May 1, 1956 P. M. WENDT 2,743,716

ARCHERY ARROW RETAINING DEVICE

Filed Jan. 19, 1953 2 Sheets-Sheet 1

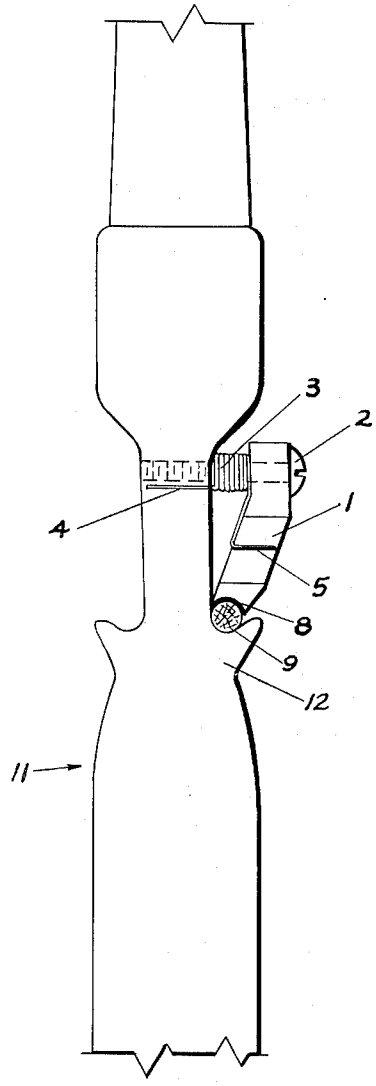


FIG. I

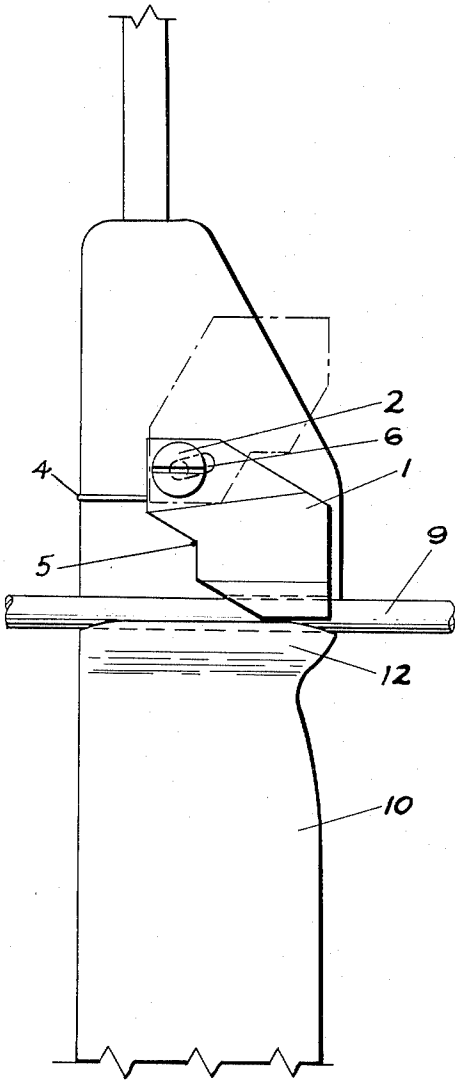


FIG. 2

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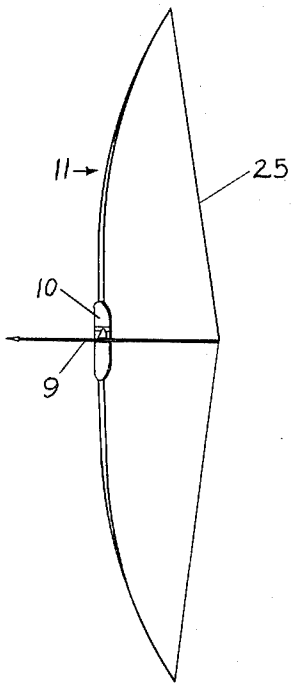


FIG. 3

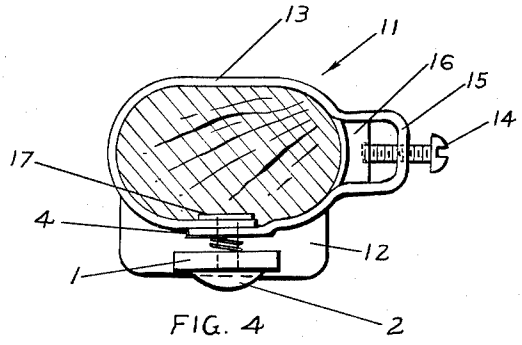


FIG. 4

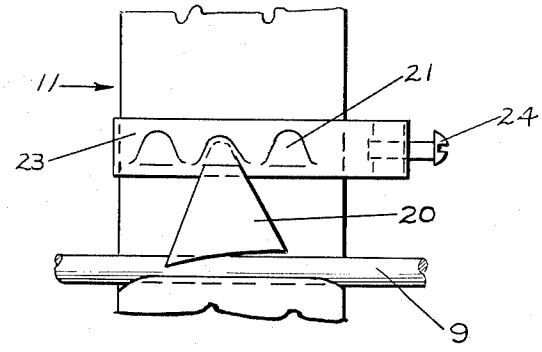


FIG. 5

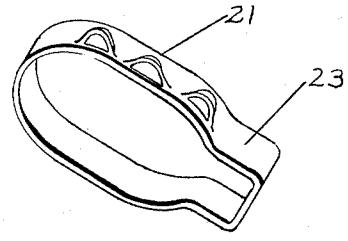


FIG. 6

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ARCHERY ARROW RETAINING DEVICE

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5 Claims. (Cl. 124—41)

The present invention relates to an archery bow and arrow, and especially pertains to a device for retaining an arrow in nocked position relative to a bow and bow-string unit.

It is an object of this invention to provide an archery bow with an automatically releasable retaining means for holding a nocked arrow in ready position prior to drawing and loosing the arrow from the bow.

It is another object of this invention to provide a releasable retaining means for holding an archery arrow nocked to a tensioned bow-string prior to drawing and loosing it from a bow, whereby the readied arrow and bow may be carried as a unit in ready position while stalking a quarry during hunting or the like, leaving the archer's fingers free until he makes a full draw prior to shooting.

It is a further object of this invention to provide a releasable retaining device for temporarily holding an archery arrow in ready position on a bow, said device being adapted to be removably mounted on a conventional bow, and requiring no modification of the bow structure, which further does not affect any of the natural resilient characteristics, nor the natural exterior finish of wooden bows.

It is a specific object of this invention to provide an archery arrow retaining means which comprises a pivotally and slidably mounted wedging means, which is normally biased towards release position and which coacts with an arrow that has previously been nocked to a tensioned bow-string and drawn to a partially biased position to releasably grasp the arrow until it has been drawn to full biased position prior to loosing or releasing from the bow-string.

Referring now to the drawings:

Fig. 1 is a fragmentary view of an archery bow embodying the novel arrow retaining device, which is shown in operating position holding an arrow in ready position and prevented from endwise movement prior to full-draw.

Fig. 2 is a fragmentary view taken from the side of the bow illustrated in Fig. 1.

Fig. 3 is an elevational view of an archery bow and bow-string unit with an arrow being nocked to the bow-string and held in ready position by the retaining device.

Fig. 4 is a cross sectional view taken through a bow handle illustrating an alternative means for mounting the retaining device.

Fig. 5 is a fragmentary view illustrating another embodiment of the present invention.

Fig. 6 is a perspective view of a portion of the embodiment illustrated in Fig. 5.

The retaining device may be best described with reference to Figs. 1 and 2, and comprises a wedging pawl or cam member 1 which is preferably pivotally supported at a fulcrum provided by the pivot pin 2. The pin may be conveniently provided in the form of a headed screw or stud, as shown. A torsional spring 3 is positioned circumjacently of the pin 2 and is arranged to normally bias the cam member towards release position in a

counter-clockwise direction around the pivot pin 2, as shown in Fig. 2. One end of the spring is formed to provide a stationarily positoned arm 4, which contacts the bow. The opposite end is bent to project substantially normal to the bow to provide an arm 5 which engages the cam member at a recessed portion spaced from the pin 2. This provides a force moment, or torque, for rotatively biasing the member towards release position. It is deemed to be preferable to provide an angularly disposed slotted opening 6 in the cam member 1 which is adapted to receive the pin 2. This arrangement will insure a positive wedging action, as will hereinafter be described. However, it is within the province of this invention to provide a pin-receiving opening circular in shape (not shown).

The lower portion of the cam member 1, as viewed in Figs. 1 and 2, terminates in a clutching surface, which is shown herein in the form of a friction pad 8. The pad may be held in place with any suitable means, such as adhesive, clamps, a through-bolt, or the like. Suitable materials from which the pad may be fabricated may comprise natural or synthetic rubber, conventional clutch facing material, or the like. However, it will be understood that the surface may be serrated to securely clutch the surface of the arrow 9. A resilient pad 8 is preferred, inasmuch as there will be less tendency of marring or otherwise damaging the surface of the arrow 9.

As shown herein, the retaining device is mounted directly on the handle 10 of a bow, which is indicated generally by the reference character 11. That is, the pivot pin 2 is in the form of a threaded and headed machine screw which is threadingly received by a tapped opening in the bow handle. It will be apparent that this method of mounting would be acceptable only by an archer having a bow manufactured of a metallic or other material having characteristics unaffected by drilling or tapping operations. Metal bows are generally provided with an arrow-rest 12 cast or fastened as an integral part of the bow handle 10. However, arrow-rests very often are made of separate parts that may be glued or otherwise held to the side of the bow handle, and taped with a leather or plastic wrapping.

It may be desirable to some archers to mount the arrow retaining device on a bow by means of a clamping band 13, illustrated in Fig. 4. As shown therein, the band is preferably a closed member which may be conveniently slipped over one end of the bow 11, and spaced an effective distance above the arrow-rest 12. The band is brought into clamping relationship with the bow by means of a screw 14 threadingly engaging a shoulder portion 15 of the band, and revolubly contacting a clamping pad 16 adapted to contact the bow surface without defacing or marring the same. The pivot pin 2 is in the form of a rivet-like member having the end adjacent to the bow staked or otherwise formed to provide a relatively enlarged bearing surface 17 engaging the clamping band 13.

Figs. 5 and 6 illustrate another embodiment of the retaining device taking the form of a completely detachable pawl or wedging cam member 20 having one end tapered to engage with a fulcrum provided by cup-like bosses 21 projecting laterally relative to the clamping band 23. The bosses pivotally support the cam member 20, and permit it to be entirely detachable from the bow structure when not in operating position. As viewed in Fig. 5, the cam member is shown in a tilted position relative to the arrow 9, just before the arrow is released to wedging position, as will hereinafter be described. The bosses 21 may be pierced or stamped in the sheet-metal band 13. The remaining band structure comprises elements similar to the band of the first embodiment, and

includes a clamping screw 24 threadingly engaged therewith.

In the present embodiment the cam member 20 is pivotally positioned in the fulcrum provided by the boss 21, and wedged against the arrow 9 to prevent endwise movement thereof as will be later described. The cam member may be fabricated from any suitable material, such as plastic or metal. As shown, the member has an arrow-engaging surface integral therewith, which may be somewhat bowed to provide the desired wedging forces. The fulcrum bosses 21 are clearly shown in the perspective view of Fig. 6, wherein the cup-like bosses are preferably shown spaced from one another to provide a selection for inserting the cam member in cases of varying arrow diameter.

It may be specifically pointed out with reference to the form of the invention shown in Figs. 1, 2 and 4, that the slot 6 serves a similar purpose to that described for the differently spaced cup-like bosses. The arrow shaft 9 may vary in diameter on the commercial market and the slot 6 permits the device to adjust to the different diameters, thus giving better wedging action under all conditions.

It is now believed that a complete understanding of my invention may be had from a description of the operation of the various embodiments. The embodiment of Figs. 1, 2 and 3 operates with the arrow 9 being positioned on the arrow-rest 12 in the conventional manner with the feather-end nocked to the bow-string 25, and drawn to a partially tensioned position as shown in Fig. 3. It is to be noted that there is no need for drawing the arrow to a full-drawn position; and in fact, this may be very undesirable for safety reasons. Only enough tension is needed on the bow-string that will urge the arrow in a forward direction to provide the desired wedging force. The cam member 1 is normally biased towards the position indicated by the dot-dash lines of Fig. 2 under the influence of the torsional spring 3. As the arrow is drawn back, the archer rotates the cam member about its pivot pin 2 to the wedging position relative to the arrow 9. The arrow is now released and permitted to move forwardly under the influence of the nocked bow-string to complete the wedging action. The entire bow and arrow unit may be carried in this position for an indefinite period. The unit may be carried with the arrow pointed in any direction without danger to the archer or nearby persons or objects, as the arrow will be securely wedged under conditions of relatively minor urging forces.

To release the wedging action of the retaining device, the archer need only grasp the arrow between his fingers and bring it to full-draw position. Aiming and loosing the arrow from the bow-string is completed in the usual manner. The retaining device automatically will return to its normal operating position shown in the dot-dash lines of Fig. 2 under the influence of the torsional spring 3.

The operation of the embodiment of Figs. 5 and 6 is substantially the same as has been described above in connection with the first embodiment. It is to be noted, however, that the cam member 20 of the present embodiment is normally in detached relationship with the projecting cup-like bosses 21 integral with the clamping band 23. It may be carried on the archer's person, or kept hanging by a string tied to the bow (not shown). The cam member 20 is positioned with its tapered portion positioned in the opening of one of the bosses 21 with the arrow-engaging surface adjacent the tensioned arrow 9. The arrow, which had previously been drawn to a partial biased position, is released to complete the wedging action.

The wedging cam member is released from the arrow in the same manner as previously described. That is, the archer completes a full-draw of the nocked arrow. The member 20 follows this action and becomes detached from the boss 21.

An important feature of the embodiment of Figs. 5 and 6 is that the cam member may be manufactured of a brightly colored material, or of a painted or luminescent material. Thus, when the cam member is detached from the band 23, it may be permitted to fall to the ground and mark the place of shooting. It is a common occurrence for the archer to lose an arrow where there is heavy vegetation. This is especially true when he has missed his quarry during a hunt. The brightly colored, or luminescent, cam member lying on the ground will act as a means by which the archer may orient himself to start his search for the lost arrow over again.

It will be apparent that if the marker feature is not desired, the cam member may be loosely tied to the bow. Another feature of this embodiment is the fact that it may be expendible because of its less costly manufacture when fabricated from plastics, or the like.

It will be noted that the pin 2 shown in Figs. 1, 2 and 4 and the band 23 shown in Fig. 5 share a common function, and that is that they serve as a fixed abutment against which the wedging means is pressed as the said means is forced forwardly by the arrow under the bias of the bowstring. This abutment prevents upward movement of the wedging means along the longitudinal axis of the bow.

I claim:

1. A device for temporarily retaining an arrow shaft in nocked and ready position on a bow wherein the arrow is biased in a forward direction by the bow string, said device including a fixed arrow rest positioned on the side of said bow, a fixed abutment member positioned on the side of said bow above said arrow rest, unattached wedging means directed rearwardly of the bow and positioned between said arrow rest and said abutment for wedging engagement with the shaft and abutment, said abutment member preventing upward movement of said wedging means along the longitudinal axis of said bow, said wedging means having a friction surface engaging said arrow shaft, the distance between said abutment and said arrow shaft positioned on said rest being less than the maximum depth of said wedging means whereby the friction surface of said wedging means will be urged into clamping engagement with said arrow shaft under the forward bias of the bow string, said unattached wedging means moving rearwardly and dropping out of the path of the arrow shaft when the arrow is drawn rearwardly as the bow is drawn from ready position to full draw.

2. A device for temporarily retaining an arrow shaft in nocked and ready position on a bow wherein the arrow is biased in a forward direction by the bow string, said device including a fixed arrow rest positioned on the side of said bow, a fixed abutment member positioned on the side of said bow above said arrow rest, movable wedging means directed rearwardly of said bow and positioned between said arrow rest and said abutment, said abutment member preventing upward movement of said wedging means along the longitudinal axis of said bow, said wedging means having a friction surface engaging said arrow shaft, the distance between said abutment and said arrow shaft positioned on said rest being less than the maximum depth of said wedging means whereby the friction surface of said wedging means will be urged against said arrow under the forward bias of the bow string, and means for automatically moving said wedging means out of the path of the arrow when the arrow shaft is drawn rearwardly as the bow is moved from ready position to full draw and for so holding said wedging means until it is manually reset.

3. A device for temporarily retaining an arrow shaft in nocked and ready position on a bow wherein the arrow is biased in a forward direction by the bow string, said device including a fixed arrow rest positioned on the side of said bow, a fixed pivot member positioned on the side of said bow above said arrow rest, rearwardly directed wedging means rotatably mounted on said pivot and having a friction surface engaging said arrow shaft,

the distance between said pivot member and the arrow shaft positioned on said arrow rest being less than the maximum depth of said wedging means whereby the friction surface of said wedging means will be urged against said arrow under the forward bias of the bow string, and spring means automatically rotating said wedging means out of the path of the arrow when the arrow shaft is drawn rearwardly as the bow is moved from ready position to full draw and for so holding said wedging means until it is manually reset.

4. A device for temporarily retaining an arrow shaft in nocked and ready position on a bow wherein the arrow is biased in a forward direction by the bow string, said device including a fixed arrow rest positioned on the side of said bow, a fixed pivot member positioned on the side of said bow above said arrow rest, rearwardly directed wedging means rotatably mounted on said pivot and having a friction surface engaging said arrow shaft, said wedging means having an aperture formed in one end thereof for receiving said pivot member, said aperture being in the form of an elongated slot the major axis of which is inclined forwardly at an acute angle to the axis of the arrow shaft, the distance between said pivot member and the arrow shaft positioned on said arrow rest being less than the maximum depth of said wedging means whereby the friction surface of said wedging means will be urged against said arrow under the forward bias of the bow string, the elongated slot providing adjustment of said wedging means to varying diameters of arrow shaft, and spring means automatically rotating said wedging means out of the path of the arrow when the arrow shaft is drawn rearwardly as the bow is moved from ready position to full draw and for so holding said wedging means until it is manually reset.

5. A device for temporarily retaining an arrow shaft in nocked and ready position on a bow wherein the arrow is biased in a forward direction by the bow string, said device including a fixed arrow rest positioned on the side of said bow, a fixed abutment member positioned on the side of said bow above said arrow rest, said abutment member including a plurality of fulcrum notches, the bottoms of said notches being at varying distances from the arrow rest, an unattached wedging means directed rearwardly of said bow and positioned between said arrow shaft and said abutment for wedging engagement with the shaft and abutment, said wedging means having a fulcrum projection at one end for engaging a selected fulcrum notch and a friction surface engaging said arrow shaft, the distance between the bottom of said fulcrum notch and said arrow shaft positioned on said arrow rest being less than the maximum depth of said wedging means whereby the friction surface of said wedging means will be urged against said arrow under the forward bias of the bow string, said wedging means automatically moving rearwardly and falling out of the path of the arrow shaft when the arrow is drawn rearwardly as the bow is drawn from ready position to full draw.

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