US009004054B2

(12) **United States Patent**
Khoshnood

(10) **Patent No.: US 9,004,054 B2**
(45) **Date of Patent: Apr. 14, 2015**

(54) **AUTO ARROW REST**

(71) Applicant: **Bahram Khoshnood**, Cumming, GA (US)

(72) Inventor: **Bahram Khoshnood**, Cumming, GA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 62 days.

(21) Appl. No.: **13/724,593**

(22) Filed: **Dec. 21, 2012**

(65) **Prior Publication Data**

US 2014/0174420 A1 Jun. 26, 2014

(51) **Int. Cl.**
F41B 5/22 (2006.01)
F41B 5/14 (2006.01)

(52) **U.S. Cl.**
CPC ***F41B 5/143*** (2013.01)

(58) **Field of Classification Search**
CPC F41B 5/143
USPC 124/44.5
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,287,868	A *	9/1981	Schiff	124/44.5
4,907,566	A *	3/1990	Klein	124/44.5
5,150,700	A *	9/1992	Troncoso	124/44.5
6,595,195	B1 *	7/2003	Barner et al.	124/44.5
7,963,279	B2 *	6/2011	Harwath et al.	124/44.5

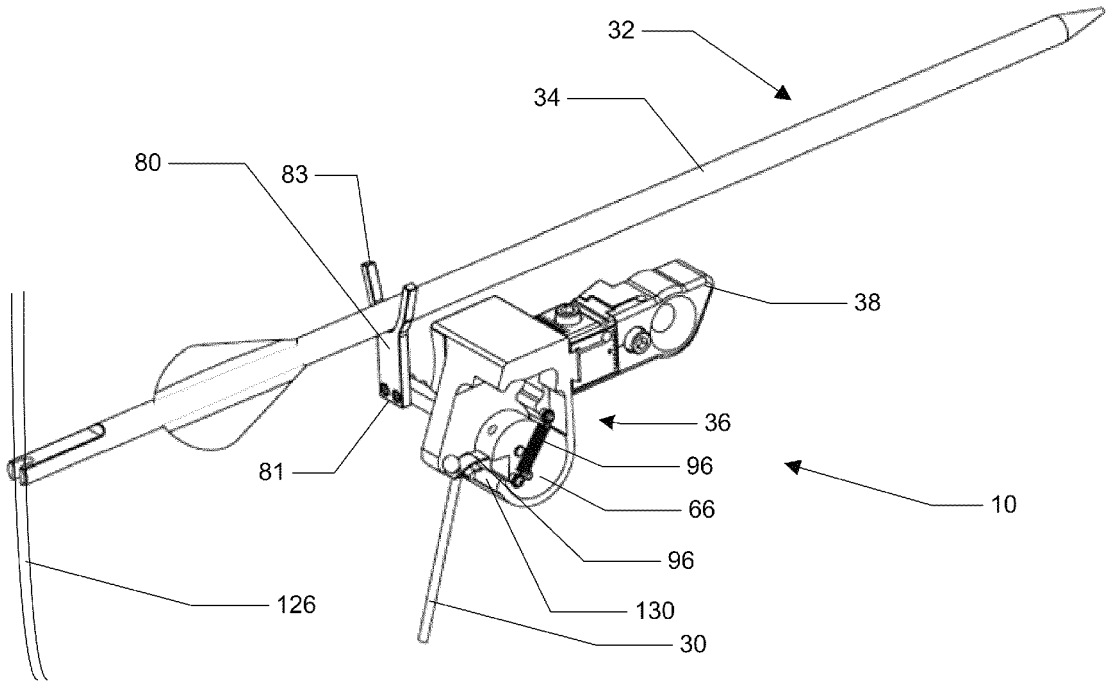
* cited by examiner

Primary Examiner — John Ricci
(74) *Attorney, Agent, or Firm* — Brient Globerman, LLC

(57) **ABSTRACT**

An arrow rest for supporting an arrow on an archery bow. In various embodiments, the arrow rest includes an over-center spring that is operatively coupled to a body of the arrow rest and a rotatable cam received in the arrow rest body. The rotatable cam is rotationally fixed to an arrow launcher. The over-center spring biases the arrow launcher into a first loading position when the spring is in a first position on one side of a central axis about which the cam rotates, and into a second launching position when the spring moves to an opposite side of the cam central axis. A release mechanism is configured to move the arrow launcher from the second, launching position to the first, loading position when an arrow is fired from the bow, but will not move the arrow launcher to the first, loading position if the bow is let down.

19 Claims, 7 Drawing Sheets



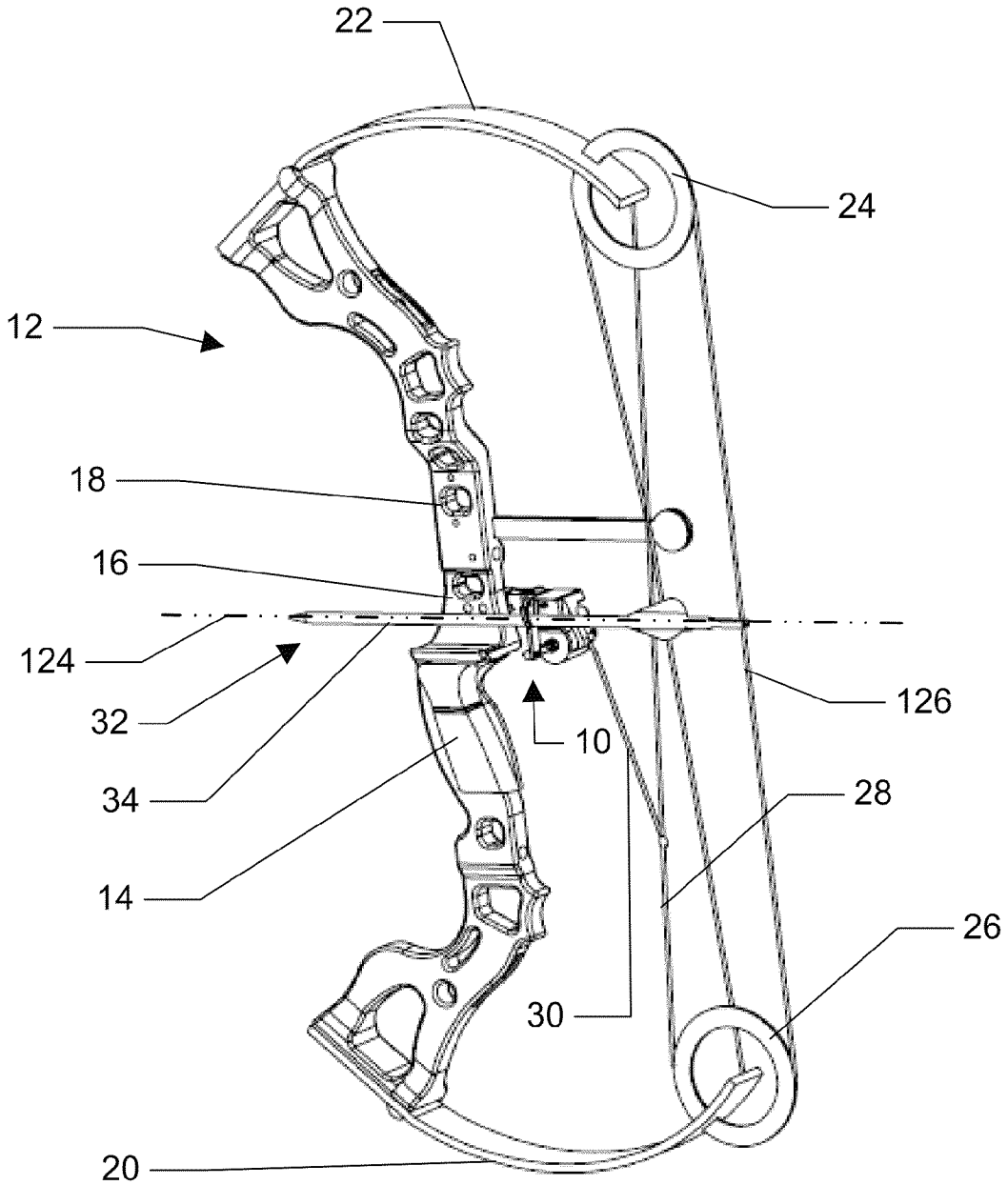


FIGURE 1

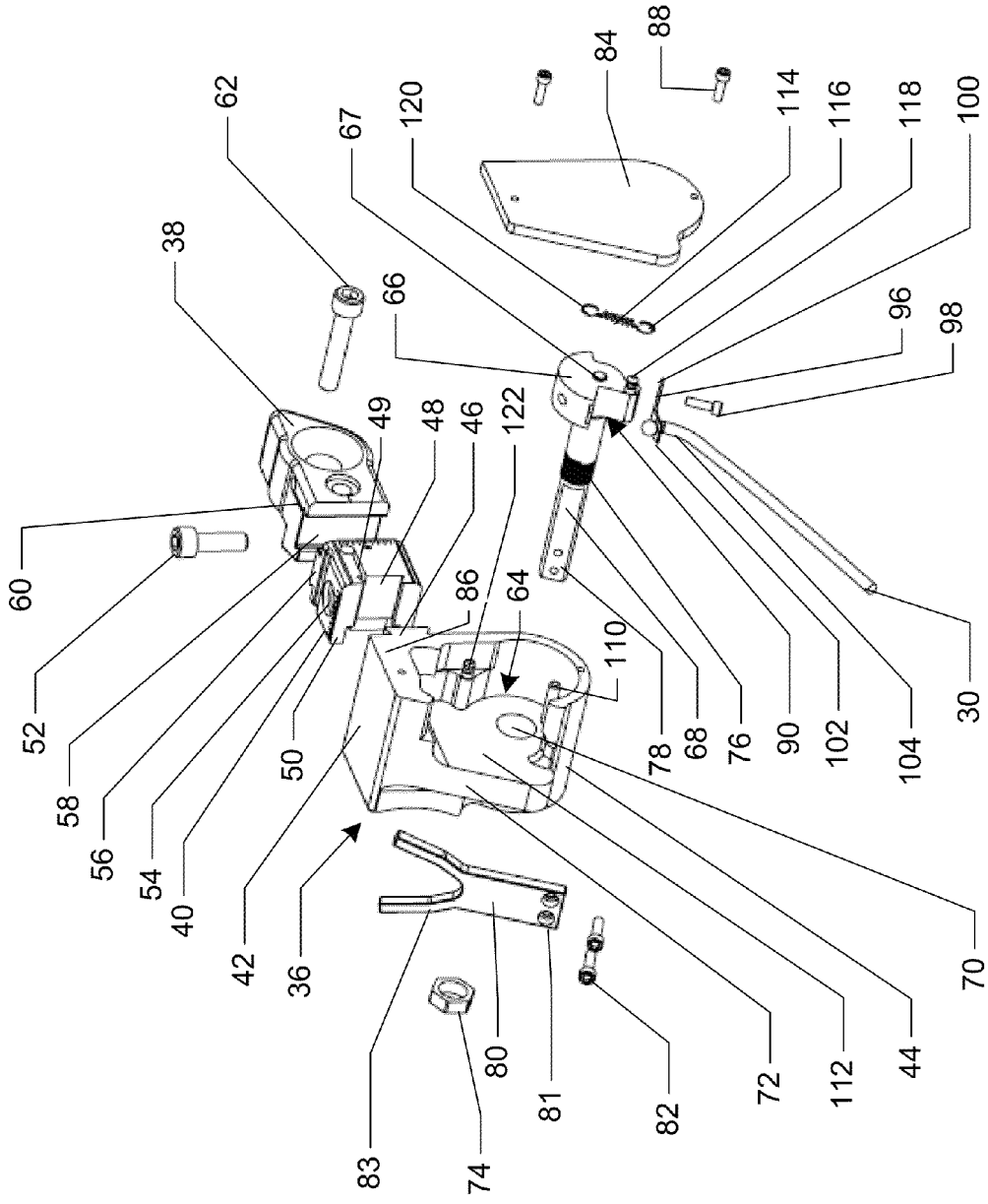

62
67
120
84
88
114
116
118
100
38
66
96
98
49
48
46
122
60
86
64
110
52
58
56
54
40
50
78
68
76
90
102
104
30
42
36
83
74
80
81
82
72
112
44
70

FIGURE 2

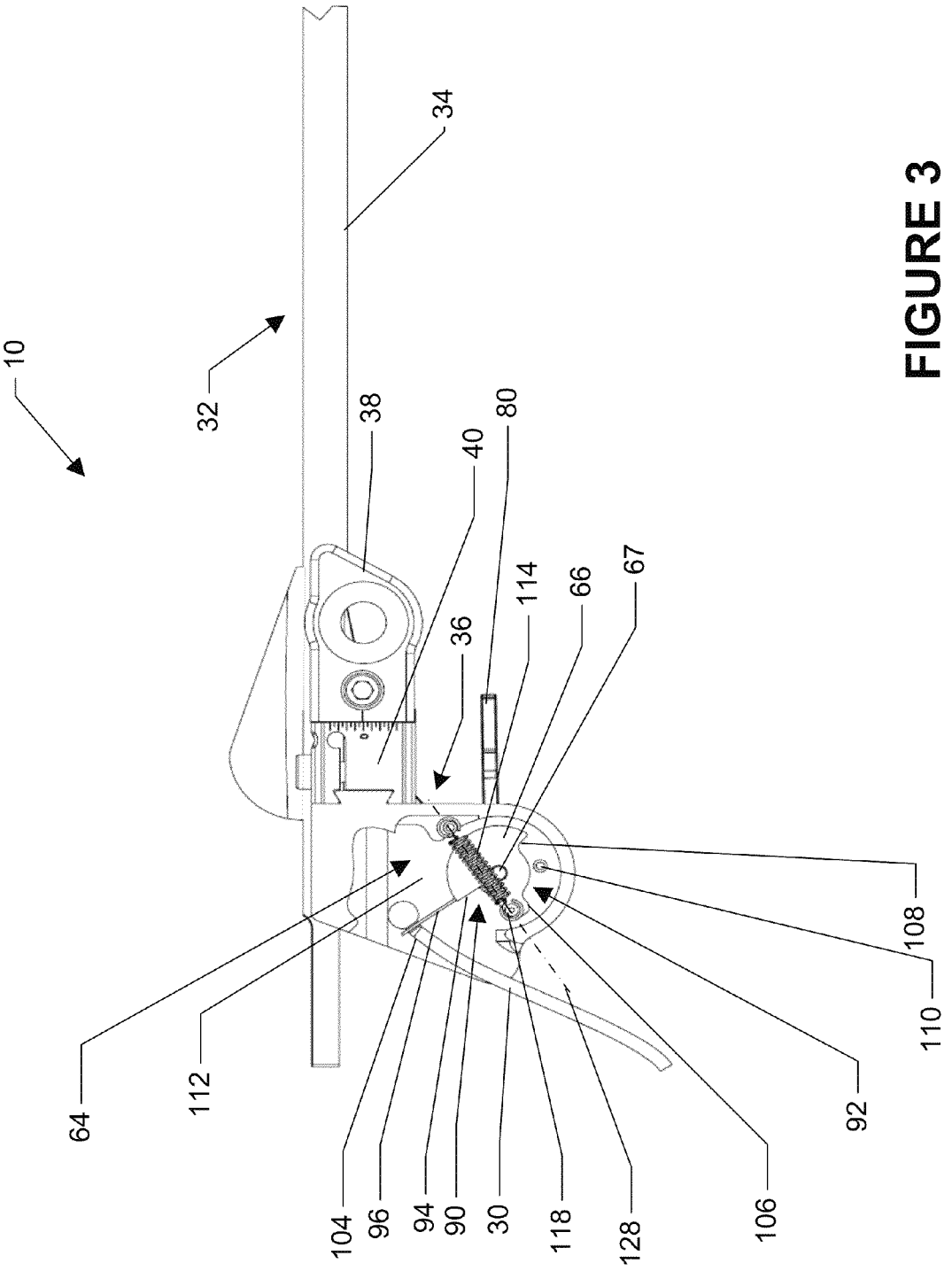

10
32
34
38
40
80
114
66
67
36
64
112
104
96
94
90
30
118
128
106
92
110
108

FIGURE 3

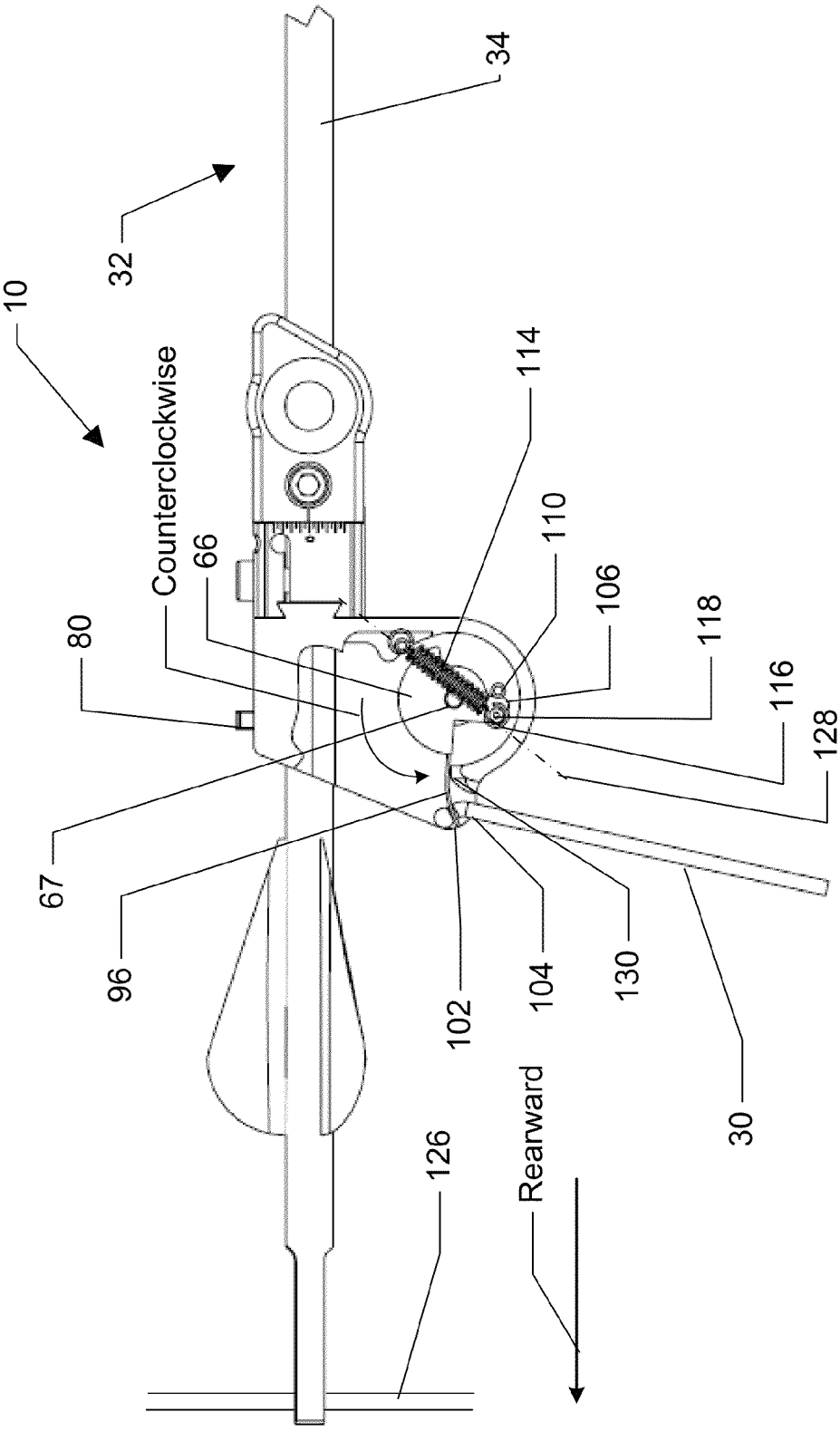

34
32
10
Counterclockwise
66
114
110
106
118
80
116
128
67
96
102
104
130
30
126
Rearward

FIGURE 4

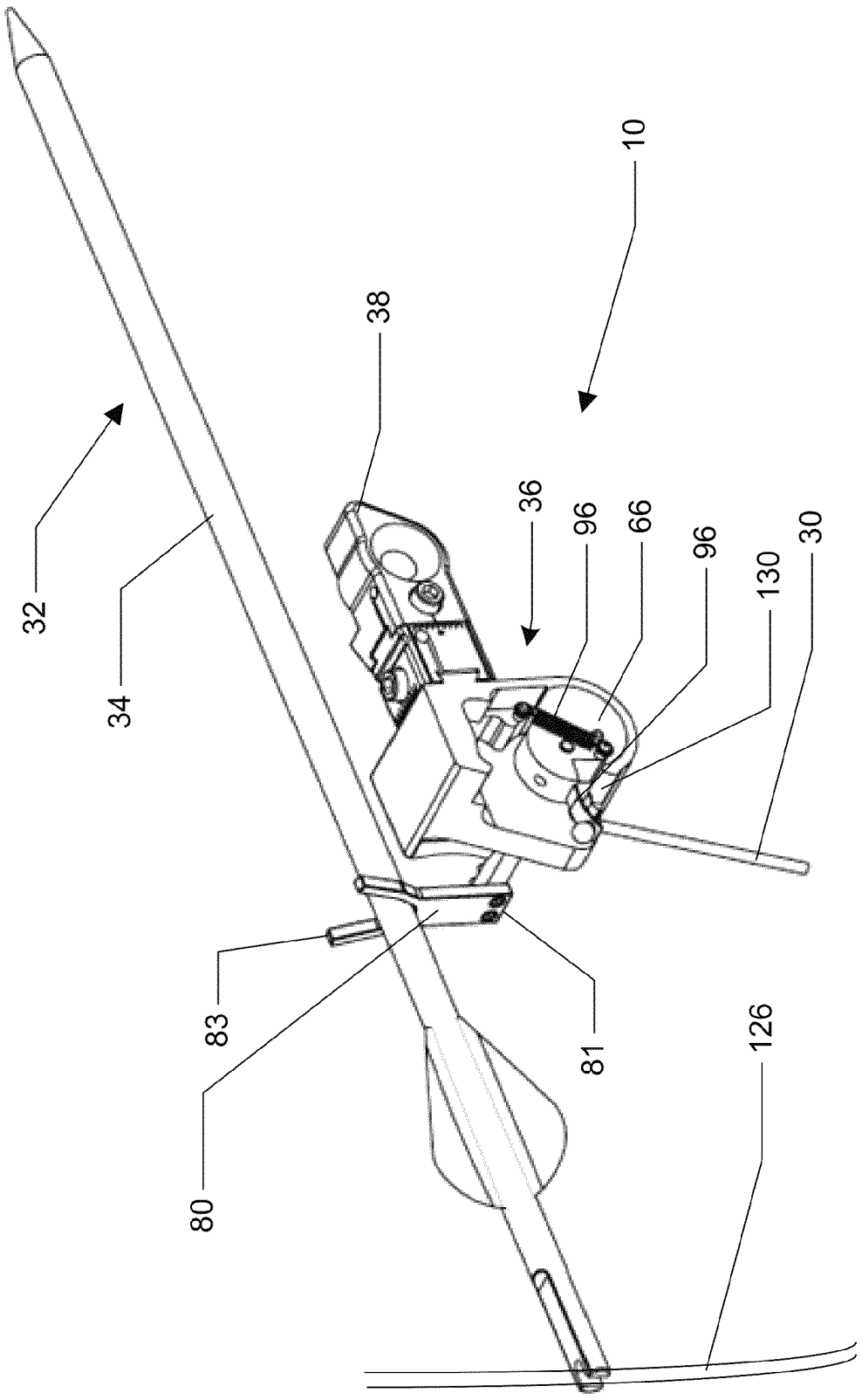


FIGURE 5

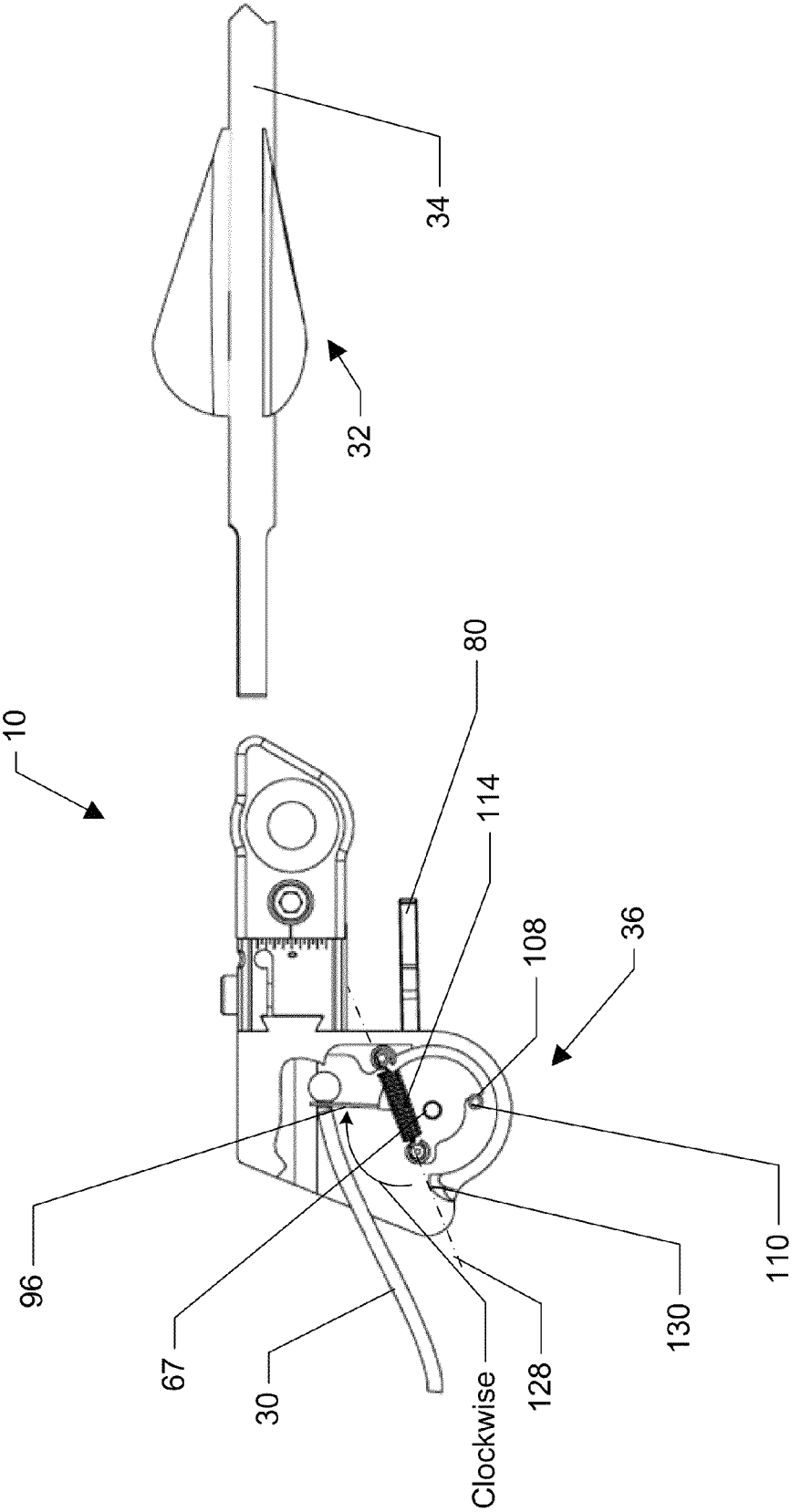


FIGURE 6

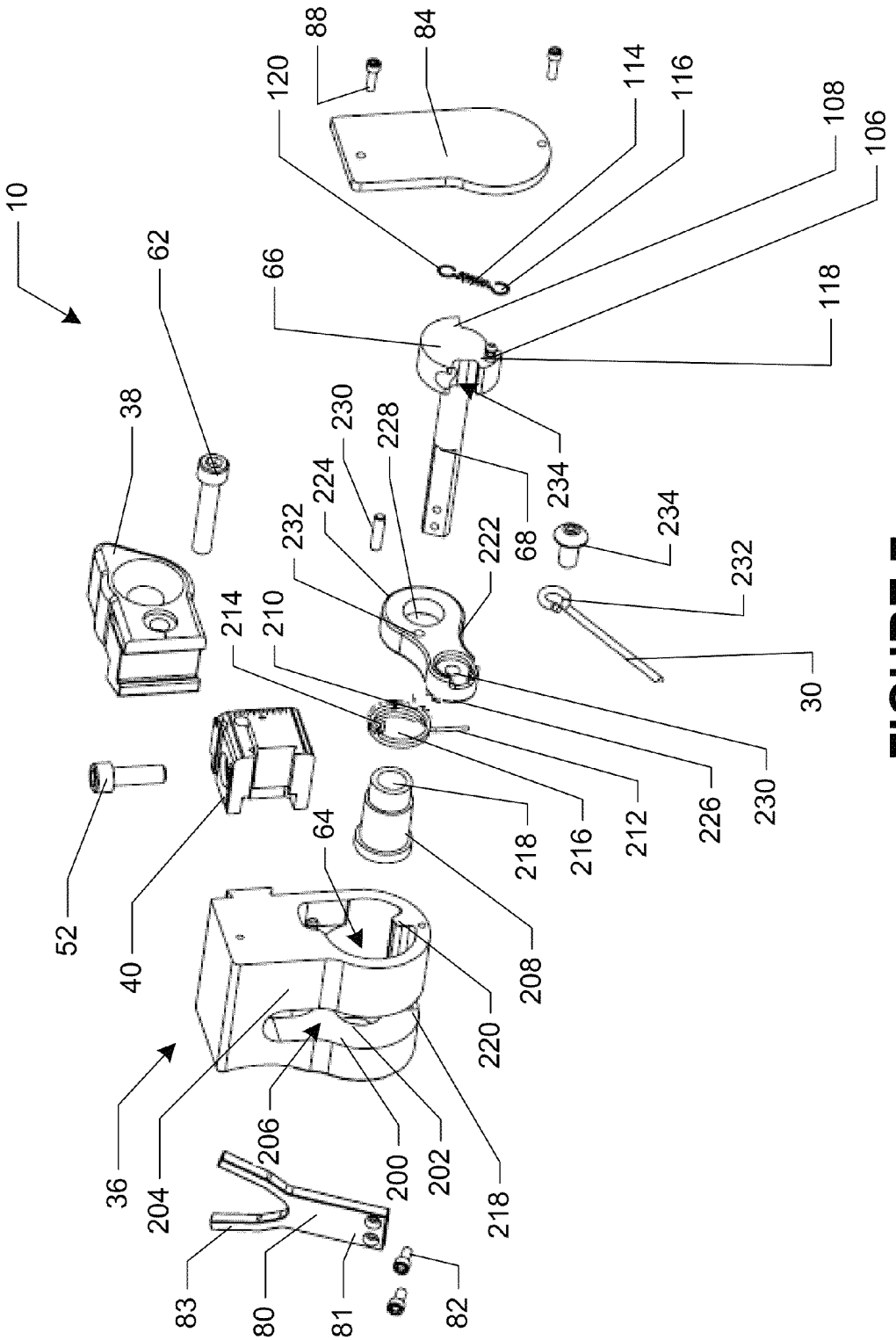

10
62
38
52
40
36
204
206
200
202
218
220
208
64
218
216
212
226
230
214
210
232
224
230
228
222
68
234
234
232
30
66
118
108
106
114
116
120
88
84
83
80
81
82

FIGURE 7

AUTO ARROW REST

BACKGROUND

Arrow rests are used in combination with a bow to support an arrow during draw of the bow's bowstring. Because of an arrow's fletching, arrow rests can interfere with the flight of an arrow as the arrow passes the arrow rest by coming into contact with the fletching of the arrow. Accordingly, there is a need for improved arrow rests that address this issue.

SUMMARY

An arrow rest for supporting an arrow that is in a launching position on a bow, according to particular embodiments, comprises an arrow launcher and an arrow launcher movement mechanism. In various embodiments, the arrow launcher is adapted to be moved between: (1) a first position in which the arrow launcher is in a loading position; and (2) a second position in which the arrow launcher is in a launching position. In particular embodiments, the arrow launcher movement mechanism is configured to: (1) move from a first position where the arrow launcher is in the second launching position to a second position where the arrow launcher is in the first loading position in response to a user firing the bow, and (2) not move between the first position to the second position in response to a user letting down the bow without firing the arrow.

An arrow rest for supporting an arrow that is in a launching position on a bow, according to various embodiments comprises a body, a generally cylindrical cam that is configured to rotate with respect to the body, a launcher rotatably mounted adjacent the cam so that rotation of the cam causes the launcher to rotate, a locking mechanism operatively coupled to the cam; and a release mechanism operatively coupled to the cam, the release mechanism configured to release the locking mechanism. In particular embodiments, the locking mechanism is configured to move between: (a) a first position that maintains the launcher in a first, loading position prior to the arrow being loaded in the arrow rest, and (b) a second position that maintains the launcher in a second, launching position so that the launcher supports a shaft of the arrow when the arrow is in the launching position. In particular embodiments, the locking mechanism maintains the launcher in the second position if the arrow is released from the launching position without firing the arrow from the bow. In various embodiments, the release mechanism is configured to move the locking mechanism from the second position to the first position in response to the arrow being fired.

An arrow rest for supporting an arrow that is in a launching position on a bow, according to various embodiments, comprises a cam that is configured to rotate about a central axis; a launcher rotatably mounted adjacent the cam so that rotation of the cam causes the launcher to rotate; a first spring having a first end and a second end, wherein the spring second end is operatively coupled to the cam; and a second spring having a first end operatively coupled to the cam and a second end configured to be coupled to the bow. In particular embodiments, the first spring biases the cam into: (1) a first position where the launcher is in a first, loading position; and (2) a second position where the launcher supports the arrow when the arrow is in the launching position. In various embodiments, the second spring is configured to move the cam from the second position to the first position when the arrow is fired from the bow.

BRIEF DESCRIPTION OF THE DRAWINGS

Having described various embodiments in general terms, reference will now be made to the accompanying drawings, which are not necessarily drawn to scale, and wherein:

FIG. **1** is a perspective view of a first embodiment of an arrow rest on a bow.

FIG. **2** is an exploded perspective view of the arrow rest of FIG. **1**.

FIG. **3** is a side view of the arrow rest of FIG. **1** in a first loading position.

FIG. **4** is a side view of the arrow rest of FIG. **1** in a second launching position.

FIG. **5** is a perspective view of the arrow rest of FIG. **1**.

FIG. **6** is a side view of the arrow rest of FIG. **1** after an arrow has been fired from the bow.

FIG. **7** is an exploded view of a second embodiment of an arrow rest.

DETAILED DESCRIPTION OF VARIOUS EMBODIMENTS

Various embodiments will now be described more fully hereinafter with reference to the accompanying drawings, in which various relevant embodiments are shown. The invention may, however, be embodied in many different forms and should not be construed as limited to the embodiments set forth herein. Rather, these embodiments are provided so that this disclosure will be thorough and complete, and will fully convey the scope of the invention to those skilled in the art. Like numbers refer to like elements throughout.

An arrow rest **10** according to a particular embodiment is shown in FIGS. **1-6**. Referring in particular to FIG. **1**, the arrow rest **10** is shown attached to a bow **12**. The bow **12** has a grip **14**, an arrow shelf **16**, a sight window **18**, a lower limb **20**, an upper limb **22**, an idler wheel **24**, a cam **26** and a bow string **28**. The arrow rest **10** is coupled to the bow **12** proximate the arrow shelf **16** and is operatively coupled to the bow string **28** via a string **30**. An arrow **32**, when loaded on the bow **12**, has an arrow shaft **34** that is received and supported by the arrow rest **10**.

Referring to FIG. **2**, the arrow rest **10** comprises: (1) a body **36**; (2) a mounting bracket **38**; and a coupling assembly **40**. The arrow rest body **36** is coupled to the mounting bracket **38** by the coupling assembly **40**. These elements together form the arrow rest **10** and will be described in greater detail below.

Arrow Rest Structure

Still referring to FIG. **2**, the arrow rest body **36** comprises a first portion **42** and a generally circular second portion **44**. The first portion **42** defines a key **46** that is received in a correspondingly shaped keyway **48** formed in the coupling assembly **40** A slot **49** is formed through the coupling assembly **40** and defines an adjustable keyway portion **50**. A threaded screw **52** is received in the coupling assembly through a bore **54**. In this configuration, the size of the keyway **48** can be adjusted to allow the body's key **46** to slide in the keyway **48** when the screw **52** is loosened, and to maintain the body **36** in a fixed position with respect to the coupling assembly **40** when the screw **52** is tightened. In this way, the body key **46** is slidably received in keyway **48** to allow the user to adjust the horizontal position of the arrow rest with respect to the bow to adjust for windage.

The adjustment assembly **40** is also operatively coupled to the mounting bracket **38** by a key **56** formed on the adjustment assembly and a corresponding keyway **58** formed in the mounting bracket **38**. In this way, the key **56** is slidably received in the keyway **58**. Similar to the connection between

the body **36** and the coupling assembly **40**, a slot **60** is formed through the keyway **58** so that the width of the keyway can be adjusted by loosening and tightening a screw **62**, which causes the slot to open and close. Said another way, by loosening screw **62**, the width of keyway **58** widens thereby allowing the key **56** to slide through the keyway **58**. As a result, the elevation of the arrow rest with respect to the bow **12** can be adjusted by the user. Once an elevation is selected, the screw **62** is tightened thereby creating a press-fit between the keyway walls and the key.

The arrow rest body **36** defines a cavity, generally denoted at **64**, that is configured to receive a generally cylindrical (e.g., cylindrical) cam **66**. It should be understood that the cam **66** may be formed in any suitable shape based on the dimensions and operation of the arrow rest. The cam **66** is coupled to a support member **68** so that the support member rotates with the cam **66**. In various embodiments, the cam **66** and support member **68** may be integrally formed. In other embodiments, the cam **66** may be coupled to the support member **68** by a fastener. In other embodiments, the cam **66** may be operatively coupled to the support member **68** by another suitable structure (e.g. gears) so that when the cam rotates the support member rotates.

The cam **66** is positioned in the body second portion **44** so that the support member **68** passes through a through-hole **70** formed in a wall **72** of the body **36**. The cam **66** is rotatably retained in the body second portion **44** by a nut **74** that is threadably received on a threaded portion **76** of the support member. In this way, the cam **66** is axially fixed in the body **36**, but can rotate with respect to the body **36** about a central axis **67**.

A distal end **78** of the support member **68** is coupled to an arrow launcher **80** that has a first end **81** and a second V-shaped end **83**. The arrow launcher's first end **81** is coupled to the support member **68** by suitable fasteners **82** (e.g., screws, bolts, rivets, weldments, etc.). The arrow launcher **80** has a first end **81**. In this configuration, the arrow launcher is rotationally fixed to the cam **66** through the support member **68**. As a result, when the cam **66** rotates about its central axis **67**, the launcher will rotate as well. In some embodiments, the support member **68** rotates about the cam's central axis **67**. Thus, in these embodiments, the arrow launcher **80** also rotates about the cam's central axis **67**. A cover **84** attaches to a wall **86** of the body **36** to close off the body cavity **50**. Cover **84** can be secured to wall **86** by fasteners **88** (e.g., screws, rivets or any other suitable fastener).

Referring to FIG. **3**, the cam **66** defines a first recessed portion **90** and a second recessed portion **92**. The first recessed portion **90** is defined by a wall **94** on which a leaf spring **96** is attached by a fastener **98** (FIG. **2**), such as a screw, rivet or any other means of fastening the leaf spring to the wall. In particular, a first end **100** of the leaf spring **96** is coupled to the wall **94** (FIG. **3**), and a second end **102** of the leaf spring **96** is operatively coupled to a first end **104** of the string **30**. The second recessed portion **92** defines a first wall **106** and a second wall **108**. The recessed first and second walls **106** and **108** function as stops that interact with a pin **110** formed on an inner body surface **112** to prevent the cam **66** from over rotating in either the clockwise or counterclockwise direction, as explained in greater detail below. For purposes of this disclosure, all references to direction and position are made from the vantage point of the viewer in FIG. **3**.

Referring again to FIG. **2**, an over-center extension spring **114** has a first looped end **116** that is coupled to the cam **66** by a pin **118** formed on the cam, and a second looped end **120** that is coupled to a pin **122** formed on the body inner surface **112**. The cam **66**, the spring **114** together form an over-center locking mechanism whose operation will be explained in further detail below. An over-center spring should be recognized by those skilled in the art as referring to a spring that is attached to a pivoting structure (cam **66**), and is positioned to rotate or translate across a pivot point or center point (cam central axis **67**) as the pivoting structure rotates. An over center spring provides a biasing force upon the pivoting structure in one direction while on a first side of the center point, the biasing force dropping to zero as the spring rotates or translates to the center point, after which the spring provides a biasing force on the pivoting member in the opposite direction on a second side of the center point.

The arrow rest **10** may be attached to the bow **12** (FIG. **1**) in any suitable manner using mounting bracket **38** (e.g., using suitable fasteners such as screws, bolts or clips). When attached to the bow **12**, the arrow rest **10** is adapted to selectively maintain an arrow **32** in a launching position relative to the bow **12**. That is, referring once again to FIG. **1**, when the arrow rest **10** is mounted to the bow **12**, proximate to the arrow shelf **16**, an axis **124** of the arrow is substantially perpendicular (e.g., perpendicular) to a portion **126** of the string **28**.

Exemplary Use

Referring again to FIG. **3**, the arrow rest **10** is shown in a starting position (the first position) where the launcher **80** (FIG. **2**) is down. When in the first position, extension spring **114** is in an initial position where an axis **128** of the spring **114** is positioned above the cam central axis **67**. While in the first position, the extension spring **78** is under slight tension thereby biasing the cam **66** in the clockwise direction. Furthermore, the recess wall **108** prevents the cam **66** from over rotating in the clockwise direction. As illustrated in FIG. **3**, the user can load the arrow **32** onto the bow without the launcher **80** (FIG. **2**) interfering. In particular, the user places the arrow **32** adjacent the arrow shelf **16** (FIG. **1**) and nocks the arrow on the string **126** (FIG. **1**). When the arrow **32** is initially loaded, the arrow shaft **34** may rest on the arrow shelf **16** adjacent the arrow launcher **80**. Thus, when the user draws the bow **12** the arrow launcher **80** rotates into the launching position thereby supporting the arrow shaft **34**. Alternatively, the user may rotate the launcher into the launching position manually or by pulling the string **30**.

Referring to FIGS. **4** and **5**, once the user nocks the arrow and draws the bow by pulling the string portion **126** (FIG. **1**) reward, the bow string **28** is pulled downward toward cam **26** thereby pulling arrow rest string **30** downwardly away from the arrow rest body **36**. Since the string end **104** is coupled to the leaf spring **96**, as string **30** moves downward it causes cam **66** and pin **118** to rotate counterclockwise thereby moving the spring first end **116** away from the spring second end **120** causing the spring axis **128** to move to the opposite side of the cam central axis **67**. Thus, as the cam **66** rotates in the counterclockwise direction, potential energy begins to build up in the spring **114** as the spring first end **116** is pulled apart from the spring second end **120**. Once the spring axis **128** moves past the cam central axis **67**, the potential energy in the spring **114** biases the cam in the counterclockwise direction until the recess first wall **106** abuts against the body pin **110**. In this position (the second position), the arrow launcher **80** is moved to a raised position to support the arrow shaft **34** when the arrow is in a launching position.

As discussed above and still referring to FIG. **4**, cam **66** can only rotate a certain counterclockwise distance as the bow string **126** is drawn to move the arrow into the launching position since the recess' first wall **106** prevents the cam from further rotating as the wall abuts against the body pin **110**. As a result, if the bow string **126** (FIG. **1**) is further drawn

rearward, the string **30** continues to exert a downward force on the leaf spring second end **102** causing the leaf spring **96** to pivot around an edge **130** of the body **36**. Said another way, in particular embodiments, as the leaf spring **96** abuts the body edge **130**, the body edge acts as a pivot point, and the leaf spring's second end **102** rotates counterclockwise about the body edge **130**. As a result, potential energy is stored in the leaf spring as long as the bow is drawn and the arrow remains in the launching position.

Referring to FIG. **6**, the arrow rest **10** is shown substantially immediately (e.g., immediately) after the user fires the arrow **32**. Once the user fires the arrow **32** by releasing the bow string **126** (FIG. **1**), the downward tension on string **30** is immediately released allowing the leaf spring second end **102** to snap upwardly from the stored potential energy and rotate clockwise about body edge **130**. As the leaf spring second end **102** snaps upward, the leaf spring exerts a sufficient amount of torque on cam **66** to overcome the counterclockwise bias that spring **114** exerts on cam **66**. Accordingly, as cam **66** rotates clockwise against the force of spring **114**, the spring's second end moves with pin **118** thereby causing the spring's axis **128** to once again move up and over the cam central axis **67**. Once the spring's axis **128** moves over the cam's central axis **67**, the spring **114** once again biases cam **66** in the clockwise direction so that the launcher **80** moves back into its first loading position since the cam **66** is linked to the arrow launcher **80** through the support member **68**. Thus, the arrow rest of the present system is adapted to move the arrow launcher **80** far enough toward the first, loading position substantially immediately (e.g., immediately) after the arrow **32** is fired so the arrow launcher **80** does not interfere with the flight of the arrow **32** as the bow **12** launches the arrow **32**.

From the above disclosure, one of skill in the art should understand that the spring **114** and the cam **66** function as an over-center locking mechanism that, when in a first position, biases the arrow launcher **80** into a first loading position, and when in a second position, biases the arrow launcher **80** into a second, launching position. Moreover, it should be clear that, in various embodiments, if the user lets down the bow (i.e., releases the potential energy on the bow string **126** without firing the arrow), the locking mechanism will maintain the arrow launcher **80** in the second, launching position since the release mechanism (leaf spring **96**) does not snap back causing the over-center spring to move over-center to bias the cam in the clockwise direction. As such, various embodiments of the present structure result in an arrow rest having an arrow launcher that moves from a first loading position into a second launching position as the bow is drawn. Furthermore, in various embodiments, the present structure's locking mechanism retains the arrow launcher in the second launching position until the arrow is fired from the bow.

ALTERNATIVE EMBODIMENTS

First Alternative Embodiment

Referring to FIG. **7**, a second embodiment of an arrow rest **10** is illustrated. For purposes of clarity and ease of understanding, only the differences between this embodiment and the embodiment illustrated in FIGS. **1-6** will be discussed. Arrow rest **10** has a body **36**, an adjustment assembly **40** and a mounting bracket **38**. The body has a back wall **200** with a hole **202** formed therethrough, a sidewall **204** having a slot **206** formed therethrough, and a cavity **64** defined by the back and the side walls. A bearing sleeve **208** is received through the back wall's hole **202**. A coil spring **210** has a first end **212**, a second end **214** and an opening **216** formed therethrough. The coil spring is received on the bearing sleeve **208** so that the coil spring's first end **212** is received in a vertical elongated blind bore **218** formed in the body's back wall **200**.

A cam **66** having a support member **68** that is rotationally fixed thereto is rotatably received in the body's cavity **64**. The cam **66** has a recess formed therein, where the recess has a first wall **106** and a second wall **108**. When the cam **66** is inserted into the body's cavity **64** so that the support member **68** passes through a hole **218** in the bearing sleeve. A projection **220** that extends radially inward from the body's sidewall **204** is received intermediate the recess' first and second walls **106** and **108**.

An arm **222** has a first end **224** and a second end **226**. A first through-hole **228** is formed in the arm's first end **224**, and a second through-hole **230** is formed in the arm's second end **226**. During assembly of the arrow rest, the arm's first end **224** is placed through the body's slot **206** so that the arm's first hole **228** receives the bearing sleeve **208**. In this position, the coil spring **210** is positioned intermediate the body's back wall **200** and the arm's first end **224**. Additionally, when the arm's first end is properly positioned, the coil spring's second end **214** is received in a blind bore (not shown) formed proximate the arm's first end. A pin **230** is received in a blind bore **232** formed in the arm **222**. The pin **230** is operatively received in a second recess **234** formed in the cam **66**. Because the recess **234** is wider than the diameter of the pin **230**, the arm can rotate over a limited distance without engaging the cam.

A first end **232** of the string **30** is coupled to the arm's second end **226** by a fastener **234** that is received in the second bore **230** formed in the arm's second end **226**. In this way, when the string **30** is pulled downward by the bow string **126**, the arm **222** rotates about the bearing sleeve **208** causing the pin **230** to engage the cam **66**. As the arm is further rotated counterclockwise, the cam **66** is also rotated counterclockwise causing the arrow launcher to move from the first loading position into the second launching position. At the same time, the spring **114** moves from above the cam center to below the cam center. As a result, the spring **114** biases the cam in the counterclockwise direction to maintain the arrow launcher in the launching position. Furthermore, coil spring **210** winds tighter thereby storing potential energy in the spring.

The operation of the first alternative embodiment is essentially the same as that of the embodiment illustrated in FIGS. **1-6** and described above. That is, an over-center spring **114** coupled between the cam **66** and the body functions to maintain the arrow launcher **80** in one of two positions—a loading position and an arrow launching position. Thus, if the user draws down the bow without firing the arrow, the arrow launcher will remain in the second launching position since the over-center spring **114** continues to bias the cam **66** in the counterclockwise direction. If, however, the user fires the arrow **32** from the bow **12**, the coil spring **210** will unwind causing the arm **222** to rotate in the clockwise direction. Because the arm **222** is operatively coupled to the cam **66** by the pin **230**, the momentum of the arm rotating in the clockwise direction will cause the cam to rotate a sufficient amount to move the over-center spring **114** to the other side of the cam center so that the spring **114** biases the cam in the clockwise direction. As a result, the arrow launcher **80** will move from the launching position into the loading position as the arrow is fired. It should be clear from the above disclosure that the coil spring **210** and arm **222** function as a release mechanism similar to the leaf spring in the embodiment illustrated in FIGS. **1-6**.

Second Alternative Embodiment

In a second alternative embodiment, other types of locking mechanisms may be used in place of the over-center spring **114**. For example, the cam **66** may having a spring winding that biases the cam in the clockwise direction. When the user draws the bow string **126**, the cam may turn counterclockwise against the bias of the spring winding until a spring loaded ball in the cam **66** engages with a detent formed in the body. In this way, the spring loaded ball and detent will maintain the cam and arrow launcher in the second launching position until the leaf spring **96** snaps upward to overcome the force exerted by the spring loaded ball in the detent. As soon as the upward force exerted by the leaf spring overcomes the frictional force between the spring loaded ball and detent, the spring winding would cause the cam to rotate in the clockwise direction thereby moving the launcher back into the first loading position.

CONCLUSION

Many modifications and other embodiments of the invention will come to mind to one skilled in the art to which this invention pertains having the benefit of the teachings presented in the foregoing descriptions and the associated drawings. For example, as will be understood by one skilled in the relevant field in light of this disclosure, the invention may take form in a variety of different mechanical and operational configurations. For example, in the embodiments described herein, the body is closed by a cover. In various other embodiments, the body may be open. Additionally, in other embodiments, the arrow launcher may move to the loading position when the bow is drawn down (i.e., the bow is released, but the arrow is not fired). Therefore, it is to be understood that the invention is not to be limited to the specific embodiments disclosed and that the modifications and other embodiments are intended to be included within the scope of the appended exemplary concepts. Although specific terms are employed herein, they are used in a generic and descriptive sense only and not for the purposes of limitation. The description of the above alternative should teach one of skill in the art that many more alternatives exist that can maintain the arrow launcher in the second launching position even if the bow is undrawn.

I claim:

1. An arrow rest for supporting an arrow that is in a launching position on a bow, said arrow rest comprising:

a. a cam that is configured to rotate about a central axis;

b. a launcher rotatably mounted adjacent said cam so that rotation of said cam causes said launcher to rotate;

c. a first spring having a first end and a second end, wherein said spring second end is operatively coupled to said cam, and wherein said first spring biases said cam into:

(1) a first position where said launcher is in a first, loading position, and

(2) a second position where said launcher supports said arrow when said arrow is in said launching position, and

d. a second spring having a first end operatively coupled to said cam and a second end configured to be coupled to said bow, wherein said second spring is configured to move said cam from said second position to said first position when said arrow is fired from said bow.

2. The arrow rest of claim **1**, wherein said second spring is a leaf spring.

3. The arrow rest of claim **1**, wherein said second spring is configured to exert a rotational force on said cam that is larger than the force exerted by said first spring when said cam is in said second position.

4. The arrow rest of claim **1**, wherein said launcher and said cam rotate about a common axis.

5. The arrow rest of claim **1**, wherein

a. said first spring is positioned on a first side of said cam central axis when said launcher is in said first loading position; and

b. said first spring is positioned on a second side of said cam central axis when said launcher is in said second launching position.

6. The arrow rest of claim **1**, wherein said arrow rest is configured to maintain said launcher in said second, launching position when said bow is let down without firing said arrow.

7. The arrow rest of claim **6**, wherein said arrow rest is further configured to allow said arrow launcher to move from said second position to said first position when said arrow is fired from said bow and second spring force exerted on said cam exceeds said first spring force exerted on said cam.

8. An arrow rest for supporting an arrow that is in a launching position on a bow, said arrow rest comprising:

a. a body;

b. a generally cylindrical cam that is configured to rotate with respect to said body;

c. a launcher rotatably mounted adjacent said cam so that rotation of said cam causes said launcher to rotate;

d. a locking mechanism operatively coupled to said cam; and

e. a release mechanism operatively coupled to said cam, said release mechanism configured to release said locking mechanism,

wherein

i. said locking mechanism is configured to move between:

a first position that maintains said launcher in a first, loading position prior to said arrow being loaded in said arrow rest, and

a second position that maintains said launcher in a second, launching position so that said launcher supports a shaft of said arrow when said arrow is in said launching position,

ii. said locking mechanism maintains said launcher in said second position if said arrow is released from said launching position without firing said arrow from said bow, and

iii. said release mechanism is configured to move said locking mechanism from said second position to said first position in response to said arrow being fired.

9. The arrow rest of claim **8**, wherein said locking mechanism further comprises an over-center mechanism.

10. The arrow rest of claim **9**, said over-center mechanism further comprising a spring having:

a. a first end;

b. a second end; and

c. an axis that extends between said first end and said second end.

11. The arrow rest of claim **10**, wherein

a. said cam rotates about a central axis;

b. said spring biases said cam in a first direction about said cam central axis when said locking mechanism is in said first position, and

c. said spring biases said cam in a second direction about said cam central axis when said locking mechanism is in said second position.

12. The arrow rest of claim 11, wherein

a. said cam central axis is substantially perpendicular to said spring axis,

b. when said locking mechanism is in said first position, said spring axis is positioned on a first side of said cam central axis; and

c. when said locking mechanism is in said second position, said spring moves to an opposite side of said cam central axis.

13. The arrow rest of claim 8, said release mechanism comprising a second spring having a first end operatively coupled to said cam.

14. The arrow rest of claim 13, wherein said second spring is a leaf spring.

15. The arrow rest of claim 13, said second spring comprising a first end operatively coupled to said cam and a second end configured to be coupled to said bow, wherein said second spring is configured bias said cam from said second position to said first position when said arrow is fired from said bow.

16. The arrow rest of claim 8, said cam further comprising a first recessed area defining a first wall and a second wall, and a pin that extends through said recess, wherein:

a. when said locking mechanism is in said first position, said recess first wall is adjacent said pin, and

b. when said locking mechanism is in said second position, said recess second wall is adjacent said pin.

17. An arrow rest for supporting an arrow that is in a launching position on a bow, said arrow rest comprising:

a. an arrow launcher adapted to be moved between:

i. a first position in which said arrow launcher is in a loading position; and

ii. a second position in which said arrow launcher is in a launching position;

b. an arrow launcher movement mechanism that is configured to:

i. rotate about a central axis between a first position where said arrow launcher is in said second launching position into a second position where said arrow launcher is in said first loading position in response to a user firing said bow, and

ii. not rotate between said first position to said second position in response to a user letting down said bow without firing said arrow,

c. a cam that rotates about said central axis;

d. a first spring having

i. a first end operatively coupled to said cam;

ii. second end; and

iii. an axis that extends between said first and said second ends of said spring; and

e. a second spring having:

i. a first end operatively coupled to said cam; and

ii. a second end configured to be coupled to said bow, wherein rotation of said cam causes said arrow launcher to rotate.

18. The arrow rest of claim 17, wherein said first spring biases said cam into said cam first position when said first spring is positioned on a first side of said central axis, and said first spring biases said cam into said cam second position when said first spring is positioned on a second side of said central axis.

19. The arrow rest of claim 17, wherein said second spring moves said cam from said cam second position to said cam first position when said arrow is fired from said bow.

* * * * *