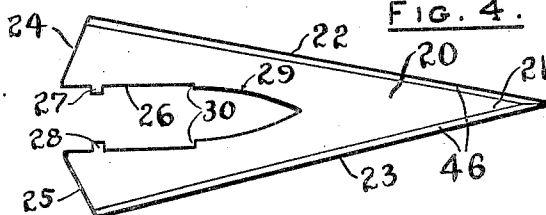


FIG. 5.

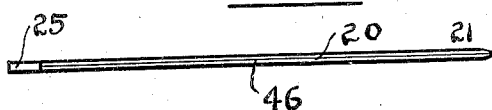


FIG. 7.

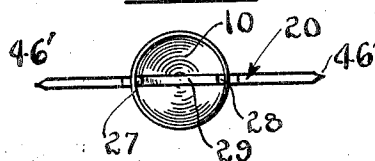


FIG. 9.

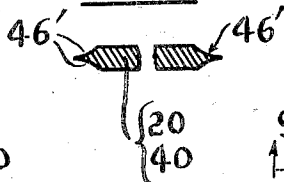


FIG. 8.

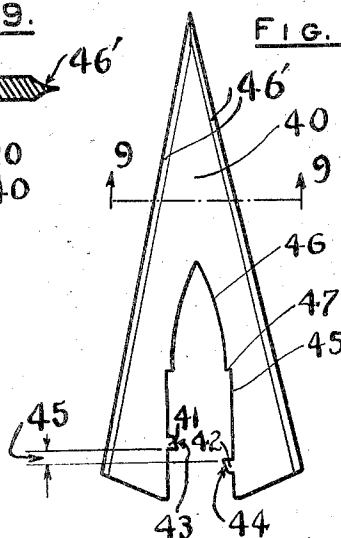
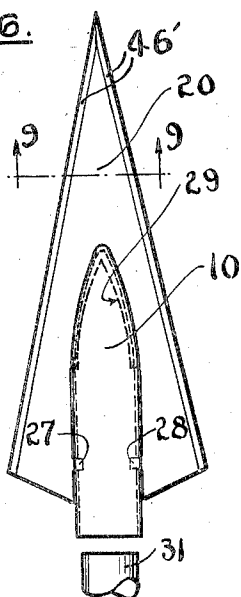


FIG. 6.



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ARROW

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16 Claims. (Cl. 273—106.5)

My invention relates generally to an arrow head construction and more particularly to one for hunting wild game.

Briefly described, my invention comprises an impact or cutting plate and a specially designed slotted tip of bullet shape for receiving the plate, together with means for rigidly locking them together.

One of the primary advantages of my invention lies in the simplicity and efficiency of the completed article, the arrow to which it is attached being perfectly balanced whereby it speeds, without lateral vibration, along its path.

Another advantage lies in the simplicity of the parts, these being easily and quickly manufactured. Furthermore, only two parts are needed and this construction keeps down the cost of production.

Yet another advantage lies in the manner of fastening the two parts together, the fastening operation being quickly and expediently accomplished. Also, the means for holding the two parts together is of such shape and has sufficient area to perform this function properly. In other words the two parts are positioned, with relation to one another, exactly as desired and are rigidly locked in this symmetrical and exact relationship.

Other advantages will be understood by archers and those skilled in this art as the description proceeds.

In the drawing:

Fig. 1 is a side view of the tip or shell, this being fastened upon the forward end of the arrow shaft.

Fig. 2 is a view at right angles to Fig. 1.

Fig. 3 is a sectional view taken along the line 3—3 of Fig. 2.

Fig. 4 is a side view of the impact plate.

Fig. 5 is an edge view of the impact plate.

Fig. 6 shows my completed unit ready to be forced by twisting and translation onto the front end of an arrow shaft.

Fig. 7 is a rear view of the assembled head.

Fig. 8 is a side view of a modified form of impact plate.

Fig. 9 is a detail view of the edge construction of the impact plate, this view being taken along the lines 9—9 of Figs. 6 and 8.

Similar numerals refer to similar parts throughout the several views.

Referring to Figs. 1, 2 and 3, numeral 10 indicates the shell or point which has a cylindrical part 11 and a tapered part 12. The part 12

merges to a complete closure and the other end of the shell is open to receive the arrow shaft.

The tip of the shell is slotted or notched axially at 13, see Fig. 2 particularly, and also has small openings 14 located in the cylindrical portion. The widths of these various slots are substantially equal to the thickness of the impact plate, this plate having extensions which are associated with the several slots as now to be described.

The impact plate 20, preferably formed of a plate of Swedish steel of uniform thickness, has its front end 21 pointed at an angle less than 30 degrees. The sides of the plate, 22 and 23, meet the rear faces 24 and 25, respectively, at angles of approximately 115 degrees. This causes the rear faces to aid rather than to hinder during the withdrawal of the arrow from its victim. The plate 20 is rectangularly cut away at 26, the width being equal to the diameter of the shell's outer face whereby the same is snugly received therein. See Fig. 6.

The plate 20 has oppositely disposed lugs 27 and 28, these lugs being of a cross sectional area which is substantially the same as the size of the openings 14. In the completed structure the lugs enter and may extend through the holes 14.

The plate 20 is further cut away as indicated at 29, this curvature approaching but being somewhat less than the curvature of the nose or front of the point or shell. See Fig. 6, referring to the dotted lines. Shoulders 30, extend as shown and serve to prevent rearward movement of the plate upon the shell beyond the chosen limit. Also, the lugs 27 and 28, in the holes 14, aid in this function and further prevent forward movement. Of course, the contacting portions of the plate and shell prevent sidewise play therebetween.

The two parts may be assembled by springing the plate and by actual bending of the shell after which the shell is straightened. Thereupon the two parts are in the position shown in Fig. 6 and the wooden shaft 31 is now twisted and moved into the assembled unit, the lugs 27 and 28, formed of metal, threading and cutting into the shaft 31 during this joining and thus preventing separation of the elements. The plate at 29 is within the slot 13 as shown in Fig. 6 and may be brazed or welded thereto if necessary.

Fig. 8 discloses a modification of the plate, similar generally to the plate 20. However, lugs 41 and 42 have their opposed surfaces 43 and 44, respectively, chamfered as shown. The plate is recessed at 45 and 46 with a shoulder 47 therebetween. The plate may now be slid into the

slot 13 and then a quick blow given to the protected point of the plate thus causing the surfaces 43 and 44 to slide along the outer surface of the shell to above and then into the openings 14. Thus the elements are joined together.

However, the preferred form of assembly is as previously explained, that is, bending the rear portions of the shell adjacent the small openings 14 toward one another until the plate 40 may be slid thereover. It is understood that the shell is bent no more than is absolutely necessary. My idea of rounding the lugs at their tips or shaping them as shown facilitates the assembly.

As shown in Fig. 8 the small lugs are longitudinally spaced and are of sufficient length to extend through the shell. During assembly of the completed head upon its wooden shaft a rotary movement is employed whereby the small lugs cut into the wooden shaft and cut a helical groove therein, the pitch of this thread being twice the distance 45. See Fig. 8. The wooden shaft is shown at 31 in Fig. 6. Thus the metal head is securely attached to the wooden shaft.

Fig. 9 illustrates the edge construction of the plate. It is to be noted that these edges are beveled and then the medial surface of the beveled portion is cut away in a curved surface as shown. I have discovered that this makes the withdrawal of the arrow materially easier.

In conclusion, my article is lessened in weight by cutting away the metal of the plate at 29 in the one form and at 46 in the other form, thus making a better device.

My construction provides for secure attachment both between the two metal parts of the head and also between the completed head and the shaft. Even without the twisting assembly the parts are retained by the resiliency of the wooden shaft and its tendency to spring back into shape.

Having thus revealed this invention, I claim as new and desire to secure the following combinations and elements, or equivalents thereof, by Letters Patent of the United States.

I claim:

1. A broadhead arrow tip of bullet shape having a plate fastened thereto and extending forwardly therefrom to form an acute angle point, said plate extending alongside of the tip to reinforce the same and said plate having means for biting into the wooden shaft which may be received within the said tip.

2. In combination, a flat plate pointed at one end and medially cut away at its other end, a cylindrical element with a closed end, said end being slotted, said slot receiving the cut away portion of the flat plate whereby the same and the said element are nested together, the degree of nesting being such that the closed end of the element is between the ends of the plate and the end of the plate having the cut away portion is between the ends of the said cylindrical element.

3. An arrow head for hunting wild game comprising a metal shell having one end pointed and the other end open, said closed or pointed end being slotted rearwardly, a metal plate formed of spring steel having a pointed front end and being symmetrically cut away to enter said slot and to extend rearwardly along both sides of the said shell, said shell having a slot in alignment with said metal plate and means on the plate extending into the said slot.

4. An arrow head as set forth in claim 3 in which the said means extends through the shell some little distance for the purpose described.

5. An arrow head as set forth in claim 3 in which the shell has oppositely disposed slots and the plate has means extending therethrough.

6. An arrow head as set forth in claim 3 in which the metal plate is shouldered to contact the rear of the slot in the metal shell.

7. An arrow head of the class described comprising a bullet shaped shell slotted rearwardly from its nose a short distance, an impact plate having a thickness equal to the width of the slot, said plate being slidably received within the said slot and cooperatively associated means between the rear of said shell and the plate for preventing movement therebetween.

8. An arrow head as recited in claim 7 in which the said plate has shouldered portions abutting against the rear of said slot.

9. A hunting arrow head comprising a pointed plate, a shell of bullet shape having its nose symmetrically located on opposite sides of the plate and intermediate along its length, the rear of the plate terminating prior to the rear of the bullet shaped shell, the rear edges of the said plate extending rearwardly and inwardly for the purpose described.

10. A hunting arrow as set forth in claim 9 in which the angles at the rear of the plate are greater than right angles.

11. An arrow head as set forth in claim 9 in which the angles at the rear of the plate are each approximately 115°.

12. In combination, a metal arrow tip having its nose slotted rearwardly, said tip being hollow, a plate received in said slot, said plate being pointed, said plate being cut away so as to not extend interiorly across the tip, and means for fastening the rear of the plate and the tip together.

13. An arrow tip comprising two elements, one element being of bullet shape and the other being flat, said bullet shaped element being slotted medially from its tapered end, said flat element being received therein and means for fastening the flat element to the other element at a distance from the said slot.

14. An arrow tip as set forth in claim 13 in which the bullet shaped element is hollow and the flat element is cut away so as to not extend through the said slot into the interior of the hollow element.

15. An arrow head of the class described comprising, a flat metal plate having its side edges acutely positioned to form a point, an elongated member having an axial recess therein to receive the shaft of an arrow, said shaft being entered from one end of the elongated member, the other end of said elongated member being slotted, said plate opposite its point being entered into said slot and means for holding the plate and the member together.

16. An arrow head as set forth in claim 15 in which said holding means includes a projection extending from the plate through the elongated member into the said axial recess, said holding means being barbed to prevent accidental withdrawal of the arrow shaft.

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