An edge protective device for a cam of an archery bow includes an elongated body dimensioned for conforming to a portion of an outer edge of the archery cam having a mounting portion composed of a resilient material for flexing and defining a mounting surface configured for mounting to an external surface of the outer edge of the archery cam and an external surface opposing the mounting surface and includes an extended portion extending from the mounting portion and defines a lip that extends from the second portion and beyond the outer edge of the cam when mounted to the cam.
DEVICE AND METHOD FOR PROTECTING AN ARCHERY CAM EDGE

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. Provisional Application No. 61/049,645, filed on May 1, 2008, which is incorporated herein by reference.

FIELD

[0002] The present disclosure relates to archery and, more specifically, to archery cams and devices and methods for protecting edges of archery cams.

BACKGROUND

[0003] The statements in this section merely provide background information related to the present disclosure and may not constitute prior art.

[0004] The sport of archery has become very popular around the world. A typical compound bow or crossbow includes one or more cams for guiding and directing a force between the bow limbs and the bowstring. A cam for archery includes a bowstring cavity for receiving the bowstring. The mounted cam is often exposed beyond the edge of the archery bow and/or limbs. As such, damage can occur to the expensive working cams of an archery bow during use.

[0005] For instance, in a typical archery use, the archer walks a distance through a rough outdoor environment and often has to climb a tree or tree stand where the archer sits or stands in awaiting a hunting prey. Carrying and holding the bow is often tiring and the hunter often sets or lays down the bow during the walk or while awaiting the prey to rest or to attend to other matters where both hands are required. However, resting or setting the bow on the ground or another surface can result in damage to one of the cams due to the cam being exposed to direct contact with a surface or any other obstacle or object. Damage such as nicks and gouges often occurs to the edges of the cams. While this damage can be purely decorative, it can also be damaging as to negatively affect the performance of the cam and therefore the bow. Damage to an edge of a cam can negatively impact the capture and release of the bowstring from the bowstring cavity.

[0006] As such, there is a need for devices and methods for protecting archery cams from damage during use.

SUMMARY

[0007] The inventor hereof has succeeded at designing devices and methods for protecting the edges of archery cams from damage during use. Some of the disclosed devices can be mounted or assembled on existing cams and others can be integrated into a modified cam design as described herein. Additionally, in some embodiments the protection of the cam can also provide for sound dampening, vibration dampening and include other benefits.

[0008] According to one aspect, an edge protective device for a cam of an archery bow includes an elongated body dimensioned for conforming to a portion of an outer edge of the archery cam having a mounting portion composed of a resilient material for flexing and defining a mounting surface configured for mounting to an external surface of the outer edge of the archery cam and an external surface opposing the mounting surface. An extended portion extends from the mounting portion that extends from the second portion and beyond the outer edge of the cam when mounted to the cam.

[0009] According to another aspect, an archery cam edge protective device includes a first elongated body dimensioned for conforming to a first side portion of an outer edge of the archery cam. The first body has a first mounting portion defining a first mounting surface configured for mounting to an external surface of the first side portion of the outer edge of the archery cam and a first external surface opposing the first mounting surface. The first body also has a first extended portion extending from the first mounting portion and is configured for extending beyond the outer edge of the archery cam when mounted to the cam. A second elongated body is dimensioned for conforming to a second side portion of the outer edge and has a second mounting surface configured for mounting to a second external surface of the outer edge of the archery cam and a second external surface opposing the second mounting surface. The second body includes a second extended portion extending from the second mounting portion configured for extending beyond the outer edge of the archery cam when mounted to the cam. The first and second extended portions are dimensioned for forming a gap there between and about a bowstring cavity defined by the outer edge of the archery cam.

[0010] According to yet another aspect, a cam assembly for an archery bow includes a main body defining an axis for rotation of the cam and a first external surface defining a first outer edge, a second external surface defining a second outer edge, and a bowstring cavity defined about the periphery of the main body and between the first and second outer edges. The assembly also includes at least one elongated body dimensioned for conforming to one of the external surfaces about the defined outer edge of the main body. The elongated body has a mounting portion defining a mounting surface that is configured for mounting about an outer edge of one of the external surfaces of the archery cam. The body also includes an external surface opposing the mounting surface and an extended portion extending from the mounting portion configured for extending beyond the outer edge of the external surface on which the body is mounted.

[0011] According to still another aspect, a method for assembling a cam assembly for an archery bow includes positioning an elongated body about an outer edge of one side of the cam wherein at least a portion of an extended portion of the elongated body extends beyond the outer edge of the cam and attaching the elongated body about an outer surface of the cam.

[0012] Further aspects of the present disclosure will be in part apparent and in part pointed out below. It should be understood that various aspects of the disclosure may be implemented individually or in combination with one another. It should also be understood that the detailed description and drawings, while indicating certain exemplary embodiments, are intended for purposes of illustration only and should not be construed as limiting the scope of the disclosure.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] FIG. 1 is a side perspective view of a compound bow having an upper cam and a lower cam with an edge protective device according to one exemplary embodiment.
FIG. 2 is a side perspective view of a crossbow having a right cam and a left cam, each configured with an edge protective device according to another exemplary embodiment.

FIG. 3 is a bottom perspective view of an archery limb having a split lower limb and a cam with an edge protective device mounted therein according to one exemplary embodiment.

FIG. 4 is a cross-sectional view of an edge of a cam with an edge protective device and a bowstring according to one exemplary embodiment.

FIG. 5 is a cross-sectional view of an edge of a cam with an edge protective device according to another exemplary embodiment.

FIGS. 6A and 6B are cross-sectional side views of an edge of a cam with an edge protective device and a bowstring during insertion and extraction of the bowstring from the bowstring cavity according to one exemplary embodiment.

FIGS. 7A-7F are cross-sectional side views of an edge of a cam with various protective devices according to additional exemplary embodiments.

FIGS. 8A and 8B are cross-sectional side views of the attachment of a cam edge protective device where the cam includes a mounting cavity according to one exemplary embodiment.

FIGS. 9A, 9B, and 9C are top views of an edge of a cam adapted with a cam edge protective device with a bowstring within the bowstring cavity according to three exemplary embodiments.

FIGS. 10A-10F are various views of cams configured with and for a cam edge protective device and the operation of methods of protecting according to various exemplary embodiments.

It should be understood that throughout the drawings, corresponding reference numerals indicate like or corresponding parts and features.

DETAILED DESCRIPTION

The following description is merely exemplary in nature and is not intended to limit the present disclosure or the disclosure's applications or uses.

Before turning to the figures and the various exemplary embodiments illustrated therein, a detailed overview of various embodiments and aspects is provided for purposes of breadth of scope, context, clarity, and completeness.

In some embodiments an edge protective device for a cam of an archery bow includes an elongated body dimensioned for conforming to a portion or all of an outer edge of the archery cam. The elongated body can include a portion adapted to a portion of the outer circumference of the cam such as proximate to the edge of the cam adjacent to and partially forming the bowstring cavity. The elongated body includes a mounting portion composed of a resilient material for flexing and defining a mounting surface. The mounting portion is configured for mounting to an external surface of the outer edge of the archery cam. The elongated body also includes an external surface opposing the mounting surface.

As noted, the elongated body is elongated in that it has a substantial length for mounting to a substantial portion of the outer edge and/or circumference of the archery cam. The elongated body can be formed as a continuous straight body or can be formed into an arc substantially similar to an arc defining the outer edge of the archery cam for conforming to and with the circular outer edge of the cam and about the surface of one side of the cam. The elongated body can also include, in some embodiments where the cam is adapted for receiving the edge protective device, one or more protrusions that extend substantially perpendicular from a portion of the mounting surface. This protrusion is configured for insertion into a mounting cavity defined as a feature of the archery cam. For example, the archery cam can include a defined slot about one or both surfaces and parallel to the outer edge of the cam. In such cam arrangements, the protrusion can extend substantially along a full length of the elongated body such that the protrusion can be inserted into the cam slot. In other embodiments where the cam includes one or more mounting holes or similar mounting features, the protrusions are spaced apart along the mounting surface of a full length of the elongated body. Of course, one skilled in the art will also recognize that the cam can also include projections for mounting the edge protective device wherein the elongated body can include a mounting hole or cavity that corresponds to the cam projections for aiding in the attachment of the edge protective device to the cam.

An extended portion of the elongated body extends from the mounting portion and defines a lip. The lip of the extended portion of the elongated body extends from the second portion and beyond the outer edge of the cam when the edge protective device is mounted to the cam.

The lip can be of various designs and dimensions. For example, in one embodiment the lip is dimensioned for extending perpendicularly from the extended portion and the mounting surface and extending substantially over a portion of the bowstring cavity defined on the outer edge of the archery cam. The lip can define one or more partially or fully contoured free ends, can have a substantially contiguous body, have a straight edge or can include a plurality of teeth such as serrations. The lip can be configured to flex its free end downward for allowing a bowstring to be received into the bowstring cavity and upward for allowing the bowstring positioned within the bowstring cavity to exit the bowstring cavity. In yet another embodiment, the lip includes a bowstring cavity portion that extends from the extended portion for protecting a portion of a surface of the bowstring cavity. This can be a partial extended portion for a partial protection or can be a full extension across the entire width and surface of the bowstring cavity portion for protecting an entire width of the bowstring cavity from one outer edge to an opposing outer edge of the cam. In such other embodiments, the elongated body can also include both first and second extended portions such that the second extended portion extends outwardly from lip and from the opposing outer edge generally parallel to the first extended portion.

The elongated body can also include a shoulder adapted for extending over a portion of the outer circumference of the edge of the cam. In such embodiments, the shoulder can be adapted for absorbing shocks or other contact with external foreign items and directly protecting the cam edge. However, in other embodiments such a cam edge protection can be performed by the structure as described herein with a shoulder per se by extending beyond the outer edge of the cam and/or by the perpendicular lip that extends towards the bowstring cavity and in some cases extends over a portion of the bowstring cavity.

Of course one skilled in the art will understand that since the cam has two sides and two edges forming the bowstring cavity about the outer circumference, there can be both
a first and second elongated bodies, one for positioning on each side surface of the cam body and for protecting portions of the both opposing edges of the cam. One or both of the elongated bodies can be composed of a rigid material or a resilient material for flexing and absorbing contact with external features. One or both of the elongated bodies can include perpendicular lips that extend from its side and edge of the cam and in the direction of the other side or mounting surface. In fact, where there are two elongated bodies, one on each side, the two lips can extend to cover the two edges of the bowstring cavity or can extend over a portion or substantially all the bowstring cavity. The two lips can be dimensioned to form a gap to allow for the passage of the bowstring there between for being received into and to exit from the bowstring cavity during operation of the bow.

[0032] Various cam edge protectors as described herein can be installed permanently on a cam, can be installed to be removed and replaced on a cam, or can be installed on an existing cam. In one exemplary embodiment, an archery cam edge protective device includes a first elongated body dimensioned for conforming to a first side portion of an outer edge of the archery cam. The first body has a first mounting portion defining a first mounting surface configured for mounting to an external surface of the first side portion of the outer edge of the archery cam and a first external surface opposing the first mounting surface, and a first extended portion extending from the first mounting portion configured for extending beyond the outer edge of the archery cam when mounted to the cam.

A second elongated body is dimensioned for conforming to a second side portion of the outer edge and has a second mounting surface configured for mounting to a second external surface of the outer edge of the archery cam and a second external surface opposing the second mounting surface, and a second extended portion extending from the second mounting portion configured for extending beyond the outer edge of the archery cam when mounted to the cam. The first and second extended portions are dimensioned for forming a gap there between and about a bowstring cavity defined by the outer edge of the archery cam.

[0033] In another exemplary embodiment, a cam assembly for an archery bow includes a main body defining an axis for rotation of the cam, the main body having a first external surface defining a first outer edge and a second external surface defining a second outer edge, and a bowstring cavity defined about the periphery of the main body and between the first and second outer edges. The cam assembly also includes an edge protective device having at least one elongated body dimensioned for conforming to one of the external surfaces about the defined outer edge. The at least one elongated body has a mounting portion defining a mounting surface configured for mounting about an outer edge of one of the external surfaces of the archery cam and an external surface opposing the mounting surface. The elongated body also includes an extended portion extending from the mounting portion configured for extending beyond the outer edge of the external surface on which the body is mounted.

[0034] An adhesive can be used between the mounting surface of the body and the external surface of the main body for securing the elongated body to the main body. As noted above, the main body of the cam includes at least one mounting cavity or protrusion about the external surface for coupling to a mating mounting feature of the elongated body of the edge protective device for at least partially securing the elongated body of the edge protective device to the main body of the cam. The main body of the cam is typically composed of a metal or a solid composite. The elongated body of the edge protective material can be composed of any material and can include a flexible body composed of a resilient material, or a stiff material that is at least partially resilient for absorbing shocks or contact with foreign external items. Additionally, in some embodiments the body cam can be composed of sound and/or movement absorption material.

[0035] As described herein to one skilled in the art, a cam having an edge protective device can be assembled by a variety of methods including positioning an elongated body about an outer edge of one side of the cam such that at least a portion of an extended portion of the elongated body extends beyond the outer edge of the cam. The elongated body is attached about an outer surface of the cam for protecting the edge of the cam. Such attachment can include applying an adhesive between a mounting surface of the elongated body and the outer surface of the cam. The attachment can also include inserting at least one protrusion of the elongated body into a mounting cavity defined on the outer surface of the cam, or vice versa, e.g., insertion of a mounting protrusion of the cam into a mounting cavity defined by the elongated body. The assembly can include covering a portion or the entire surface of the bowstring cavity with a bowstring cavity portion. Of course, it is understood from the above discussion that two elongated bodies can be attached such that an elongated body is positioned on either side of the outer edge of the cam.

[0036] Referring now to the figures, FIG. 1 illustrates a compound bow 100 having upper and lower cams 102. As shown in the example, the lower cam 102 includes an edge protector. Together the cam 102 fitted with the cam edge protector 104 is referred here as a cam edge protected assembly 105.

[0037] The components of the compound bow 100, other than the cam 102 equipped with the cam edge protector 104 as illustrated are generally known to one skilled in the art. These include a bow main body 106 onto which the limbs 108 are mounted on opposing ends. A handle 110 is included on the main body 106 and often a string guide 107 is attached thereto. As shown in more detail on the upper limb 108, each limb 108 has and end portion 112 having a free split end 114 defining a notch 116. An axle 118 is positioned across the notch 116 for mounting a cam 102 having a rotating cam body 122 for rotation within the notch 116. A bowstring 124 is extended between the two limbs 108 parallel to the main body 106. As shown in this example, there are two cams 102, however, it should be understood that in some embodiments, there are only one cam 102. In this example, the bowstring 124 is mounted to include two cable portions 126 having at least one of the free ends 128 attached proximate to one of the cams 102 and that extend to the opposing limb 108 for rotation about the opposing cam 102. A cam edge protector 104 is shown mounted to the lower cam 102 and is positioned about a substantial portion of the outer edge 132 of the cam body 122 of cam 102.

[0038] Similarly, FIG. 2 is a crossbow 150 having right and left cam 102, each configured with an edge protector 104 according to another exemplary embodiment. The arrangement is similar to the compound bow 100 as discussed above, with the primary difference being the main body 106 is mounted to a crossbow frame 152 for securing the bowstring 124 and an arrow (not shown), for sighting, and for releasing the bowstring 124 and the arrow. In this illustrated embodi-
CAM EDGE PROTECTORS

Fig. 3 is a close-up view of an archery cam 102 mounted in a notch 116 of the free split end 114 of the limb 108. The cam 102 is adapted with an edge protector 104 about the outer edge 132 of the cam body 122. As shown, the edge protector 104 in this example actually includes two elongated bodies 154, one on each side of the outer edge 132 of the cam body 122 such that they form a gap 158 between the two elongated bodies 154. The bowstring 124 is positioned in a bowstring cavity 156 defined by the outer edge 132 of the cam 102 and extends through the gap 158 when entering and exiting the bowstring cavity 156. The cam edge protectors 104 are attached to the outer edge 132 of the cam body 122 as the cam 102 extends from the front end 112 of the limb 108 and from the notch 116 when mounted on the axle 118. In this manner, cam edge protectors 104 cover and protect the exposed outer edge 132 of the cam 102 from contact with foreign objects.

As shown in Fig. 4, in a cross-sectional view, an outer edge 132 of a cam 102 is protected by an edge protector 104 having extended portions 160 that extend from a mounting portion 161 and beyond the outer periphery of the outer edge 132 and can also include a lip 162 that extends perpendicularly from the extended portion 160 and the mounting portion 161 and over a portion of the bowstring cavity 156 and towards an opposing lip 162 of a mating edge protector. It should be understood here that the cam edge protector 104 can refer to a single unit only on a single side of the cam body 22 or to a pair of mating units positioned on either side of the cam body 122. A gap 158 is formed between the two lips 162. The edge protector 104 includes the mounting portion 161 with an inner mounting surface 163 that can be attached to an external surface 165 of the cam body 122 such as by an adhesive (not shown). Such attachment can be by any suitable adhesive including and adhesive tape such as a double-sided adhesive tape.

As shown in Figs. 4 and 5, the lips 162 are configured of a flexible material for flexing and allowing a bowstring 124 to pass between the two lips 162 through the gap 158 for entering and exiting the bowstring cavity 156. Fig. 4 illustrates that the free ends of the lips 162 can be square in shape whereas in Fig. 5 the free ends of the lips 162 can be shaped. Fig. 5 also includes a cam body 122 having mounting cavities 170 (such as holes or a groove) and the cam edge protectors 104 have one or more mounting protrusions 166 on an inner side of the mounting portion 161 that extend into and engage the mounting cavity 164 of the cam body 122.

Fig. 6A and 6B further illustrate the operation of the lips 162 in operation whereby the lips 162 are configured to flex inward and outward to allow the bowstring 124 to freely pass through the gap 158 defined by the two lips 162, while still providing a flexible protection to both outer edges 132 of the cam 102. Fig. 6A illustrates the two lips 162 flexing downward in the direction of arrows F as the bowstring 124 moves into the bowstring cavity 156. The extended portions 160 and the lips 162 are dimensioned and constructed to allow for flexing and for receiving the bowstring 124 without interfering with its placement in the bowstring cavity 156. In some embodiments, where lips 162 are provided the extended portions 160 can be composed of a material and/or dimensions to be more rigid than the lips 162. Fig. 6B illustrates the outward flexing of the lips 162 in the direction of arrows F. as the bowstring 124 is removed or withdrawn from the bowstring cavity 156.

Fig. 7A-7F illustrate various designs and characteristics of exemplary protective devices configured for protection of cam edges. Fig. 7A illustrates an embodiment of the edge protector 104 that has two elongated bodies 154 (shown as a cross-sectional view) having extended portions 160 that extend from the mounting portion 161 and opposing lips 162. Fig. 7B shows an embodiment of an edge protector 104 with two edge shoulders 168 configured for conforming to the outer edge 132 defining the outer periphery of the cam 102. The two edge shoulders 168 extend to cover the outer edge 132 but do not cover or extend across the bowstring cavity 156. In this embodiment, the two edge shoulders 168 when mounted on the cam body 122 can provide for added protection to the outer edges 132 of the cam 102.

Fig. 7C illustrates a cam edge protected assembly 105 having the mounting portion 161 and the extended portion 160 that extends beyond the outer edge 132 of the cam body 122 and shoulders 168 that are positioned on the outer edge 132. In this illustrative embodiment, however, the extended portions 160 of the edge protector 104 do not include lips 162 that extend over any portion of the bowstring cavity 156. As such, in this embodiment, the gap 158 is as wide as the bowstring cavity 156 and therefore the bowstring 124 does not contact the edge protector 104 when it is being received or when exiting the bowstring cavity 156. The outer edge 132 of the cam body 122 is still protected, however, as the extended portions 160 extend beyond the outer edge 132 and the shoulders 168 cover the outer edge 132 against contact by foreign objects.

Fig. 7D illustrates a cam edge protected assembly 105 or arrangement wherein the two opposing lips 162 are contoured in shape but where the gap 158 is minimal and therefore enclose a substantial portion of the bowstring cavity 156. In this embodiment, the extended portion 160 extends beyond the outer edge 132 and includes shoulder 168 covering the outer edge 132. The contoured lips 162 define the gap 158 that is positioned over and above the bowstring cavity 156.

Fig. 7E illustrates a cam edge protected assembly 105 having mounting cavities 164 and the elongated bodies 154 of the cam edge protectors 104 includes protrusions 166 that are inserted into the mounting cavities 164 of the cam body 122. Additionally, a bowstring cavity surface portion 170 is configured for covering the surface of the bowstring cavity 156. In this illustrative embodiment, the bowstring cavity surface portion 170 is coupled to two opposing extended portions 160 of the edge protector. In such embodiments, the edge protector 104 is configured to cover the two opposing sides of the cam body 122 about the outer edge 132. Such bowstring cavity surface portion 170 can conform to the bowstring cavity 156 and allow for the receipt of the bowstring 124 into the bowstring cavity 156 while also providing a protective layer to the surface of the bowstring cavity 156.

An adhesive (not shown) can be placed on the surface of the bowstring cavity 156 to hold the bowstring cavity surface portion 170 in place. As addressed above, the mounting surface 163 of the elongated body 154 of the cam edge protectors 104 can include similar adhesive for attachment to the external surface 165 of the cam body 122.

Similarly, Fig. 7F illustrates a single-sided edge protector 104 having a single extended portion 160 that extends beyond the outer edge 132, a shoulder 168, and a
bowstring cavity surface portion 170 that extends from the one sided extended portion 160 and covering the surface or at least a portion of the surface of the bowstring cavity 156 and terminates on or near the opposing outer edge 132.

[0049] FIG. 8A illustrates an embodiment of the edge protector 104 having two elongated bodies 154 that have not yet been mounted to a cam body 122. Each elongated body 154 is positioned on either side of the cam body 122 and aligned so that the protrusions 166 are positioned about the mating mounting cavities 164 on the external surfaces 165 of the cam body 122 proximate to the outer edge 132. The elongated bodies 154 are positioned relative to the external surfaces 165 for insertion of the protrusions 166 into the mounting cavities 164. Additionally, an adhesive (not shown) can be used for securing the protrusions 166 in the mounting cavities 164 that can be in addition to the adhesive securement as discussed above. FIG. 8B illustrates the installation of the edge protector 104 onto the cam body 122 of FIG. 8A.

[0050] As noted above, the elongated bodies 154 can include lips 162 that extend over the outer edges 132 and over portions of the bowstring cavity 156. FIGS. 9A, 9B, and 9C illustrate three exemplary cam edge protected assemblies 105 each having a different configuration of the lip 162 for extending over the bowstring cavity 156 and forming gaps 158. FIG. 9A includes two opposing lips 162, each having a contiguous straight edge. FIG. 9B includes two opposing lips 162 wherein each has serrated edges having teeth 174 that define at least one serrated gap 158 there between. FIG. 9C is a combination having one lip 162 having a solid contiguous edge and the other having teeth.

[0051] FIG. 10A provides a side perspective view of a cam having a cam body 122 and an outer edge 132 defining a bowstring cavity 156 wherein the cam body 122 is adapted for receiving on or more protrusions 166 of an edge protector 104 in an elongated mounting cavity 164 that extends generally parallel to the curved outer edge 132 of the cam body 122. The mounting cavity 164 in this embodiment is a mounting channel 176 defined about the external surface 165 of the cam body 122 proximate to the outer edge 132 and extends substantially parallel with the outer edge 132 for mounting the elongated body 154 of the edge protector. The mounting channel 176 is configured to receive a single elongated protrusion 166 on the elongated body 154 for attachment to the cam body 122.

[0052] FIG. 10B illustrates an alternative cam body 122 design having a plurality of mounting cavities 164 that are holes 178 positioned on the external surface 165 of the cam body 122 and generally in a line that is parallel to the outer edge 132. In such embodiments, the elongated body 154 of the edge protector 104 will have a plurality of mounting protrusions 166 that correspond to the size, shape, and spacing of the cam mounting holes 178.

[0053] FIGS. 10C and 10D are end views of an exemplary cam edge protected assembly 105 illustrating the positioning of the two different exemplary edge protectors 104 about the outer edges 132 of the cam body 122. As shown, the top edge protector 104 is attached to the external surfaces 165 of the cam body 122 with an adhesive and includes lips 162 that extend from the extended portion 160 of the elongated bodies 154 and that define the gap 158. On the lower portion an alternative arrangement is illustrated wherein the cam body 122 includes the mounting cavities 164 and the extended portion 160 extends outward from the outer edge 132 but does not include perpendicular lips 162.

[0054] FIGS. 10E and 10F illustrate the rotational operation of an archery cam edge protected assembly 105 configured with an edge protector 104 according to one exemplary embodiment. In FIG. 10E, the cam edge protected assembly 105 is shown in the neutral or pre-drawn bow position wherein the rotation position of the cam 102 is at the R₀ position. In this position, the bowstring 124 is positioned to be received in the bowstring cavity 156 through the gap 158 defined by the elongated body 154 of one end 180 of the edge protector. FIG. 10F illustrates the cam edge protected assembly 105 in the drawn and rotated position R₁. Here, the cam 102 and bowstring 124 are in the post-drawn position with the bowstring 124 exiting the bowstring cavity 156 through the gap 158 at a different point along the periphery of the cam body 122. One skilled in the art will understand the various intermediate positions between the neutral position R₀ as shown in FIG. 10E and the fully drawn position R₁ as shown in FIG. 10F.

[0055] As can be seen from the various exemplary embodiments as described herein, the edge protectors 104 for an archery cam 102 provide protection for the outer edges 132 of the cam body 122 from contact with foreign objects. In such a manner, the edge protector 104 can prevent damage to the outer edges 132 of the cam body 122 that can be expensive and that can negatively affect the performance of an archery bow. Additionally, in some embodiments, an edge protected cam assembly 105 can be configured having the edge protector 104 mounted on the cam body 122 for providing similar protection. In some embodiments, the protection of the cam can also provide for other benefits that include compression absorption associated with the rotation of the cam and operation of the bow, abrasion resistance, sound, oscillating, and/or vibration dampening from the sudden stopping of the rotation of the cam, the action of the limb on which the cam is mounted and linear and lateral movement of the bowstring.

[0056] When describing elements or features and/or embodiments thereof, the articles “a”, “an”, “the”, and “said” are intended to mean that there are one or more of the elements or features. The terms “comprising”, “including”, and “having” are intended to be inclusive and mean that there may be additional elements or features beyond those specifically described.

[0057] Those skilled in the art will recognize that various changes can be made to the exemplary embodiments and implementations described above without departing from the scope of the disclosure. Accordingly, all matter contained in the above description or shown in the accompanying drawings should be interpreted as illustrative and not in a limiting sense.

[0058] It is further to be understood that the processes or steps described herein are not to be construed as necessarily requiring their performance in the particular order discussed or illustrated. It is also to be understood that additional or alternative processes or steps may be employed.

What is claimed is:

1. An edge protective device for a cam of an archery bow comprising:

an elongated body dimensioned for conforming to a portion of an outer edge of the archery cam having a mounting portion composed of a resilient material for flexing and defining a mounting surface configured for mounting to an external surface of the outer edge of the archery cam and an external surface opposing the mounting surface, and an extended portion extending from the
mounting portion and having a free end extending from the second portion to beyond the outer edge of the cam when mounted to the cam.

2. The device of claim 1 wherein the extended portion includes the free end having a lip configured for covering at least a portion of a bowstring cavity at the outer edge of the cam, the lip extending perpendicular from the extended portion and the mounting surface.

3. The device of claim 2 wherein the lip includes a partially contoured free end.

4. The device of claim 2 wherein the lip defines a serrated edge along the elongated free end.

5. The device of claim 2 wherein the lip is configured to flex downwarf for allowing a bowstring to be received into the bowstring cavity and upward for allowing the bowstring positioned within the bowstring cavity to exit the bowstring cavity.

6. The device of claim 1 wherein the elongated body is dimensioned for mounting to a substantial elongated portion of the outer edge of the archery cam.

7. The device of claim 1 wherein the elongated body is formed into an arc substantially similar to an arc defining the outer edge of the archery cam.

8. The device of claim 1 wherein the elongated body further includes at least one protrusion extending substantially perpendicular from a portion of the mounting surface, the at least one protrusion being configured for insertion into a mounting cavity of the external surface of the outer edge of the archery cam.

9. The device of claim 8 wherein the at least one protrusion is selected from the group consisting of a protrusion extending substantially along a full length of the elongated body and a plurality of protrusions spaced apart from one another along the mounting surface of a full length of the elongated body.

10. The device of claim 1 wherein the body includes a bowstring cavity surface portion extending from the extended portion and adapted for covering a surface of a bowstring cavity of the archery cam.

11. The device of claim 10 wherein the bowstring cavity surface portion is configured to extend completely across the bowstring cavity of the cam for protecting an entire width of the bowstring cavity from the outer edge to an opposing outer edge of the cam.

12. The device of claim 11 wherein the extended portion is a first extended portion and wherein a second extended portion extends outwardly from the lip and from the opposing outer edge generally parallel to the first extended portion.

13. The device of claim 1 wherein the elongated body is a first elongated body, further comprising a second elongated body dimensioned for conforming to an opposing side portion of the cam and having a second first portion composed of a resilient material for flexing and defining a second mounting surface configured for mounting to a second external surface of the outer edge of the archery cam and an external surface opposing the second mounting surface, and a second extended portion extending from the second mounting portion beyond the outer edge of the cam when mounted to the cam.

14. The device of claim 13 wherein first extended portion includes a first lip, and the second extended portion includes a second lip, the first and second lips forming perpendicular portions that extend over a bowstring cavity of the cam and are dimensioned to form a gap there between and over the bowstring cavity when the first elongated body is mounted to the first external surface of the archery cam and the second elongated body is mounted to the opposing second external surface of the same archery cam.

15. An archery cam edge protective device comprising:

- a first elongated body dimensioned for conforming to a first side portion of an outer edge of the archery cam, the first body having a first mounting portion defining a first mounting surface configured for mounting to an external surface of the first side portion of the outer edge of the archery cam and a first external surface opposing the first mounting surface, and a first extended portion extending from the first mounting portion configured for extending beyond the outer edge of the archery cam when mounted to the cam; and

- a second elongated body dimensioned for conforming to a second side portion of the outer edge, the second body having a second mounting surface configured for mounting to a second external surface of the outer edge of the archery cam and a second external surface opposing the second mounting surface, and a second extended portion configured for extending beyond the outer edge of the archery cam when mounted to the cam, and the first and second extended portions being dimensioned for forming a gap there between and about a bowstring cavity defined by the outer edge of the archery cam.

16. The device of claim 15 wherein at least one of the first and second extended portions includes a perpendicularly lip extending towards the opposing extended portion and providing a narrowed gap there between.

17. The device of claim 16 wherein each of the first and second extended portions includes the perpendicularly lip and wherein the gap defined there between is less than about one half a total width of the bowstring cavity.

18. The device of claim 17 wherein at least one of the first and second extended portions includes a lip having a serrated edge.

19. The device of claim 15 wherein at least one of the extended portions includes a shoulder defined to engage a peripheral edge of the outer edge of the archery cam that defines one edge of the bowstring cavity.

20. The device of claim 15 wherein at least one of the first and second mounting surfaces includes a protrusion adapted for insertion into a mounting cavity defined by the external surface of the outer edge of the archery cam.

21. The device of claim 15, further comprising a bowstring cavity portion extending from the first extended portion to the second extended portion for covering a surface of the bowstring cavity there between.

22. A cam assembly for an archery bow comprising:

- a main body defining an axis for rotation of the cam, the main body having a first external surface defining a first outer edge and a second external surface defining a second outer edge, and a bowstring cavity defined about the periphery of the main body and between the first and second outer edges; and

- at least one cam edge protective device having an elongated body dimensioned for conforming to one of the external surfaces about the defined outer edge, each elongated body having a mounting portion defining a mounting surface configured for mounting about an outer edge of one of the external surfaces of the archery cam and an external surface opposing the mounting surface, and an extended portion extending from the mounting portion...
configured for extending beyond the outer edge of the external surface on which the body is mounted.

23. The assembly of claim 22 wherein the cam edge protective device includes two elongated bodies, one mounted to the first external surface and a second mounted to the second external surface and wherein a gap is formed between the two extended portions and about the bowstring cavity.

24. The assembly of claim 22 wherein the mounting surface of the elongated body is attached to the external surface of the main body of the cam with an adhesive for securing the protective device thereto.

25. The assembly of claim 22 wherein the main body includes a mounting cavity about the external surface and wherein the elongated body of the protective device includes a protrusion adapted for insertion into the mounting cavity for at least partially securing the protective device to the main body of the cam.

26. The assembly of claim 22 wherein the main body of the cam is composed of a metal and wherein at least a portion of the protective device is composed of a flexible material.

27. The assembly of claim 22 wherein the extended portion of the elongated body included a perpendicular lip protruding towards an opposing side of the cam and at least partially covering a portion of the bowstring cavity.

28. The assembly of claim 27 wherein the perpendicular lip includes a serrated edge having a plurality of teeth protruding towards the opposing side of the cam.

29. The assembly of claim 22 wherein the extended portion includes a shoulder configured for at least partially covering a portion of the outer periphery edge of the cam.

30. The assembly of claim 22, further comprising a bowstring cavity surface portion extending from the extended portion for covering a surface of the bowstring cavity.

31. A method of assembling a cam assembly for an archery bow comprising:
   positioning an elongated body of a cam edge protective device about an outer edge of one side of the cam wherein at least a portion of an extended portion of the elongated body extends beyond the outer edge of the cam; and
   attaching the elongated body about an outer surface of the cam.

32. The method of claim 31 wherein attaching includes applying an adhesive between a mounting surface of the elongated body and the outer surface of the cam.

33. The method of claim 31 wherein attaching includes inserting at least one protrusion of the elongated body into a mounting cavity defined on the outer surface of the cam.

34. The method of claim 31 wherein positioning an elongated body about an outer edge of one side of the cam includes covering at least a portion of a surface of the bowstring cavity with a bowstring cavity surface portion.

35. The method of claim 31 wherein the elongated body is a first elongated body, further comprising:
   positioning a second elongated body about an opposing outer edge of the opposing side of the cam wherein at least a portion of a second extended portion of the second elongated body extends beyond the outer edge of the cam; and
   attaching the second elongated body about an opposing outer surface of the cam.

36. The method of claim 35, further comprising positioning a bowstring cavity surface portion about a portion of a surface of the bowstring cavity, the bowstring cavity surface portion being coupled to at least one of the extended portions.

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