Dec. 6, 1955 R. D. SCHMIDT 2,725,656

ARROWHEAD OR HARPOON POINT

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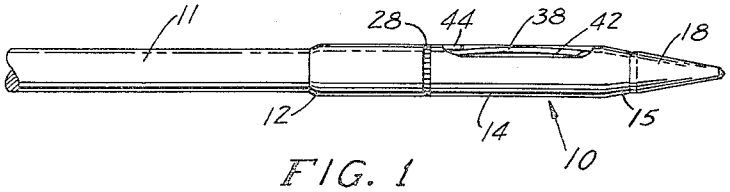


FIG. 1

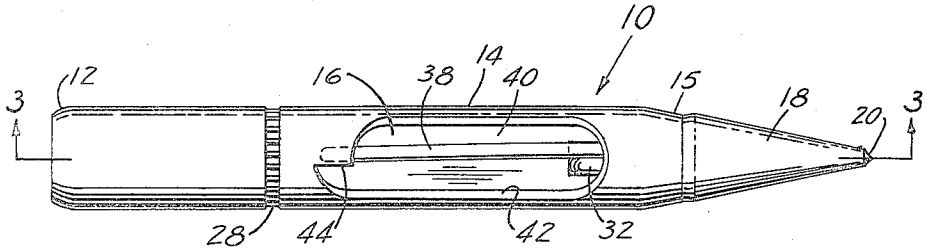


FIG. 2

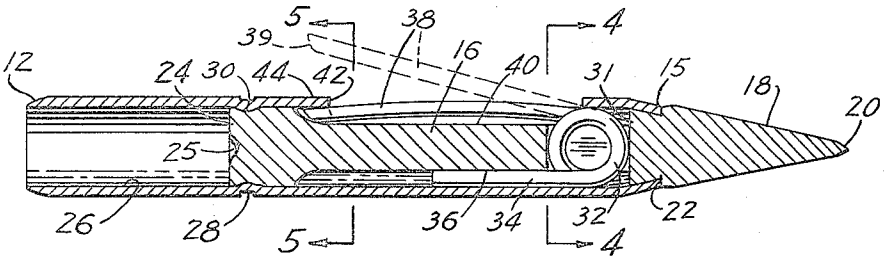


FIG. 3

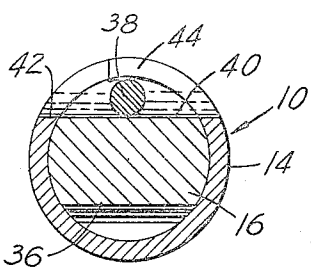


FIG. 5

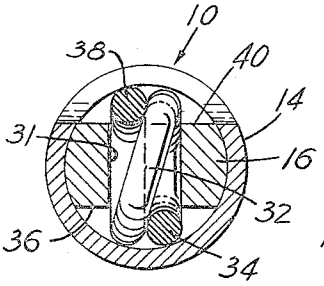


FIG. 4

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ARROWHEAD OR HARPOON POINT

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6 Claims. (Cl. 43—6)

This invention relates to an arrowhead, and more particularly has reference to an arrowhead having a retractable barb.

It is a highly desirable feature, in an arrowhead of the type used on arrows employed in the sport of shooting fish, that the arrowhead have a barb thereon, which barb prevents the fish from getting off after the arrow has penetrated its body. In this connection, when conventional arrows are employed, it is difficult to disengage the arrow from the fish, due to the presence of the barb, which interferes measurably with the movement of the arrow while it is being pulled back out of the fish's body. The arrow has a line attached to it, and when a non-retractable barb is provided, the only way in which the arrowhead can be withdrawn is to cut the line.

In view of the above, the present invention is so designed as to have incorporated therein a barb that can be clipped in a position in which it is confined wholly within the arrowhead, preliminary to withdrawing of the arrowhead from the fish. With the barb confined within the arrowhead, the arrowhead can be easily withdrawn without the necessity of cutting the line.

An object of importance is to provide an improved construction for an arrowhead of the type stated, which will make use of a tubular housing adapted to be fitted onto the shaft of the arrow, with said housing being so designed as to simplify assembly to a distinct degree, and, further, to prevent the barb from bending back when the fish is caught.

Yet another object is to embody, in the tubular housing at least one slot through which a leg of the coil spring barb may be normally spring biased in an outward direction to an operative position, with said slot having at one end an overhang adapted for releasable engagement of the free end of said leg thereunder when the barb is to be clipped in a retracted position for withdrawing of the arrowhead.

Other objects will appear from the following description, the claims appended thereto, and from the annexed drawing, in which like reference characters designate like parts throughout the several views, in which:

Figure 1 is a side elevational view of an arrowhead formed in accordance with the present invention, the barb being in a clipped or recessed position;

Figure 2 is an enlarged top plan view of the arrowhead;

Figure 3 is a longitudinal sectional view taken on line 3—3 of Figure 2;

Figure 4 is a transverse sectional view, still further enlarged, on line 4—4 of Figure 3; and

Figure 5 is a transverse sectional view, taken on the same scale as Figure 4, on line 5—5 of Figure 3.

The reference numeral **10** has been applied generally to an arrowhead formed in accordance with the present invention. The arrowhead **10**, as shown in Figure 1, is adapted to be mounted upon a conventional arrow shaft **11** being engaged at the one end **12** of an elongated, cylindrical, tubular housing or sleeve **14** of the arrowhead **10**.

The sleeve or housing **14** is open at its leading end **15** as well as at the trailing end **12**.

Disposed within the housing or sleeve **14** is a cylindrical, solid body **16** the forward end **18** of which is tapered to a point **20** with the face portion of the forward end **18** having a circumferential groove **22** formed therein to define a shoulder between the pointed forward end **18** and the other portion of the body **16**. The pointed forward end of the body **16** projects longitudinally outwardly from the leading end **15** of the housing **14**.

At its rear end, the body **16** has a flat end surface **24** formed with a central indentation **25** disposed inwardly from the trailing end **12** of the housing **14** so as to define with that portion of the housing extending to the end of the body remote from the pointed end thereof, a shaft-receiving socket **26** in which the shaft **11** may be engaged with the end surface of the shaft abutting the end face or surface **24** of the body and against the central indentation **25**.

The body **16** is secured within the housing **14**, in the position as hereinbefore set forth, by crimping the leading end **15** of the housing in the circumferential groove **22** so as to abut against the shoulder defined thereby, and a circumferential, knurled groove **28** in the housing **14** adjacent the end surface **24** of the body. As clearly shown in Figure 3, when the knurled groove **28** is pressed or otherwise formed in the housing **14**, a portion of the material of the housing will engage in an annular external depression, of flat arcuate shape, formed in the body, as indicated at **30**. Thus, the body **16** will be fixedly secured within the housing **14**.

A diametrically extending, relatively wide slot or opening **31** is formed in the body **16** adjacent the shoulder portion or base of the pointed forward end **18**. Engaged in the slot **31** against movement either longitudinally or transversely of the body **16** is a single coil spring **32**, having an integrally formed bottom leg **34** engaged in a longitudinal recess **36** formed in the underside of the body **16**. The leg **34** extends approximately half the length of the groove or recess **36** and is frictionally maintained therein between the body and the adjacent inner surface of the housing, and is materially shorter than an integrally formed upper leg **38** of the coil spring **32**. The leg **38** may extend outwardly from the body **16** and through a slot **42** formed in the upper surface of the housing **14**, as shown in broken lines in Figure 3. One end of the slot **42** terminates above the coil of the spring **32** disposed in the opening **31**. The leg **38** is, therefore, spring biased upwardly and outwardly from the body to extend through the slot **42** and has its free end provided with a rearward taper to define a point **39** so that the leg **38** defines a barb. The body **16** is provided with a recessed portion **40** extending from the opening **31** toward the end surface **24** and terminating adjacent thereto with the recess **40** opening toward the slot **42**.

The recessed portion **40** defines a flat surface which the leg **38**, constituting a barb when the device is in use, extends longitudinally of for the greatest part of its length and is retained against the bias of the coil portion of the spring **32** by engagement under an overhanging portion **44** formed on the housing **14** adjacent the end of the slot **42** remote from the leading end **15** of the housing, the overhanging portion **44** being approximately half the width of the slot **42** and thus, the barb **38** may be clipped or held in a retracted position. The operative position of the barb **38** is shown in broken lines in Figure 3.

In assembling the device, it is merely necessary to insert the body **16** with the coil spring positioned in the slot **31** in the rear, open end **12** of the housing **14** and then to push the same to a position wherein the base or shoulder of the forward pointed end **18** is at the leading end **15** of the housing. The leading end **15** of the hous-

ing may then be crimped into the circumferential, annular groove 22 and the knurled groove 28 cut into the housing so as to fixedly secure the body within the housing. The shaft 11 is then engaged fixedly in the provided recess 26, and the arrow with the arrowhead of this invention is now completely assembled.

In use, the leg 38 is shifted to the dotted line position shown in Figure 3, said leg snapping to said position under the force of the spring tension in the coil 32. The arrow is then ready for use in shooting, and assuming that it has penetrated the body of a fish or other animal, with the head extending fully through the body, it can readily be withdrawn merely by clipping the leg 38 in retracted position as shown in Figures 1, 2 and 3 from the operative position shown in broken lines in Figure 3. To clip the leg, the free end portion is merely forced downwardly against the spring tension at the side of the overhanging portion 44, after which the leg 38 is shifted laterally to engage under the overhanging portion 44. The arrow may then be withdrawn with ease and without further damage to the body of the fish or other animal in which it is embedded.

From the foregoing, it will be apparent that there has been provided an arrowhead mountable on an arrow shaft which comprises a tubular housing 14 open at both the leading end and trailing end 15 and 12 and having a longitudinal slot 42 formed therein, a body 16 having one end terminating in a point 18 carried within the housing with the pointed end 18 projecting longitudinally from the housing and having its other end spaced from the adjacent end 12 of the housing to define therewith a shaft-receiving socket, and spring means 32 carried by the body with a leg 38 on the spring means 32 biased radially outwardly from the body and through the slot 42 to define or form a barb. The housing 16 includes an overhanging portion 44 at one end of the slot 42 to releasably engage and hold the barb 38 against its spring bias.

While there is shown and described the preferred embodiment of the invention, it is to be understood that the structure is susceptible to change and modification within the practicability of the invention and therefore should be limited only by the scope of the claims appended hereto.

What is claimed is:

1. An arrowhead mountable on an arrow shaft comprising a tubular housing open at both ends and having a longitudinal slot therein, a body having one end terminating in a point carried within said housing with said pointed end projecting longitudinally therefrom at one end thereof and the other end of said body spaced from the other end of said housing to define therewith a shaft-receiving socket, a coil spring carried by said body, and a leg formed integrally with and as a continuation of one end of said spring biased outwardly therefrom and from said body and through said slot to form a barb.

2. An arrowhead mountable on an arrow shaft comprising a tubular housing open at both ends and having a longitudinal slot therein, a body having one end terminating in a point carried within said housing with said pointed end projecting longitudinally therefrom at one end thereof and the other end of said body spaced from the other end of said housing to define therewith a shaft-receiving socket, a coil spring carried by said body, and a leg formed integrally with and as a continuation of one end of said spring biased outwardly therefrom and from said body and through said slot to form a barb, said housing including an overhanging portion adjacent said slot to releasably retain said barb in a retracted position against its spring bias.

3. An arrowhead mountable on an arrow shaft comprising a tubular housing open at both ends and having a longitudinal slot therein, a body having one end terminating in a point carried within said housing with said pointed end projecting longitudinally therefrom at one end thereof and the other end of said body spaced from the other end of said housing to define therewith a shaft-receiving socket, a coil spring carried by said body, and a leg formed integrally with and as a continuation of one end of said spring biased outwardly therefrom and from said body and through said slot to form a barb, said housing including an ovehanging portion adjacent said slot to releasably retain said barb in a retracted position against its spring bias, said body having an opening transversely therethrough adjacent said pointed end, and said spring being retained in said opening against transverse and longitudinal movement.

4. An arrowhead mountable on an arrow shaft comprising a tubular housing open at both ends and having a longitudinal slot therein, a body having one end terminating in a point carried within said housing with said pointed end projecting longitudinally therefrom at one end thereof and the other end of said body spaced from the other end of said housing to define therewith a shaft-receiving socket, a coil spring carried by said body, and a leg formed integrally with and as a continuation of one end of said spring biased outwardly therefrom and from said body and through said slot to form a barb, said housing including an overhanging portion adjacent said slot to releasably retain said barb in a retracted position against its spring bias, said body having an opening transversely therethrough adjacent said pointed end, said spring being retained in said opening against transverse and longitudinal movement, and said body having diametrically opposed longitudinal recesses formed therein with one of said recesses opening toward said slot in the housing to define a flat surface which said barb overlies in its retracted position.

5. An arrowhead mountable on an arrow shaft comprising a tubular housing open at both ends and having a longitudinal slot therein, a body having one end terminating in a point carried within said housing with said pointed end projecting longitudinally therefrom at one end thereof and the other end of said body spaced from the other end of said housing to define therewith a shaft-receiving socket, a coil spring carried by said body, and a leg formed integrally with and as a continuation of one end of said spring biased outwardly therefrom and from said body and through said slot to form a barb, said housing including an overhanging portion adjacent said slot to releasably retain said barb in a retracted position against its spring bias, said body having an opening transversely therethrough adjacent said pointed end, said spring being retained in said opening against transverse and longitudinal movement, said body having diametrically opposed longitudinal recesses formed therein with one of said recesses opening toward said slot in the housing to define a flat surface which said barb overlies in its retracted position and a second leg on said coil spring extending radially therefrom and retained in the other of said recesses between said body and said housing.

6. An arrowhead mountable on a shaft comprising a tubular housing open at both ends and having a closed longitudinal slot therein, a body having one end terminating in a point received within one open end of said housing with its other end spaced from the other open end of said housing to define along with said other end of the housing a shaft-receiving socket with said body bridging said slot, said pointed end extending longitudinally from said one open end of said housing, said body having formed therein an opening transversely therethrough disposed within said housing and adjacent said pointed end and having diametrically opposed longitudinal recesses formed therein intermediate its ends with one of said recesses opening into said slot in the housing, resilient means having a pair of spaced legs biased outwardly thereof, said means being arranged within said opening in the body against transverse and longitudinal movement with one leg arranged in and extending longitudinally of one of said recesses and the other of said legs arranged in the other of said recesses so that said one leg is biased

to extend outwardly through said slot and said other leg serves to anchor said resilient means in said body, said one leg having its free end remote from said resilient means rearwardly tapered so that the leg defines a barb, and retaining means carried by said housing for holding said one leg within said one recess against the bias of said resilient means.

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