United States Patent

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[54] **BOW QUIVER**
7 Claims, 3 Drawing Figs.

[52] **U.S. Cl.** **224/1-B**
[51] **Int. Cl.** **F41c 33/00**
[50] **Field of Search** 124/24, 23, 30; 224/1.5

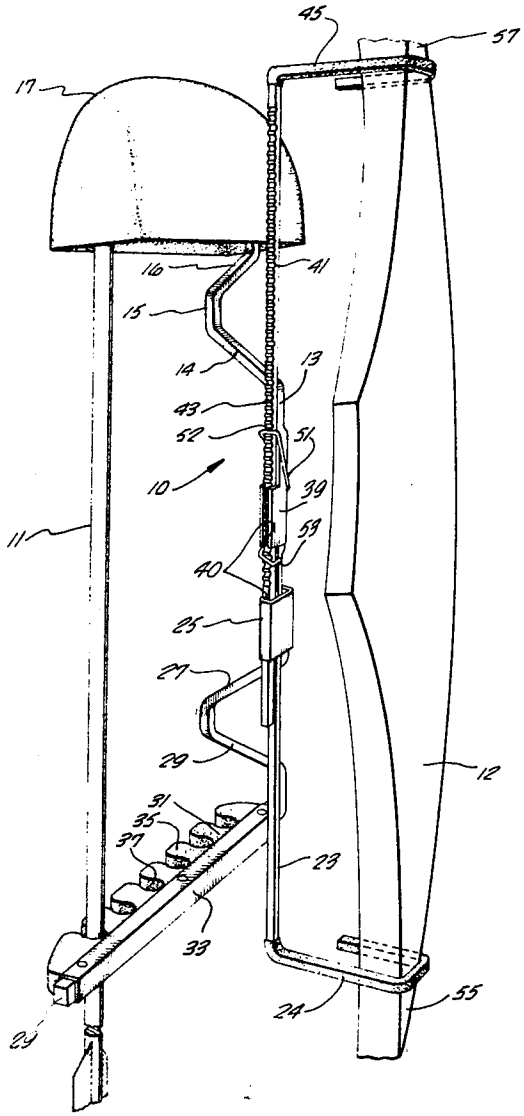
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ABSTRACT: A bow quiver is described having an elongated frame having a quiver hood attached to the one end of the frame and an arrow clip attached to the other end thereof. Mounting means including a fixed arm and a slide arm are provided having clamps located at their ends for gripping the tapered portions of the bow. A spring biased latch mechanism is connected to the frame and is adapted to permit the slide arm to move in the direction to shorten the effective length between the clamps to enable the clamps to be wedged onto the tapered portion of the bow. The latch mechanism is further constructed to lock the slide arm with respect to the frame to maintain the clamps in the wedged position.

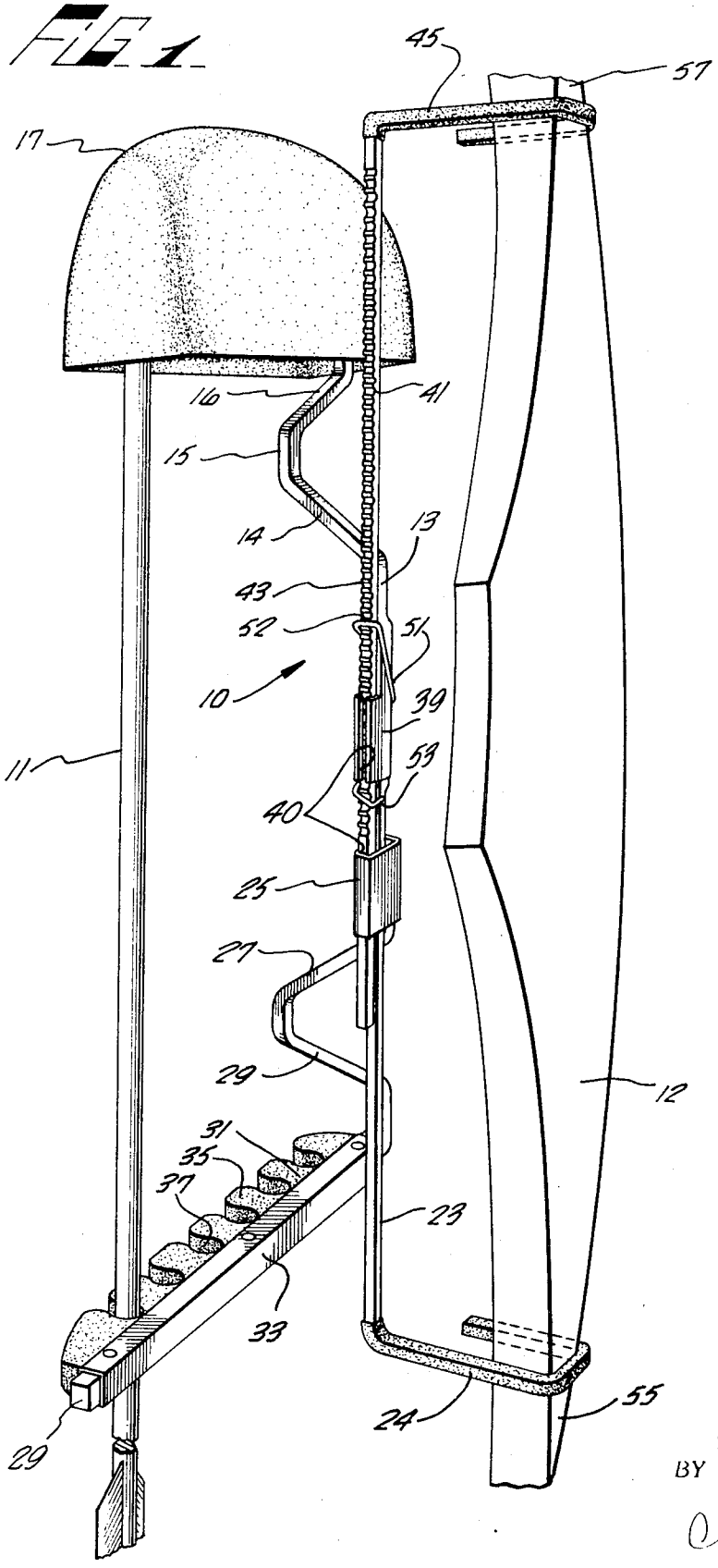


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SHEET 1 OF 2

FIG 1



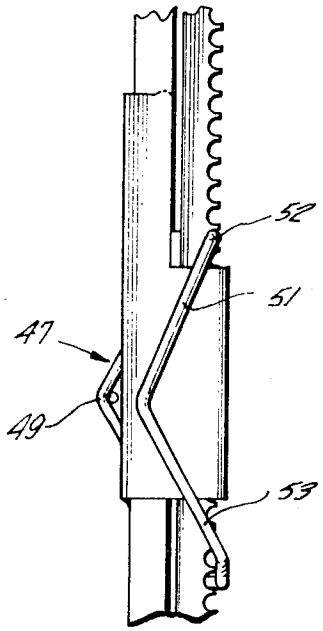


FIG 3

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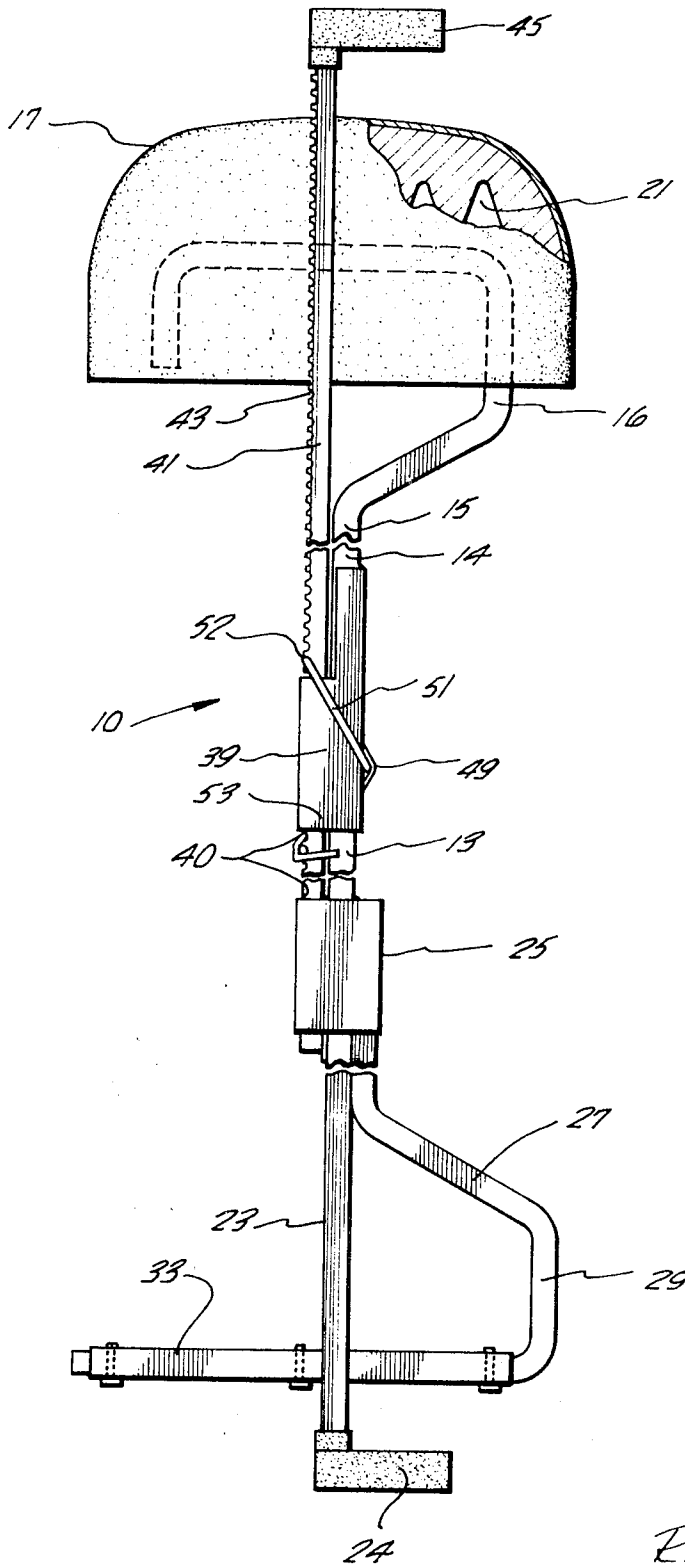


FIG 2

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BOW QUIVER

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to bow quivers for supporting arrows, and more particularly to bow quivers that are mmounted directly on the bows.

2. Description of the Prior Art

Bow quivers are carried by archers in a variety of modes. One mode is a quiver of the type suspended from the archer's belt, or so called side quiver. Other quivers, similar to the side quiver, are suspended over the archer's shoulder or back.

A problem encountered with such quivers is that they do not provide a convenient and quick access to the arrows for rapid sequential use. Even if rapid firing is not utilized, the various arm movements required in reaching to the side or over the shoulder to fetch the arrows are cumbersome and annoying.

To provide for rapid firing, bow quivers have been developed that are secured directly to the limbs of a bow at a location adjacent the firing position to enable the arrows to be easily and quickly removed therefrom. Such a bow mounted quiver is of a weight and construction that does not upset the balance of the bow nor interfere with the casting of the arrows. The conventional bow mounted quiver usually includes a pair of clamps that is adapted to engage the tapered portions of the bow at both ends of the handle. The quiver is then supported at a position to the one side of the bow so as not to interfere with the archer's line of sight. However, a serious problem with these bow mounted quivers is that the effective length between their clamps are not easily adjustable to enable the quivers to be readily mounted on the various types of bows. Even when the proper effective length is determined, the attaching process is cumbersome and unwieldly. Moreover, these prior bow mounted quivers are limited as to the length that the connecting arms can be extended which does not permit these quivers to extend over bows having large handle portions. As a result, the utilization of these quivers is severely limited.

SUMMARY OF THE INVENTION

This invention obviates the above-mentioned shortcomings by providing a bow mounted quiver that is easily adjustable and can be readily mounted on the limbs of any type or size bow. The bow mounted quiver in accordance with the present invention includes a frame assembly comprising an elongated frame having a quiver hood attached to the one end of the frame and an arrow clip attached to the other end thereof. The bow quiver further comprises mounting means for securing the frame assembly to the limbs of a bow. The mounting means includes a first arm formed at the other end of the elongated frame, having a U-shaped clamp for gripping the tapered portion of the bow. The mounting means further includes a second arm slidably connected to the elongated frame, having a U-shaped clamp for gripping the other tapered portion of the bow. The slide arm further includes a plurality of notches longitudinally formed thereon. A spring biased latch mechanism is pivotally mounted on the frame and is adapted to engage the notches of the slide arm to maintain the arm in a fixed relationship to the frame. The latch mechanism is constructed in a manner to permit the slide arm to travel in a downward direction and shorten the effective length between the respective clamps of the arms. The latch mechanism is further constructed to prevent the slide arm from traveling in the opposite direction to lengthen the effective length between the respective clamps.

An important advantage of such a device is that it can be readily mounted onto the bow by positioning the clamps over the tapered portions of the bow and then shortening the effective length therebetween by moving the slide arm along the frame until the clamps are tightly wedged onto the tapered portions of the bow. The device is then maintained in this position by the latch mechanism.

Thus the invention fulfills the primary object by providing a bow mounted quiver that is easily adjustable and can be readily mounted on various types of bows.

The features of the present invention which are believed to be novel are set forth with particularity in the appended claims. The present invention, both as to its organization and manner of operation, together with further objects and advantages thereof, may be understood by reference to the following description, taken in connection with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the bow quiver, in accordance with the present invention, attached to a bow;

FIG. 2 is a side elevational view of the bow quiver; and

FIG. 3 is an enlarged fragmentary view of the latch mechanism in accordance with the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings, FIGS. 1 and 2 show a bow quiver, generally indicated by arrow **10**, carrying a plurality of arrows **11**. The bow quiver **10** is adapted to be mounted on the limbs of a bow **12** and includes a frame assembly comprising an elongated rod **13** having one end bent at an angle at **14** with the portion **15**, bent at a complementary angle, forming a U-shaped portion **16** lying in a plane parallel to the rod **13**. Extending over and interconnecting the U-shaped portion **16** is a hood **17** which is generally cup-shaped in form and serves to protect the heads of the arrows **11**.

As shown in FIG. **2**, the heads of the arrows **11** are insertable into a plurality of slot **21** located within the hood **17** and are maintained in a spaced relationship thereby.

The other end of the rod **13** forms an attaching arm **23** having a U-shaped clamp **24** formed at the end thereof, lying in a plane normal to the rod **13**.

A bracket **25** is connected to the elongated rod **13** for integrally supporting a rod **27**. The connections can be of any conventional means such as riveting or welding. The rod **27** is bent in the manner shown with its end forming an angled portion **29** lying in the same plane as the U-shaped portion **16**. An arrow clip **31** is connected to the transverse portion of the end **29** by means of a bracket **33**. The arrow clip **31** includes a plurality of fingers **35** formed thereon with a plurality of arrow receiving slots **37** defined therebetween. In the preferred embodiment of the invention, the fingers **35** and the related structure defining the arrow clip **31** are fabricated of resilient material such as rubber, flexible plastic or the like, to facilitate insertion of the arrows **11** and for positive retention thereof until removed for use.

A bracket **39** is also integrally connected to the elongated rod **13** and together with the bracket **25** forms an axial passageway **40** for slidably receiving an elongated slide arm **41**. A plurality of lateral notches are defined on the surface of the slide arm **41** opposite the elongated rod **13**. The outer end of the slide arm **41** forms a U-shaped clamp **45** that lies in a plane normal to the elongated rod **11** and parallel to the plane of the clamp **24**.

As more clearly shown in FIG. **3**, a spring biased latch mechanism **47**, fabricated from a length of metal wire, is pivotally mounted on a flange **49** extending from the one side of the bracket **39**. The latch mechanism **47** includes a U-shaped portion **51** that extends around three sides of the slide arm **41** with the base **52** of the U-shaped portion **51** adapted to engage the notches **43** of the slide arm **41**. The remaining portion of the latch mechanism **47** is bent upwardly from the leg of the U-shaped portions **51** and terminates in a hook portion **53** which is adapted to lie diagonally across the top surface of the notches **43** of the slide arm **41** at the other end of the bracket **39**.

In operation, the mounting the bow quiver **10** upon the limbs of the bow **12**, the slide arm **41** is extended sufficiently to permit the clamps **23** and **45** to extend over the tapered portions **55** and **57** of the bow **12**. The slide arm **41** is then

moved inwardly to shorten the effective length between the clamps 23 and 45 until they are wedged onto the widened portions of the tapered ends 55 and 57. The slide arm 41 is then locked in position by the spring biased latch mechanism 47. Because of the geometry of the latch mechanism 47, when the slide arm 41 moves inwardly to shorten the effective distance between clamps 23 and 45, the U-shaped portion 51 is pivoted outwardly, away from the slide arm 41, with the base 52 riding lightly over the notches 43 of the slide arm 41 to permit the arm to move with little interference. However, the slide arm 41 is not able to move freely in the opposite direction because any force or movement in that direction causes the base 52 located in one of the notches 43 to pivot toward the slide arm 41. In that direction, a normal force is exerted on the respective notch 43 by the latch mechanism 47 to maintain it in a locked position. As a result, the slide arm 41 is prevented from moving in that direction to unwedge the clamps 23 and 45 from the tapered portions 55 and 57 of the bow 12. A small resilient force on the U-shaped portion 51 in the direction of the slide arm 41 is maintained by the biased hook portion 53 which is slidably anchored to the outer surface of the slide arm 41.

To remove the bow quiver 10 from the bow 12, the latch mechanism 47 can be easily disengaged from the slide arm 41 by exerting a small force on the U-shaped portion 51 to disengage the base 52 from the notches 43. Upon such disengagement, the slide arm 41 can then move outwardly until the clamps 23 and 45 are free from the tapered portions 55 and 57 of the bow 12.

Lightweight metal, such as aluminum are preferred production materials for the frame assembly of the bow quiver 10. In addition, the clamps 23 and 45 are preferably coated with an elastomeric material or relatively soft resilient coating to enhance the gripping action of the clamps on the bow and to obviate any damage to the bow itself. These coatings may be applied in any preferred technique such as by dipping.

As can be seen, the bow quiver 10 is provided with mounting means that is easily operable to readily permit the bow quiver to be secured to any type or size of bow desired.

What I claim is:

1. A quiver including a frame assembly having an elongated rod having a quiver hood attached to one end of the rod and an arrow clip attached to the other end thereof, the quiver hood adapted to receive the heads of a plurality of arrows and the arrow clip adapted to support the shaft portions of said arrows, the improvement consisting of mounting means for securing the frame assembly to the upper and lower limb of a bow comprising:

a first arm attached to the frame assembly having a first clamp means for gripping a tapered portion of one of the limbs of the bow;

a second arm slidably connected to said frame assembly and axially movable relative thereto, said second arm having a second clamp means for gripping a tapered portion of the other of the limbs of the bow; and

means for locking said second arm in a fixed relationship with respect to said frame assembly, said locking means comprising a plurality of notches formed on the outer surface of said second arm, and a latch mechanism means pivotally connected to said frame assembly for engaging said notches of said second arm.

2. The invention in accordance with claim 1 wherein said latch mechanism means comprises a U-shaped portion pivotally connected to said frame assembly and extending over said notches of said second arm.

3. The invention in accordance with claim 2 wherein said U-shaped portion is pivoted toward said second clamp means whereby, upon movement of said second arm to shorten the effective length between said first and second clamp means, aid U-shaped portion is pivoted away from said notches to ride over said notches, while upon movement of said second arm in the opposite direction, said U-shaped portion is pivoted toward said notches for engagement therewith.

4. The invention in accordance with claim 3 wherein said latch mechanism means includes spring bias means for urging said U-shaped portion toward said notches.

5. The invention in accordance with claim 4 wherein said spring bias means includes a hook portion integrally connected to the base of one of the legs of said U-shaped portion and extending over said notches of said second arm for engagement therewith.

6. The invention in accordance with claim 5 wherein said latch mechanism means is formed from a single length of wire.

7. The invention in accordance with claim 1 wherein said first and second clamp means includes U-shaped portions adapted to extend over the tapered portions of the limbs of the bow.