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HUNTING ARROW

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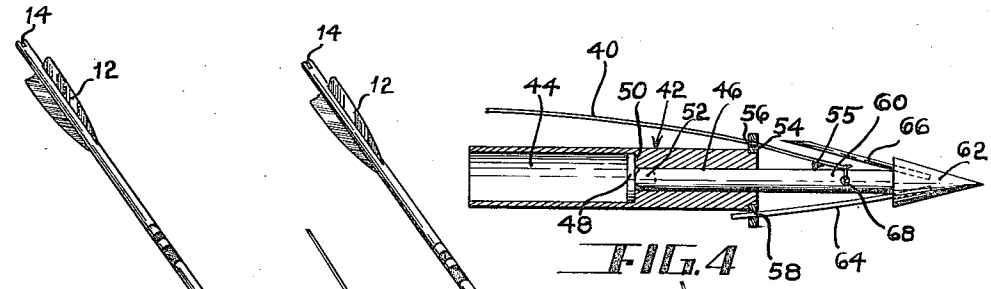



FIG. 4




FIG. 1




FIG. 2




FIG. 5

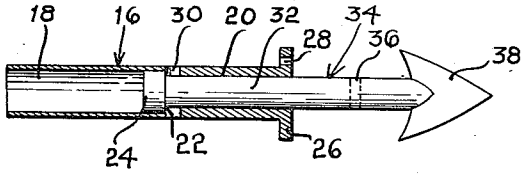



FIG. 3

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# HUNTING ARROW

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3 Claims. (Cl. 43—6)

This invention relates to hunting arrows, and more particularly to the type of arrow which has a detachable arrowhead.

In bow and arrow fishing and hunting, when the arrow is fired and the arrow enters the fish or other game or prey, there is great danger of the arrow shaft being broken or lost during the thrashing efforts of the game to free itself.

One of the objects of the present invention is the production of a releasable arrowhead which will free the shaft from the thrashing and plunging of the game and is at the same time retrievable.

A further object of the invention is the provision of novel means for releasing the arrowhead from the shaft at the moment of impact with the body of the fish or other game so that, as the arrowhead enters further, the shaft is released from the head.

A further object of the invention is the production of a hunting arrow, all parts of which are retrievable.

A further object of the invention is the provision of a buoyant shaft, which is made either of buoyant material or is made in the form of a hollow shaft of aluminum or other material not buoyant in itself but plugged at its ends to become buoyant in water.

Other objects and advantages reside in the construction of parts, the combination thereof and the mode of operation, as will become more apparent from the following description.

In the drawings,

Figure 1 is an exploded view of the parts of the arrow.

Figure 2 is a perspective view of the arrow showing the parts assembled and ready for use.

Figure 3 is a view of the releasable arrow, with the sleeve casing for the head shown in cross section.

Figure 4 is a view of a modified form of head or harpoon tip.

Figure 5 is an exploded view of the modification.

Referring more in detail to the drawing, an arrow or harpoon shaft **10** is formed with feathers **12** and nock **14** for engaging the string of a bow. While specifically an arrow is shown for propulsion from a bow, it is to be understood that the invention is not limited to this specific form of shaft. Many such harpoons are thrown by hand or by some mechanical propelling means, or simply thrust and retained by the hand of the operator.

A cylindrical sleeve element **16** has permanent attachment to the forward end of the shaft **10**. This sleeve is made of brass, stainless steel, aluminum, plastic, or other non-magnetic material. This sleeve may constitute the entire shaft of the arrow if it is made from some light weight metallic or plastic material. The shaft is buoyant. If it is made of non-buoyant material, then it becomes buoyant if made of hollow tubing with the ends stopped. In that event, tongues may be struck inwardly from the body of the sleeve to form a stop for the shank of the arrowhead.

In order to provide the necessary buoyancy, the extreme end of the tubular sleeve is plugged or sealed and a suitable plug or seal is inserted at the end of the shank of the arrowhead.



The sleeve **16** is provided with cylindrical borings **18** and **20**. The diameter of the boring **20** is less than that of the boring **18** so that an annular shoulder **22** is formed midway of the ends of the sleeve **16**. The boring **18** receives and is permanently attached to the forward end of the shaft **10**.

A permanent magnet **24** is seated upon the shoulder **22** and is permanently attached in any desired manner to the interior surface of the sleeve.

The forward portion of the sleeve is provided with an integral annular disc-like collar member **26**. This member may be of any desired formation, such as protuberances bent back to form wings (not shown in the drawings). Its function is to provide a stop for the shaft when the arrow strikes the prey. An eye opening **28** is provided in the member **26** through which a retrieving cord may be threaded. The boring **20** has an outlet opening **30** for facilitating cleaning. The shank **32** of a ferromagnetic arrow **34** is received by the bore **20** and is seated on, and held by, the magnet **24**. The arrow **34** is provided with a cylindrical opening **36** diametrically positioned in the shank **32** in an area adjacent the arrow head **38**.

The end of a retrieving cord or cable **40** is passed through the opening **28** on the collar **26**, and is then secured to the arrow shank at the opening **36**. In operation, the arrow is placed within the forward end of the sleeve **16**, and there held by the force of the magnet **24**. The retrieving cord **40** is adjusted as described above and secured in a manner not shown, but commonly known to the art.

When the shaft is thrown or propelled by a bow, as the arrowhead **38** enters the fish or other game, the collar **26** strikes the body of the fish, stops the travel of the shaft. The arrowhead, under the impetus and momentum induced by the speed at which it is traveling, is freed from the magnet and continues into the body of the fish. The shaft **10** is freed and the danger of breaking due to the floundering and thrashing efforts of the prey to free itself is averted. The arrow **38** continues its travel into and is anchored in the body of the fish or other game.

The retrieving cord **40** is attached to the arrow and slides through the opening **28** in the collar which is attached to the shaft, so that both shaft and arrow are restored to the operator. The arrowhead and the cord remain attached to the body of the game and the cord is instrumental in bringing it in, as is well known in the art, particularly in harpoon fishing.

In the modification shown in Figures 4 and 5, the sleeve **42** is provided with a cylindrical boring **44** and the reduced boring **46**. The boring **44** receives the end of the shaft **10**, which can be in all respects the same as the shaft **10** shown in Figures 1, 2 and 3. A metal disc **48** lies against the shoulder **50** and operates to keep the bamboo or wood or other material of the sleeve from splintering under rigorous conditions of use. The boring **46** is provided with an opening **52** through the casing or sleeve **42** for purposes of cleaning and drainage. An annular collar **54** is attached to or formed integrally with the casing or sleeve **42** and operates as an abutment or stop which interrupts the flight of the shaft **10** when it strikes the body of the game and detaches it from the arrow **55**.

The collar **54** is provided with an opening **56**, through which the retrieving cable, such as the one shown at **40** in Figures 1 and 2, is drawn. It is also provided with a second opening **58**.

The arrow **55** comprises the shank **60**, the arrowhead or point **62**, a tension spring or resilient member **64** and

a barb **66**. The shank **60** is provided with an opening **68** to which the end of the cord **40** is tied.

When the shank **60** of the arrow **55** is inserted into the boring **46**, the spring member **64** is flexed inwardly and inserted into the opening **58**. The tension of the member **64** is sufficient to hold the arrow to the casing until the collar **54** strikes the body of the prey, as above described. Then the forward momentum of the arrow is sufficient to disengage it and it is freed to continue its travel into the body of the prey. The barb enters the flesh and prevents accidental withdrawal of the arrowhead.

Although the shaft has been shown as circular and the tubular portion and the shank also as circular, these parts may have any other suitable cross sectional area, such as square, rectangular, polygonal or oval cross sectional.

Although the preferred embodiment of the device has been described, it will be understood that within the purview of this invention various changes may be made in the form, details, proportion and arrangement of parts, the combination thereof and mode of operation, which generally stated consist in a device capable of carrying out the objects set forth, as disclosed and defined in the appended claims.

Having thus described my invention, I claim:

1. A hunting arrow comprising a shaft, the lower end of said shaft being provided with a sleeve, said sleeve having a cylindrical boring positioned at one end to receive the end of said shaft and a cylindrical boring of reduced diameter positioned at the other end of said sleeve, a collar on said sleeve of greater diameter than the outer circumference of said sleeve, said collar being provided with a pair of openings, an arrowhead comprising a shank portion adapted to be inserted into the reduced boring of said sleeve, an arrow point, a barb for preventing withdrawal of the arrowhead from the flesh of the prey, and a straight resilient member attached to said arrow point and adapted to be received in a condition of tension in one of said openings in said collar, to hold the arrowhead detachably engaged to said shaft.



2. A hunting arrow comprising a shaft, a sleeve permanently attached to the forward end of said shaft, said sleeve being provided with a collar at its forward end, said collar having two oppositely disposed openings, an arrowhead having a shank insertable into one end of said sleeve, and means for detachably securing said arrowhead to said sleeve, said means comprising a resilient member attached to the arrowhead and adapted to be received in one of said openings in a condition of tension.

3. A hunting arrow comprising a shaft and an arrowhead, means for detachably securing said arrowhead to said shaft, said means comprising a resilient member on said arrowhead and a collar member mounted on said shaft, said collar member having an opening formed therethrough, said resilient member being adapted to be received in said opening in a condition of tension to hold said arrowhead releasably attached to said shaft, and a retrieving cord attached to said arrowhead and slidably attached to said shaft.


**References Cited** in the file of this patent

UNITED STATES PATENTS

| | | |
|---|---|---|
| 1,976,065 | Forkner | Oct. 9, 1934 |
| 2,079,937 | Harris | May 11, 1937 |
| 2,236,427 | Garrison | Mar. 25, 1941 |
| 2,288,562 | Birkhofer et al. | June 30, 1942 |
| 2,599,626 | Gottschalk et al. | June 10, 1952 |

FOREIGN PATENTS

| | | |
|---|---|---|
| 27,349 | Norway | 1918 |
| 411,731 | Italy | June 9, 1945 |
| 910,493 | France | June 7, 1946 |