

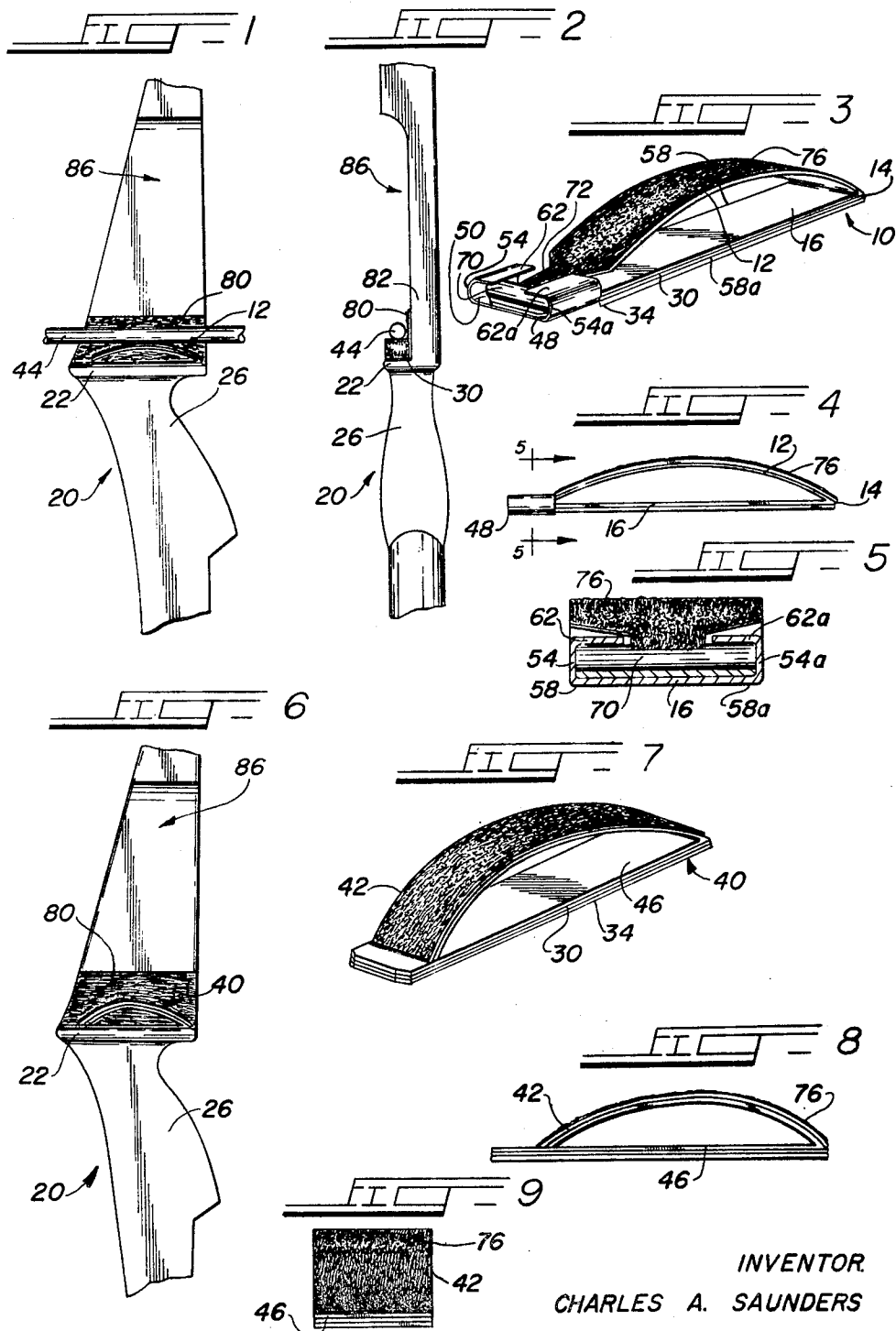
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ARCHERY BOW AND LEAF SPRING ARROW REST

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ARCHERY BOW AND LEAF SPRING ARROW REST

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ABSTRACT OF THE DISCLOSURE

An arrow rest for an archery bow and comprising a flexible, spring-like, pressure-responsive, and resilient arrow support band mounted on and arched upwardly of a laterally extending arrow shelf of the bow and constituting a low-friction support element across which an arrow rides during its propulsion from the bow.

This invention relates to an attachment for an archery bow. More particularly, the invention is directed to an improved arrow rest which supports the shaft of an arrow prior to and during its propulsion from the bow.

Arrow rest devices have been widely used to promote true flight and to reduce undesirable deflection effects caused as the arrow feathers pass the bow, and many types of arrow rests are known in the prior art. However, no completely satisfactory rest has heretofore been produced, each prior art device having one or more shortcomings or objectionable features. Many of the available mechanisms are unduly complex and are difficult to mount on the bow and to use. Others are ineffective for their intended purpose, causing undesirable arrow deflection and impairing overall accuracy. It is the aim of the present invention to provide a simple yet highly effective arrow rest which avoids the above-described objectionable features and disadvantages.

It is a principal object of the invention to provide an arrow rest which includes a low-friction, pressure-responsive, resilient, arrow-support band which is exceedingly light in weight and which may conveniently and simply be attached to a bow.

A related object of the invention is to provide an arrow rest which may be produced economically, which is durable in use, and which is of an exceedingly simple yet unusually effective construction.

A further object of the invention is to provide an arrow rest which may be quickly and easily attached to a bow without the use of tools.

Still another object of the invention is to provide an arrow support band which defines a vaulted arrow-supporting arch which is readily and resiliently deformable downwardly as radially extending tail elements of the arrow pass thereover and bear thereagainst.

Yet another object of the invention is to provide an arrow rest which is of a one-piece, leaf-spring construction and which has no "moving" parts.

Another object of the invention is to provide an arrow rest which eliminates arrow "bounce" and vertical deflection as the arrow is shot from the bow.

Other and further objects, features, and advantages of the invention will become apparent from a reading of the following specification taken in conjunction with the drawing in which:

FIGURE 1 is a fragmentary side elevational view of a bow structure with an arrow rest embodying the features of the invention, the arrow rest being mounted on the bow and supporting the shaft of an arrow;

FIGURE 2 is a front elevational view as seen from the string side of the bow;

FIGURE 3 is a perspective view showing one embodiment of the arrow rest of the invention;

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FIGURE 4 is a side elevational view of the arrow rest of FIGURE 3;

FIGURE 5 is a cross-sectional view taken substantially on the line 5—5 of FIGURE 4;

FIGURE 6 is a view similar to FIGURE 1 but showing a second embodiment of the leaf spring arrow rest of the invention;

FIGURE 7 is a perspective view of the arrow rest shown in FIGURE 6;

FIGURE 8 is a side elevational view of the arrow rest shown in FIGURE 7; and

FIGURE 9 is an end view of the arrow rest of FIGURE 7.

The aims and objects of the invention are realized by providing an arrow rest which consists essentially of a novel leaf spring or band spring which may be attached to the bow by any suitable means but which is preferably bonded to the bow by means of pressure sensitive adhesive, the spring serving as a resilient support for an arrow shaft during propulsion of the arrow from the bow. The spring element itself is highly sensitive, responding to vertical pressure applied thereagainst to eliminate undesirable bounce and to smooth the launching of arrows propelled from the bow, thereby improving trajectories and promoting true flight. Preferably, the spring is a thin flexible ribbon of polished steel.

Referring now more particularly to the drawing, and especially to FIGURES 1 through 5, for purposes of disclosure one preferred embodiment of the arrow rest 10 of the invention is shown as comprising an arcuate, upwardly vaulted band or ribbon-like leaf spring 12 joined 14 at one end to a thin, flexible base plate or mounting strip 16 which is preferably an integral extension of the spring 12 itself, the spring and the mounting strip defining an acute angle at their juncture 14 so that the spring 12 bridges the mounting strip 16 along the length thereof. The arrow rest is fastened to the bow 20 at a shelf 22 adjacent the hand-grip portion 26 by pressure sensitive adhesive 30, applied as a coating to the underside of the base plate 16. A conventional sheet 34 of readily peelable paper or plastic film which covers and protects the adhesive is conveniently removed just prior to mounting the arrow rest on the bow. In the embodiment of the arrow rest 40 shown in FIGURES 6—9, the end 42 of the spring 12 opposite that end joined to the mounting strip 46 is completely free and unrestrained, the edge bearing against and riding upon the strip 46 as the arrow is propelled from the bow. In the preferred embodiment of the arrow rest shown in FIGURES 3, 4 and 5, the forward end 48 of the mounting strip 16 is formed with a guide channel or slot 50 extending axially along and above the mounting strip. While any preferred mechanical means may be used to provide the guide channel 50, the latter is preferably formed integrally with the strip 16 and comprises a pair of parallel disposed walls 54 and 54a extending upwardly of opposed longitudinally extending side edges 58 and 58a of the mounting strip 16. A pair of flanges 62 and 62a extending inwardly of the walls 54 and 54a at upper extremes thereof completes the structure, the entire slot-forming assembly being substantially C-shaped in vertical cross section, as seen most clearly in FIGURE 5. The free end of the spring 12 extends into the slot 50, the latter serving as a slideway and guide. In the specific example of the arrow rest shown in FIGURE 3, the free end of the spring 12 is formed to define a T-shaped tongue consisting of a slide rod 70 extending across the channel 50 and connected to the spring 12 through a neck-like web 72.

Since the top, arrow-contacting surface of the spring 12 is smooth and polished, there is little frictional drag on the arrow 44 riding thereacross. Optionally, a coating

or sheet of lubric material such as Teflon (polytetrafluoroethylene) or Kel-F (polytrifluorochloroethylene) may be applied to the top surface of the spring. In a preferred form of the arrow rest of the invention, a coating 76 of calf skin hair is used, this being cemented to the spring 12. A low-friction strip 80 of the same material, bonded to a vertically extending side wall surface 82 of the window 86 of the bow 20 above the hand grip portion, as shown in FIGURE 2, spaces the arrow from contact with the solid surface of the bow so that frictional forces between the bow 20 and the arrow 44 are still further reduced, promoting true flight.

While this invention has been described with reference to preferred embodiments, it will be readily appreciated that various changes and modifications may be made, and it is intended to cover through the present application all such modifications which fall within the true spirit and scope of the appended claims.

What is claimed is:

1. In combination an archery bow including a hand grip portion and an arrow support shelf thereabove, and an arrow rest, said arrow rest comprising:

a substantially planar mounting strip, means for attachment of said strip contiguously to said bow on a laterally extending said arrow support shelf thereof adjacent and above said hand grip portion of said bow,

an arrow support band joined to said strip at an edge thereof and disposed to overlie at least a portion of said strip, said band and said strip forming an air space therebetween,

said band comprising a flexible upwardly vaulted arched member defining a thin, ribbon-like, flexible and resilient pressure-responsive bridge to support an arrow riding thereon and stressing downwardly thereagainst,

displacement forces applied to said band by said arrow riding forwardly therealong forcing said band yieldingly and resiliently downwardly into said air space to cushion downward vertical thrust of said arrow during shooting, thereby to minimize vertical bounce and deflection of the band-supported said arrow to promote true flight of said arrow upon its propulsion from said bow.

2. An arrow rest as set forth in claim 1 wherein said band comprises a segment of spring metal defining an upwardly vaulted leaf spring.

3. An arrow rest as set forth in claim 1 wherein said mounting strip and said band of said arrow rest constitute a one-piece, integrally formed ribbon.

4. An arrow rest as set forth in claim 1 and further comprising a low friction material coating a top, arrow-facing surface of said band to enhance travel of said arrow along said band, said low friction material consisting essentially of calfskin hair.

5. An arrow rest as set forth in claim 1 wherein said support band is joined to said mounting strip along a horizontal line extending generally transversely of a line defined by said arrow supported on said band.

6. An arrow rest as set forth in claim 1 wherein said means for attachment of said strip to said bow comprises a pressure sensitive adhesive disposed on an under surface of said strip.

7. In combination with an arrow rest as set forth in claim 1, an arrow slide strip of lubric sheet material, means fastening said slide strip to a vertically extending side wall surface of said bow above said hand grip portion thereof and adjacent said arrow support shelf, said slide strip disposed to present a facing of low friction material to an arrow contacting thereagainst and constituting means spacing said arrow from said side wall surface of said bow to preclude direct contact between said arrow and a solid said wall surface during shooting of said arrow,

whereby frictional forces of said arrow against said bow during shooting are minimized and ease of movement of said arrow along said bow is enhanced.

8. An arrow rest as set forth in claim 1 and further comprising slot-defining means formed at an end of said plate and slidably receiving therewithin a free end of said arrow support band, whereby said slot-defining means retains therewithin and serves as a guide for said free end of said band as said arrow rides thereon.

9. An arrow rest as set forth in claim 8 wherein said slot-defining means includes wall means carried by said plate and extending upwardly thereof to define, in combination with said plate, a slot extending along said plate and thereabove.

10. An arrow rest as set forth in claim 9 wherein said wall means cooperate with said plate to form a guide channel generally C-shaped in cross section, and wherein said free end of said band slides axially within said channel in response to downward pressure applied on said band by said arrow riding thereupon.

11. An arrow rest as set forth in claim 10 and further comprising guide control means carried by said band at a free end thereof and extending into and across said slot to move axially therewithin as said band is deformed in response to downward pressure applied thereagainst by said arrow riding thereon.

12. An arrow rest as set forth in claim 1 and further comprising a T-shaped tongue extending axially of a free end of said band, said tongue including rod means disposed in substantially the plane of said band and extending transversely thereacross and a web-like extension of said band connecting said rod means to said band.

13. An arrow rest as set forth in claim 1 wherein an end of upwardly arched said band is presented to said strip and is free to move axially along said strip, said end bearing downwardly upon and sliding longitudinally along a top surface of said mounting strip in response to downwardly directed forces applied to said band.

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