

[54] ARCHERY BOW ARROW REST

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[51] Int. Cl. **F41b 5/00**

[58] Field of Search..... **124/41, 30 R, 24 R, 25, 124/23**

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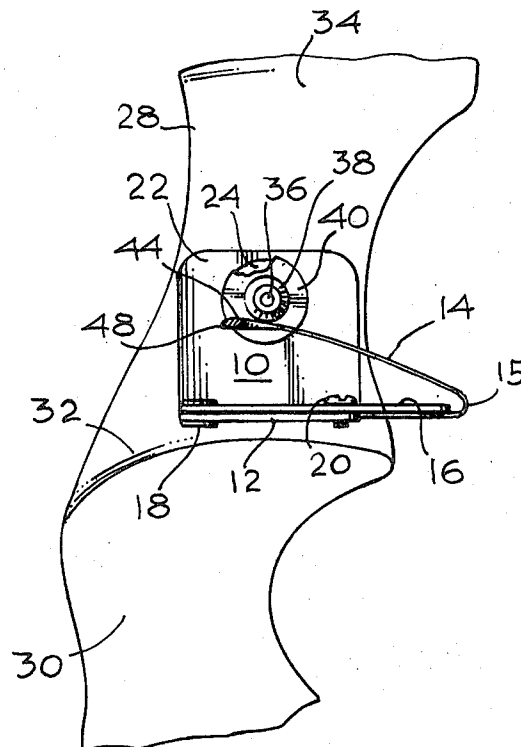
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[57]

ABSTRACT

An improved archery bow with arrow rest is provided an upwardly and forwardly projecting free standing resilient arm connected at its lowest rear end to a horizontally extending base support which permits the arm, which extends above the support, to be adjusted horizontally above the support. The arrow rest is releasably attach the rest to the side wall of the window of the archery bow handle. The rest is connectable to the side wall by an arrow spacing member disposable therethrough. The spacing member can vary the size of the space between the arrow and the side wall of the bow handle. The rest provides improved arrow flight without arrow feather interference.

10 Claims, 4 Drawing Figures



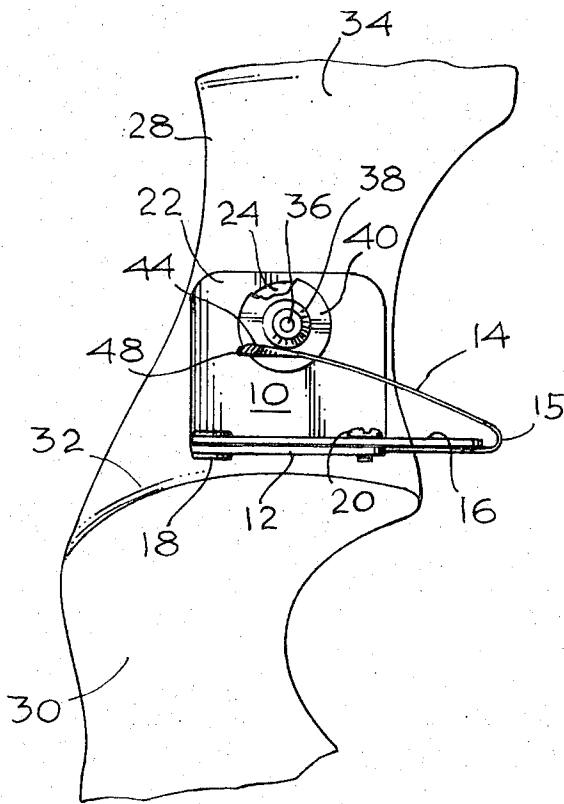


Fig. 1

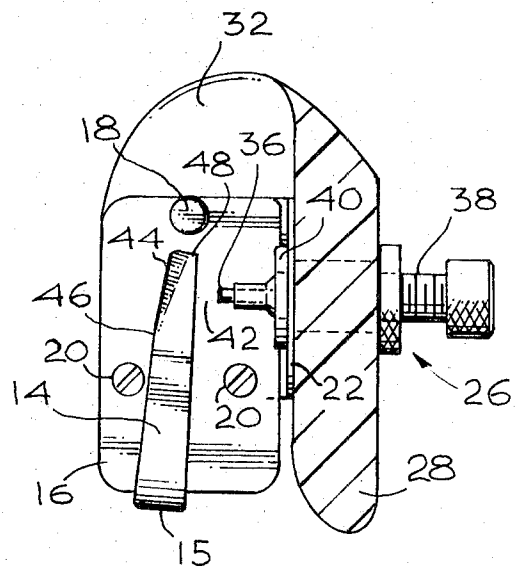


Fig. 2

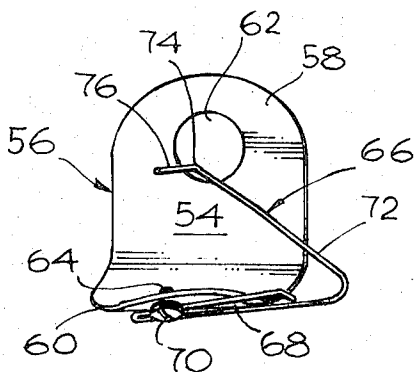


Fig. 3

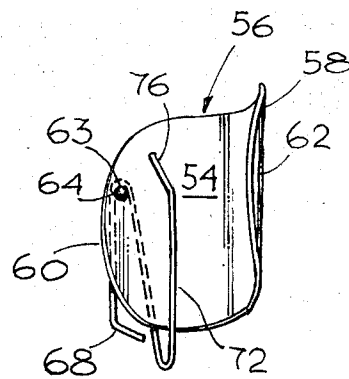


Fig. 4

ARCHERY BOW ARROW REST

BACKGROUND

1. Field of the Invention

The present invention generally relates to arrow rests and more particularly to adjustable arrow rests for archery bows.

2. Prior Art

Arrow rests for archery bows, such as the longbow, modernly the recurved bow, usually comprise a ledge connected to the sidewall of the bow in the "cut out" or window portion of the bow handle above the shelf. The shelf defines the lower edge of the window. Such rests usually project into the window from the sidewall in a substantially horizontal plane. They may be made of metal, plastic, leather, feathers, bristles or the like.

In order to shoot the arrow, its shaft is seated on the ledge and the rear end of the arrow is nocked on the string. Traditionally the string is then drawn with three fingers of one hand protected by a glove or tab, the bow is aimed and the string is then released by the fingers. In moving forward under propulsion from the string, the feathers adjacent the rear end of the arrow would strike the ledge if it were not for the phenomenon known as archers paradox. Instead, the arrow undergoes this phenomenon which consists of arrow shaft bowing due to the sudden force delivered by the string to the rear end of the shaft in a plane other than the longitudinal axis of the shaft. Thus, the shaft tends to bow around the ledge, causing the feathers to clear the ledge. The misalignment of string force imparted to the arrow is caused by the side torque given the string when the fingers leave the string. They drag across the string so that the string is pulled out of direct alignment with the bow limbs, thus delivering the propulsive force to the arrow at an angle. During flight, an arrow so released goes through a series of alternate flexing and bowing motions, all of which tend to reduce its accuracy. Moreover, since all of the propulsive force is not directed towards the target, arrow speed is somewhat reduced, further reducing accuracy.

In recent years, mechanical string drawing aids known as releases which feature point contact with the string have become popular because they greatly reduce archers paradox and increase arrow speed, thus increasing shooting accuracy. They also provide increased uniformity of string release from shot to shot, hereby further improving accuracy. However, because releases reduce arrow shaft bowing during arrow string release, difficulties are often encountered by the archers in obtaining adequate arrow feather clearance of the arrow rest ledge. If the arrow feathers strike the arrow rest ledge, they are not only progressively worn down, requiring frequent replacement, but such striking introduces a side to side oscillation in the arrow and dissipation of force which adversely affect the accuracy of the shot. The problem is most pronounced when relatively inflexible plastic vanes are used in place of feathers on the arrow shaft. Such vanes are more uniform and accurate than feathers. However, if they touch the ledge during release of the arrow, the resulting side oscillation is greater than with feathers.

Accordingly, many archers have resorted in such circumstances to various devices which position the shaft away from the sidewall of the window and as far out towards the outer edge of the arrow rest ledge as possible without having the shaft roll off the edge prior to flight.

Among the newer and better of such shaft positioning devices are those which employ adjustable spring activated collapsible plungers which can be screwed in and out from the sidewall of the bow window. These plungers permit fine tuning of the bow for better performance. They also, however, complicate the problem of arrow clearance around the ledge since they tend to further reduce archers paradox by tending to absorb some of the side pressure exerted by the arrow shaft as it flexes upon string release. Arrow clearance is a particularly serious problem when such plungers are employed with mechanical releases. It has also been found that mechanical releases introduce a further problem relative to shooting accuracy. Thus, slow motion pictures have demonstrated that arrows shot with mechanical releases featuring single point contact with the string undergo substantial and rapid vertical oscillations. Such oscillations can adversely affect shooting accuracy. Such oscillations may be due, in part, to the fact that it is necessary to nock the rear end of the arrow well above the level of the arrow rest to aid in clearing the arrow feathers during shooting. While such oscillations are dampened if the archer uses his fingers and a tab or shooting glove, the overall increase in accuracy otherwise provided by mechanical releases points out the need for means to eliminate or compensate for the described vertical oscillations while retaining the use of mechanical releases.

Accordingly, there is a need for improved means for assuring proper arrow shaft and feather (vane) clearance during shooting and for suppressing or compensating for vertical arrow oscillations while reducing or eliminating archers paradox, all with a view towards increasing shooting accuracy.

SUMMARY OF THE INVENTION

The present invention satisfies the foregoing needs. The invention is substantially as set forth in the Abstract above. Thus, an improved arrow rest is provided which includes an upwardly and forwardly projecting free-standing resilient arm disposed above a base support to which the lower rear end of the arm is attached. The resilient nature of the arm permits it to dampen the vertical oscillations described above.

Moreover, the arm is easily positionable horizontally. The arm is free of and spaced medially of the side of the base support and thus is spaced away from the sidewall of the window. This spacing permits the feathers (i.e., two inboard or hen) or vanes of the arrow to pass between the sidewall and arm without striking either. The result is more accurate arrow flight with fingers or release regardless of archers paradox, all without wear of the feathers or vanes. Further features of the invention are set forth in the following detailed description and accompanying drawings.

DRAWINGS

FIG. 1 is a schematic side elevation of a first preferred embodiment of the improved arrow rest of the invention, showing the rest in place on the handle of an archery bow;

FIG. 2 is a top plan view of the arrow rest of FIG. 1;

FIG. 3 is a schematic side elevation of a second preferred embodiment of the arrow rest of the invention; and,

FIG. 4 is a top plan view of the arrow rest of FIG. 3.

DETAILED DESCRIPTION

FIGS. 1 and 2

As shown in FIGS. 1 and 2, a first embodiment of the invention comprises an arrow rest 10 comprising a generally horizontal base support plate 12, of metal, plastic, etc. and a flat, narrow elongated resilient arm in the form of a strip 14 of spring steel, plastic, etc. Strip 14 extends upwardly and forwardly over plate 12, is free standing and has the lower rear end 15 thereof connected to plate 12 by an adjustable securing means comprising a second horizontal plate 16 of metal, plastic or the like overlying plate 12, a bushing 18 secured to both plates 12 and 16 and a pair of threaded screws 20 received through holes (not shown) in both of those plates. End 15 of strip 14 is lapped over the rear end of plate 16 and is releasably sandwiched between plates 12 and 16 by the compressive force exerted on those plates by screws 20.

Rest 10 also includes attaching means in the form of a vertical plate 22 of plastic, metal, etc. defining aperture 24 through which an arrow positioning means, such as the plunger device 26 shown in FIGS. 1 and 2 may be disposed. Plate 22 may be integrated with plate 12, if desired. Device 26 is not part of the invention. It is shown installed in the sidewall 28 of an archery bow handle 30. Sidewall 28 defines with shelf 32 therebelow a window 34 within which rest 10 is disposed. Device 26 includes a plunger button 36 disposed in a tube 38 horizontally passing through wall 28, and a ring 40 disposed over plate 22, releasably securing it to wall 28.

As is particularly shown in FIG. 2, strip 14 is positioned from vertical plate 22 and plunger button 36 (as well as plate 12) to provide a space 42 therebetween. It is this space 42 which permits the hen feathers of an arrow when placed on rest 10, to pass forward, upon release of the arrow from the bow during shooting, without striking strip 14, button 36 or plates 12 and 22. Obviously, they also will not strike sidewall 28. Space 42 can be widened or narrowed, as by moving button 36 towards and away from sidewall 28 and by repositioning strip 14 horizontally, as by loosening screws 20, sliding strip 14 to the desired location and retightening screws 20. Accordingly, improved arrow clearance and accuracy are provided.

Strip 14 is provided with a raised portion 44 along the outer side 46 thereof adjacent its free forward end 48, which portion 44 acts as an arrow retaining means, preventing the arrow shaft from rolling off the rest before flight.

It will be noted that strip 14 has a resilient spring-like action which effectively dampens vertical oscillations imparted to the arrow shaft upon release of the string during shooting. This also substantially increases shooting accuracy. Accordingly, the improved arrow rest device which is simple, inexpensive and highly effective is provided.

FIGS. 3 and 4

A second embodiment of the arrow rest of the invention is shown schematically in FIGS. 3 and 4. Thus, an arrow rest 54 is shown which comprises a plate 56 having a vertical portion 58 and a generally horizontal portion 60. Portion 58 defines an aperture 62 through which a plunger device (not shown) such as device 26 may be disposed - to secure plate 56 to the sidewall of an archery bow handle in the window portion thereof (not shown). Portion 60 includes an aperture 63

through which a threaded screw 64 protrudes. Screw 64 is used to releasably secure a wire 66 to plate 56.

Wire 66 is resilient and includes a looped bottom portion 68 disposed between the head 70 of screw 64 and the underside of portion 60, and an upwardly and forwardly projecting free-standing portion 72 disposed above portion 60, the forward end 74 of which terminates adjacent aperture 62. As shown in FIG. 4, end 74 is provided with an arrow retaining means in the form of an angled portion 76.

The horizontal positioning of portion 72 relative to portion 60 and portion 58 can be adjusted by loosening screw 64 and sliding wire 66 to the desired location, then retightening screw 64. The spacing of portion 72 from portion 58 controls the extent of arrow feather clearance, while the resiliency of wire 64 assures proper vertical oscillation dampening.

Accordingly, device 54 has the advantages of device 10. Both devices provide increased arrow flight accuracy, ease of shooting and feather longevity. Both devices are easy to install and use. Further advantages are set forth in the foregoing.

It will be understood that the device of the invention can, if desired, may be secured to the shelf of the bow handle window instead of to the sidewall and, moreover, can be used with or without fixed or adjustable arrow positioning means.

Various other modifications can be made in the arrow rest of the invention and in its components. All such modifications as are within the scope of the appended claims form part of the present invention.

What is claimed is:

1. A combination comprising:

- a. an archery bow having a bow handle portion, said bow handle portion having an arrow window defined by a generally horizontal bow shelf and a generally vertical sidewall; and
- b. an improved arrow rest comprising, in combination,
 - i. a generally horizontal base support disposed over said shelf in said window,
 - ii. a resilient, vertically depressible, elongated, free-standing, forwardly projecting means rising above said base support and spaced generally parallel to said sidewall a substantial distance therefrom sufficient to permit the free passage of an arrow feather therebetween and for permitting, primarily, vertical displacement under the load of an arrow resting thereon.
 - iii. securing means releasably securing one end of said arm to said base support for adjustable positioning of said arm towards and away from said sidewall, and,
 - iv. attaching means for releasably attaching said arrow rest to said sidewall.

2. The combination of claim 1 wherein said resilient means has a portion that projects at an angle upwardly in said window and wherein the lower rear end of said resilient means is secured to said securing means.

3. The combination of claim 2 wherein an arrow retainer is connected to one side of said resilient means.

4. The combination of claim 2 wherein said resilient means comprises a thin elongated strip having a free forward end.

5. The combination of claim 4 wherein said strip comprises a metal wire.

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6. The combination of 4 wherein said strip includes a raised portion on one side thereof adjacent said forward end, said angled portion comprising an arrow restainer.

7. The combination of claim 2 wherein said arrow rest includes a generally vertically extending attaching plate connected to said base support adjacent one end of said base support and said plate being adapted to abut said side wall.

8. The combination of claim 7 wherein said attaching plate defines an aperture adapted to receive arrow spacing member projecting from said vertically extending attaching plate.

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9. The combination of claim 2 wherein said base support further comprises a first plate and wherein said securing means comprises a second plate releasably secured to said first plate, between said first and second plates said rear end of said resilient means is releasably sandwiched.

10. The combination of claim 9 wherein said securing means includes screw means disposed through said first and second plates for securing said first and second plates together, and said rear end of said resilient arm is slideably and pivotably connected to said screw means.

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