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ARROW RETAINER FOR BOWS

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Fig. 1

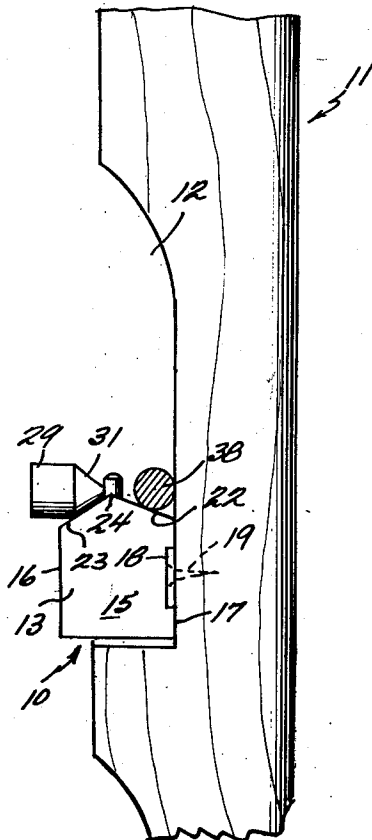


Fig. 2

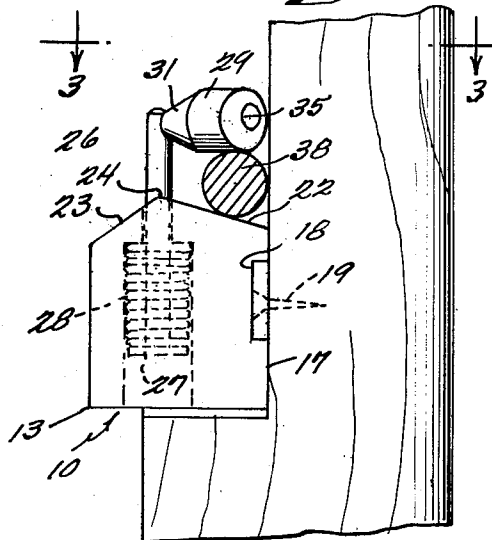


Fig. 3

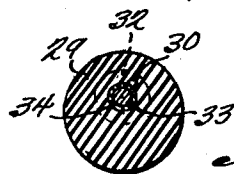
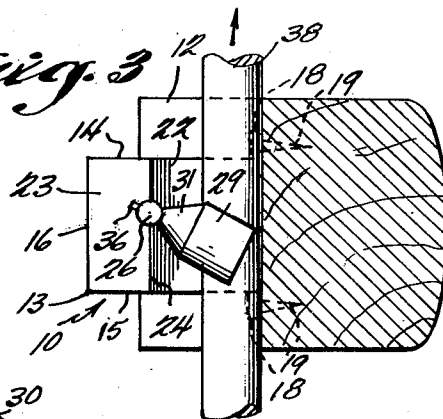


Fig. 5

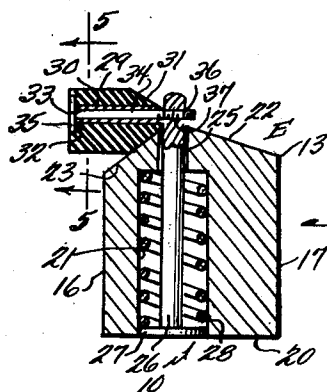


Fig. 4

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ARROW RETAINER FOR BOWS

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3 Claims. (Cl. 124—41)

The present invention relates to an arrow retainer for bows for holding an arrow in shooting position on a bow while the bow is being carried from place to place while hunting.

The primary object of the invention is to provide an arrow retaining attachment for bows for holding the arrow in shooting position under at least partial tension while moving about when hunting.

Another object of the invention is to provide an arrow retaining attachment of the class described above which will be automatically disengaged from the arrow whenever additional tension is placed on the bow.

A further object of the invention is to provide an arrow retaining device of the class described above in which the tendency of the arrow to move through the device increases the frictional engagement of the device with the arrow.

Other objects and advantages will become apparent in the following specification when considered in light of the attached drawings, in which:

FIGURE 1 is a front elevation of the invention;

FIGURE 2 is an enlarged front elevation of the invention with an arrow clamped therein;

FIGURE 3 is a horizontal transverse sectional view taken along the line 3—3 of FIGURE 2, looking in the direction of the arrows;

FIGURE 4 is a vertical sectional view of the device removed from the bow and in unlocked position; and

FIGURE 5 is an enlarged transverse sectional view taken along the line 5—5 of FIGURE 4, looking in the direction of the arrows.

Referring now to the drawings in detail wherein like reference characters indicate like parts throughout the several figures, the reference numeral 10 indicates generally an arrow retaining attachment constructed in accordance with the invention.

The arrow retaining attachment 10 is used in conjunction with a bow, generally indicated at 11, and is mounted in the central recessed opening 12 of the bow 11. The attachment 10 includes a generally rectangular body 13 having a front wall 14, a rear wall 15 arranged in spaced parallel relation thereto, an outer wall 16 perpendicularly connecting the front wall 14 and rear wall 15, and an inner wall 17 arranged in spaced parallel relation to the outer wall 16 and also perpendicularly connecting the front wall 14 and rear wall 15. A pair of oppositely extending generally flat ears 18 are secured to the front wall 14 and rear wall 15 in aligned relation to the inner side wall 17. The inner side wall 17 and the ears 18 are arranged in engagement with the bow 11 and screws 19 extend through the ears 18 into the bow 11 to secure the attachment 10 thereto.

The body 13 has a generally horizontal bottom wall 20 and is further provided with an upright bore 21 extending upwardly into the body 13 with its lower end extending through the lower wall 20.

The body 13 is provided with an inner top wall 22 which slopes upwardly from the inner side wall 17 toward the outer side wall 16, terminating intermediate the inner wall 17 and the outer wall 16. An outer top wall 23 slopes upwardly and inwardly from the outer side wall 16 toward the inner side wall 17 intersecting with the inner top wall 22 along an apex line 24 parallel to the side walls 16 and 17.

A bore 25 is arranged in communication and in axial

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alignment with the bore 21 and opens through the top walls 22, 23 of the body 13, intersecting the apex line 24 formed therebetween.

A shaft 26 is positioned for vertical sliding movement in the bores 21, 25 and is provided with an enlarged head 27 on the lower end thereof. The head 27 has a diameter slightly smaller than the bore 21 and the shaft 26 has a diameter slightly smaller than the bore 25.

A coil spring 28 is seated in the bore 21 in engagement with the inner end E thereof at one end and with the head 27 at the other end. The spring 28 normally urges the shaft 26 downwardly with respect to the body 13, as viewed in FIGURE 4.

A resilient cylindrical lock member 29 is provided with a bore 30 extending therethrough in eccentric relation to the axial center of the lock 29. The bore 30 is arranged in parallel relation to the center of the cylindrical lock 29. One end of the lock 29 is conically tapered at 31. The opposite end of the cylindrical lock 29 is provided with a recess 32 concentric with the bore 30 and somewhat larger than the bore 30. A sleeve 33 extends through the bore 30 from the recess 32, terminating at the opposite end of the lock 29.

A shaft 34 is journaled in the sleeve 33 and has a head 35 thereon seated in the recess 32 engaging against the adjacent end of the sleeve 33. The shaft 34 has the end opposite the head 35 threaded at 36 and extending through a threaded bore 37 in the upper end portion of the shaft 26. The lock 29 and its shaft 34 serve to retain the shaft 26 within the body 13, as can be clearly seen in FIGURE 4.

The shaft 26 carrying the shaft 34 and the lock 29 is permitted to move upwardly with respect to the body 13 until the spring 28 is completely compressed to the position illustrated in FIGURE 2. Further movement of the shaft 26 and lock 29 upwardly with respect to the body 13 is prevented by the completely compressed spring 28.

In the use and operation of the invention, a cylindrical arrow shaft 38 is positioned in the bow 11 resting on the inner top wall 22 and against that portion of the bow 11 defining the cut-out 12. With the arrow shaft 38 in the position illustrated in FIGURE 1, the bow is drawn so that tension is placed on the bowstring (not shown) sufficiently to shoot the arrow shaft 38 out from the bow 11 should the string be released. With the arrow shaft 38 held in tensioned position, the lock 29 is raised upwardly with respect to the body 13 and is rotated about the axis of the shaft 26 so that the lock 29 engages the arrow shaft 38 in the position illustrated in FIGURES 2 and 3.

The thickest portion of the eccentric cylindrical lock 29 is at the lower rear side of the lock 29 when in engagement with the arrow shaft 38.

With the lock 29 and arrow shaft 38 in the position illustrated in FIGURES 2 and 3, the bow string is released, applying outward pressure on the arrow shaft 38 in the direction of the arrow in FIGURE 3, and the frictional engagement of the lock 29 with the arrow shaft 38 tends to cause the lock 29 to rotate on the shaft 34. The eccentric nature of the lock 29 is such that the shaft 38 prevents the lock 29 from rotating beyond a clamping position, in which position the complete compression of the spring 28 prevents the lock 29 and shaft 26 from moving further upwardly. The overall effect of the eccentric action of the lock 29 is to clamp the arrow shaft 38 so tightly against the upper inner surface 22 that the arrow shaft 38 is maintained under tension without the necessity of holding the tension by the hand.

To release the clamping action of the lock 29 when game is sighted, the bowstring is drawn slightly tighter so as to move the arrow shaft oppositely of the arrow in FIGURE 3 a slight amount. The rearward movement

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of the arrow shaft 38 will rotate the lock 29 about the axis of the shaft 26 so that it will disengage from the arrow shaft 38 and be drawn downwardly by the spring 28 against the outer top wall 23. The slope of the outer top wall 23 will cause the lock 29 to continue to rotate until the conical end 31 thereof engages the outer top wall 23. Subsequent arrows are loaded and secured in position by following the same steps.

Having thus described the preferred embodiment of the invention, it should be understood that numerous structural modifications and adaptations may be resorted to without departing from the scope of the appended claims.

What is claimed is:

1. An attachment for an archery bow to maintain arrows in a shooting position comprising a body removably secured to said bow, portions of said body defining a bore therethrough, a rotatably and vertically movable shaft in said bore and having an end thereof extending outwardly of said body, said body including angularly inclined wall portions adjacent the outwardly extending end of said shaft, one of said angularly inclined wall portions providing an arrow support, a lock roller eccentrically and rotatably secured perpendicularly to the outwardly extending end of said shaft and having a portion thereof complementary to and normally in engagement with another of said angularly inclined wall portions of said body, spring means in said bore and in engagement with said shaft to maintain the normal engagement of said complementary portion of the lock member with said other angularly inclined wall portion of said body.

2. An attachment for an archery bow as defined in

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claim 1 wherein said lock roller comprises a resilient substantially cylindrical body having portions thereof defining a generally conical end, said cylindrical body having portions defining a bore therethrough parallel to and displaced from the axis thereof, said lock roller rotatable on a shaft extending through the bore therethrough and fixed to the outwardly extending end of the shaft in the bore of said body, the conical end of said lock member normally in engagement with said other angularly inclined wall portion of said body and said spring means in said body biasing said lock roller to effect engagement of the conical end thereof with said angularly inclined wall.

3. An attachment for an archery bow as defined in claim 2 wherein said resilient lock roller is movable through an arc from an inoperative position to an operative position, the shaft extending through the bore in said body and to which said lock member is secured being reciprocable in said bore and rotatable about its longitudinal axis to cause engagement of said lock roller with an arrow shaft, said springs secured in the bore in said body and to said shaft extending therethrough, the characteristics of said spring maintaining said lock roller in engagement with an arrow shaft when in an operative position and returning said lock member to an inoperative position.

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