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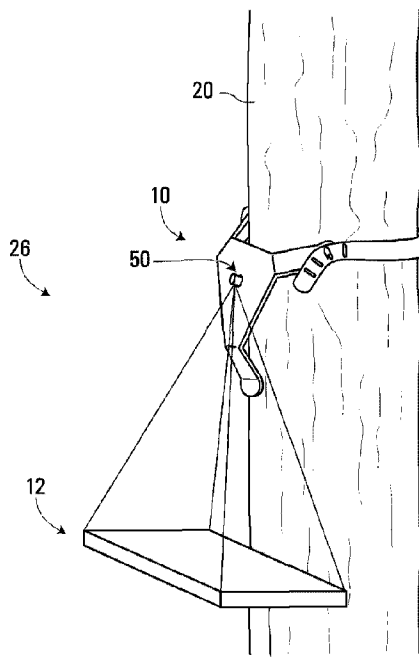
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(54) Titre : FACILITATION DU MONTAGE A UN SUPPORT AYANT UNE SURFACE INEGALE GENERALEMENT
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(54) Title: FACILITATING MOUNTING TO A SUPPORT HAVING AN UNEVEN GENERALLY VERTICAL SURFACE



(57) Abrégé/Abstract:

An apparatus for facilitating mounting of an article to a support having an uneven generally vertical surface is disclosed. The apparatus includes a holder including first, second, and third spaced apart surface engagers configured to abut the uneven generally vertical surface of the support, and an article mount coupled to the first, second, and third spaced apart surface engagers, the article mount configured to hold the article. The apparatus includes at least one flexible tension member configured to couple the holder to the support to draw at least one of the first, second, and third surface engagers into abutment with the uneven generally vertical surface of the support. Other apparatuses and systems are disclosed.



ABSTRACT

An apparatus for facilitating mounting of an article to a support having an uneven generally vertical surface is disclosed. The apparatus includes a holder including first, second, and third spaced apart surface engagers configured to abut the uneven generally vertical surface of the support, and an article mount coupled to the first, second, and third spaced apart surface engagers, the article mount configured to hold the article. The apparatus includes at least one flexible tension member configured to couple the holder to the support to draw at least one of the first, second, and third surface engagers into abutment with the uneven generally vertical surface of the support. Other apparatuses and systems are disclosed.

FACILITATING MOUNTING TO A SUPPORT HAVING AN UNEVEN GENERALLY VERTICAL SURFACE

BACKGROUND

1. Field

Embodiments of this disclosure relate to facilitating mounting of an article to a support and more particularly to facilitating mounting of an article to a support having an uneven generally vertical surface.

2. Description of Related Art

Some known devices for mounting an article or attachment to a support having an uneven generally vertical surface, such as, for example, a tree, may have various drawbacks. For example, some known devices may be limited to the use of only one or two specific functions, they may be unstable, unable to connect to and disconnect from the article quickly and/or securely, heavy/bulky, costly, and/or difficult to affix to the support.

SUMMARY

In accordance with various embodiments, there is provided an apparatus for facilitating mounting of an article to a support having an uneven generally vertical surface, the apparatus including a holder including first, second, and third spaced apart surface engagers configured to abut the uneven generally vertical surface of the support, and an article mount coupled to the first, second, and third spaced apart surface engagers, the article mount configured to hold the article. The apparatus includes at least one flexible tension member configured to couple the holder to the support to draw at least one of the first, second, and third surface engagers into abutment with the uneven generally vertical surface of the support.

At least one of the first, second, and third surface engagers may include a point configured to pierce the uneven generally vertical surface of the support.

The article mount may include a base coupling configured to couple to an article coupling of the article.

5 The base coupling may include a female coupling having an opening for receiving a male coupling of the article.

The female coupling may include a female quick release coupling including locking ball bearings encircling the opening of the female coupling and configured to selectively lock the male coupling of the article within the opening.

10 The holder may include first and second spaced apart tension member couplers configured to releasably couple to the at least one flexible tension member.

15 The first tension member coupler may be adjacent to the first surface engager and the second tension member coupler may be adjacent to the second surface engager.

The first and second tension member couplers may be oriented at an angle to one another, the angle being less than **180** degrees.

20 The angle may be between about **100** degrees and about **140** degrees.

Each of the first and second tension member couplers may include a barb.

25 The at least one flexible tension member may include a first plurality of spaced apart retainer openings at a first end of the at least one flexible tension member and a second plurality of spaced apart retainer openings at a second end of the at least one flexible tension member, the second end opposite of the first end, wherein the first and second pluralities of retainer openings are configured to
30 couple to the first and second spaced apart tension member couplers respectively.

The at least one flexible tension member may be configured to form at least a portion of a loop for encircling the support when the at least one flexible tension member is coupled to the holder.

- 5 Each of the first and second surface engagers may include a respective fastener receiver configured to receive and hold a fastener for fastening to the support.

The article mount may include a generally planar mounting surface configured to about the article when the article is held and the first, second, and third spaced apart
10 surface engagers may each include a respective leg extending at an angle to the mounting surface, the angle being greater than **90** degrees.

The angle may be about **135** degrees.

- 15 In accordance with various embodiments, there is provided a system for mounting to a support having an uneven generally vertical surface, the system including an apparatus as described above, and an article configured to be held by the article mount of the apparatus.

- 20 The article may be held by the article mount of the apparatus.

The article may include a garbage holder ring, a tether ball, a portable shelf, a retractable cord, a flood light, or one or more shooting targets.

- 25 Other aspects and features of embodiments of the present disclosure will become apparent to those ordinarily skilled in the art upon review of the following description of specific embodiments of the present disclosure in conjunction with the accompanying figures.

30 **BRIEF DESCRIPTION OF THE DRAWINGS**

In drawings which illustrate embodiments of the present disclosure,

Figure 1 is a perspective view of a system and an apparatus for facilitating mounting of an article to a support having an uneven generally vertical surface according to various embodiments of the present disclosure;

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Figure 2 is a perspective view of a holder of the apparatus shown in Figure 1 according to various embodiments of the present disclosure;

Figure 3 is a front view of the holder and a strap of the apparatus shown in Figure 1 according to various embodiments of the present disclosure;

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Figure 4 is a bottom perspective view of the holder of the apparatus shown in Figure 1 according to various embodiments of the present disclosure;

Figure 5 is a side perspective view of the holder of the apparatus shown in Figure 1 according to various embodiments of the present disclosure;

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Figure 6 is a perspective view of the system and the apparatus shown in Figure 1 according to various embodiments of the present disclosure;

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Figure 7 is a perspective view of a holder of an apparatus for facilitating mounting of an article to a support having an uneven generally vertical surface according to various embodiments of the present disclosure;

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Figure 8 is a perspective view of articles that may be included in the system shown in Figure 1 according to various embodiments of the present disclosure;

Figure 9 is a side perspective view of a system for facilitating mounting of an article to a support having an uneven generally vertical surface according to various embodiments of the present disclosure; and

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Figure 10 is a perspective view of a holder of an apparatus for facilitating mounting of an article to a support having an uneven generally vertical surface according to various embodiments of the present disclosure.

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DETAILED DESCRIPTION

Referring to Figure 1, there is provided a perspective view of an apparatus 10 for facilitating mounting of an article 12 to a support 20 having an uneven generally vertical surface 22, in accordance with various embodiments. Article 12 may include any suitable object, structure, or device which the user wishes to mount to the support 20 using apparatus 10. Referring to Figure 1, the apparatus 10 includes a base or holder 32 having first, second, and third spaced apart surface engagers 34, 36, and 38 configured to abut the uneven generally vertical surface 22 of the support 20. In some embodiments, the support 20 may be a vertical generally cylindrical support, such as, for example, a tree or a post. In some examples, support 20 includes any structure having an uneven surface on which it is desired to mount article 12. In various embodiments, the apparatus 10 may be multifunctional and may be used with a multitude of different functions.

In some embodiments, a system 26 for mounting to the support 20 may include the apparatus 10 and the article 12. In various embodiments, the system 26 and/or the apparatus 10 may facilitate stable and easy mounting of the article 12 to the support 20.

Referring still to Figure 1, the holder 32 includes an article mount 50 coupled to the first, second, and third spaced apart surface engagers 34, 36, and 38, the article mount 50 configured to hold the article 12. Surface engagers 34, 36, and 38 may include any suitable legs or arm-like structures extending out from article mount 50 and configured to interface with support 20. Article mount 50 may include any suitable structure on which the article 12 may be supported, either directly or indirectly (e.g., by hanging). In some examples, article mount 50 includes a central expanse to which

the surface engagers **34**, **36**, and **38** are coupled, such that the surface engagers extend away from the central expanse. In some examples, article mount **50** is of a unitary construction with the surface engagers. In some examples, the surface engagers form respective angles with respect to a general plane of the article mount, such that they are non-coplanar with the article mount.

For example, in some embodiments, the article mount **50** may include a base coupling **52** configured to couple to an article coupling **54** of the article **12**. In some embodiments, for example, the base coupling **52** and the article coupling **54** may together form a removable connector system configured to removably couple the article **12** to the holder **32**. Base coupling **52** may comprise a hole or aperture, for example a circular aperture or tube, passing through the article mount **50**. In some examples, base coupling **52** is a through-hole, extending from one side to the other. In some examples, base coupling **52** comprises a blind hole having a depth. In some examples, the base coupling **52** may include further structure such as one or more spring-loaded balls. The article coupling **54** may include any suitable structure configured to mate with the base coupling **52**, such as a shaped pin having a head configured to be removably accepted by the aperture of the base coupling **52**. If spring-loaded ball(s) are present, article coupling **54** may include a recess or groove configured to interface with the ball(s). In some examples, base coupling **52** comprises a pin and article coupling has a corresponding aperture or tubular receptacle. See below for further description.

In some embodiments, the holder **32** may include a single piece of material shaped to form at least a portion of the article mount **50** and at least a portion of the surface engagers **34**, **36**, and **38**. For example, in some embodiments a lightweight metal such as a hardened metal, such as, stainless steel, or an alloy, such as, aluminum alloy, may be used to form at least a portion of the article mount **50** and the surface engagers **34**, **36**, and **38**. In some embodiments, the holder **32** may include a single piece of material that is bent or cast into the shape including the article mount **50** and the surface engagers **34**, **36**, and **38** as shown in Figure 2.

Referring to Figure 1, the apparatus **10** includes a strap **70**, acting as a flexible tension member, configured to couple the holder **32** to the support **20** to draw at least one of the first, second, and third surface engagers **34**, **36**, and **38** into abutment with the uneven generally vertical surface **22** of the support **20**. Referring to Figure 1, in some embodiments, the strap **70** may be made of a flexible and strong material. In some embodiments, the strap **70** may be made of a resiliently stretchable material, such as for example, rubber. In various embodiments, use of a resiliently stretchable material, such as, rubber, may facilitate quick attachment to the support **20**, may facilitate adjustment of length via holes, for example, and/or may facilitate quiet use.

In some embodiments, the strap **70** may include a thick rubber strap, such as, for example about a **0.25"** thick rubber strap. In some embodiments, the strap may include a strong flexible webbing, which may, for example, be made of polyester or nylon. In some embodiments, use of a strong flexible webbing, such as polyester or nylon, may facilitate bearing high weights, such as, for example, up to at least about **200 lbs**. In some embodiments, use of a strong flexible webbing, such as polyester or nylon may facilitate little to no give or stretching of the strap **70**. In various embodiments, where a strong flexible webbing, such as polyester or nylon is used, a buckle, such as a triglide buckle, may be used to fasten the strap **70** to the holder **32**. In some embodiments, alternative or additional flexible tension members may be used in place of the strap **70**. For example, in some embodiments a rope, chain, or another flexible tension member may be used.

In various embodiments, the apparatus **10** may act as a small lightweight portable hanging device that may be used for hanging solutions in many outdoor applications. In various embodiments, the apparatus **10** may be a portable hanging device that can be brought anywhere to make generally vertical structures, such as, for example, trees or posts/poles, into temporary or semipermanent hanging surfaces.

In various embodiments, the apparatus **10** may facilitate mounting of various articles to various supports having uneven generally vertical surfaces. In some embodiments, for example, the support may be a tree and the article **12** used with the apparatus **10** may be one of many articles that one may wish to mount to the tree. In some embodiments, many varieties of article may be used with the apparatus **10**. For example, an article may include any or all of a light, such as a flood light, targets, such as shooting targets, a retractable cord, a portable shelf, a garbage holder ring, a camera holder, a portable shower such as a camping shower, a gun rest, a towel rack, a fishing rod holder, a dish shelf, a portable wash basin, a bird house, one or more games such as a tether ball, a basketball hoop, a dart board, or a ladder for ladder golf (game), or one or more other articles or attachments that one may wish to mount to the tree.

In some embodiments, the first, second, and third surface engagers **34**, **36**, and **38** being spaced apart may facilitate stable and sturdy engagement of the holder **32** with the uneven generally vertical surface **22** of the support **20**, despite the unevenness of the surface, including the curvature. For example, in some embodiments, the first, second, and third surface engagers **34**, **36**, and **38** may include legs having distal feet to provide three separated areas or points of contact with the surface **22** of the support **20**, which may help to ensure stable abutment of the surface engagers with the surface **22** of the support **20**. In some embodiments, the three separated areas or points of contact may facilitate a more stable and sturdy engagement than would be facilitated by two or fewer points of contact. In some embodiments, the three separated points of contact may facilitate a more stable and sturdy engagement than would be facilitated by four or more points of contact.

In some embodiments, the first, second, and third surface engagers **34**, **36**, and **38**, being spaced apart may provide a more versatile and/or functional arrangement. In various embodiments, the third surface engager **38** may act as a bottom or lower surface engager that could accept downward force. In some embodiments, the third surface engager **38** may act as a load bearing arm in when the holder **32** bears

weight. In various embodiments, the surface engagers **34**, **36**, and **38** may be spaced at a spacing that may allow for the surface engagers **34**, **36**, **38** to engage a generally cylindrical tree-like surface properly without the surface **22** interrupting by coming into contact with the holder **32** or the base coupling **52**. In various embodiments, the surface engagers may be spaced close enough to allow the holder **32** to stay spaced apart from a support having a diameter of at least **6"**, but still far enough apart to allow for use with a support of a greater circumference/diameter. For example, in some embodiments, distal ends or feet of the surface engagers **34**, **36**, and **38** may be spaced at a distance of about **4-6** inches from one another.

Referring now to Figure **2**, there is shown the holder **32** of the apparatus **10** shown in Figure **1**, in accordance with various embodiments. In some embodiments, the holder **32** includes first and second spaced apart tension member couplers **100** and **102**. In some embodiments, the first and second spaced apart tension member couplers **100** and **102** may be configured to releasably couple to the strap **70**. In some embodiments, the first and second spaced apart tension member couplers **100** and **102** may facilitate releasable coupling to both ends of the strap **70**, which may in some embodiments, facilitate ease of adjustability of a working length of the strap **70** and/or facilitate reduced effects on the integrity of the strap **70** which may arise in having too many holes on one end of the strap **70**.

In some embodiments, the first and second spaced apart tension member couplers **100** and **102** may each include a retainer, such as, for example, a barb, a hook, post, buckle (such as, for example, a triglide buckle), or another releasable coupling configured to couple to the strap **70**. In some embodiments, the first and second spaced apart tension member couplers **100** and **102** may include wide or elongated barbs or hooks, for example. In some embodiments, wide barbs or hooks may facilitate increased durability and/or improved functionality for different types of strapping applications when compared with regular barbs or hooks.

Referring to Figure 3, in various embodiments, the first and second spaced apart tension member couplers **100** and **102** may be oriented at an angle to one another, the angle being less than **180** degrees. In some embodiments, the angle between the first and second tension member couplers **100** and **102** may be the angle between sections of the strap **70** as they extend from the first and second spaced apart tension member couplers **100** and **102** when the strap **70** is coupled thereto. For example, the angle may be defined between imaginary lines extending along long axes of wide hooks of the couplers **100** and **102**. In various embodiments, having the angle less than **180** degrees may facilitate the strap **70** extending at upward angles from the holder **32** when coupled to the first and second tension member couplers **100** and **102** and secured around the support **20**. In various embodiments, the angle being less than **180** degrees may facilitate load from the strap **70** being evenly distributed across the width of the tension member couplers **100** and **102** to prevent unnecessary pressure spots on the tension member couplers **100** and **102**. In some embodiments, the angle may be between about **100** degrees and about **140** degrees. For example, in some embodiments, the angle may be about **120** degrees. In various embodiments, this may facilitate use of the holder **32** with varying tree sizes and/or varying tensions in the strap **70**. In various embodiments, the first and second spaced apart tension member couplers **100** and **102** may be generally similar.

Referring to Figure 2, in various embodiments, barbs or hooks included in the first and second tension member couplers **100** and **102** may each include a barb to catch the strap **70** and prevent the strap **70** from detaching on its own. In various embodiments, the hooks may have a width and depth such that they are sturdy enough to sustain applied pressure without snapping or breaking off.

Referring to Figure 3, there is shown the holder **32** and the strap **70** of the apparatus **10** of Figure 1, in accordance with various embodiments. In various embodiments, the strap **70** may form at least a portion of a loop for encircling the support **20** when the strap **70** is coupled to the holder **32** as shown in Figure 1. For example, in some

embodiments, in use, a first end **110** of the strap **70** may be coupled to the first tension member coupler **100**. The strap **70** may then be looped or wrapped around the support **20** as shown in Figure 1, and a second end **112** of the strap **70** shown in Figure 3 may be coupled to the second tension member coupler **102** as shown in Figure 1.

Referring to Figure 3, in various embodiments, the strap **70** may include retainer openings **120**, **122**, **124**, and **126** at the first end **110** for coupling to the first tension member coupler **100** and retainer openings **130**, **132**, **134**, and **136** at the second end **112** for coupling to the second tension member coupler **102**. In various embodiments, the retainer openings **120-126** and **130-136** may be spaced apart to facilitate use of the strap **70** for coupling to various supports of different sizes. In various embodiments, including spaced apart retainer openings **120-126** and **130-136** at both ends of the strap **70** may facilitate ease of adjustability of a working length of the strap **70** and/or facilitate reduced effects on the integrity of the strap **70** which may arise in having too many holes on one end of the strap **70**.

In some embodiments, a user may tighten the strap **70** around the support **20** before coupling the second tension member coupler **102** to a selected one of the retainer openings **130-136**. In some embodiments, the user may tension the strap **70** as tightly as possible. In some embodiments, use of holes and/or barbs or hooks may facilitate quick and easy fastening and adjusting of the length and/or tension of the strap **70** around the support **20**.

Referring now to Figure 4, in various embodiments, the first and second surface engagers **34** and **36** may include sharp extensions in the form of first and second points **200** and **202**, configured to pierce the uneven generally vertical surface **22** of the support **20** shown in Figure 1. In some embodiments, the points **200** and **202** may act as talons, for example, for gripping the surface **22**. In some embodiments, the third surface engager **38** may include a third point **204**. In some embodiments, the points **200**, **202**, and **204** shown in Figure 4 may help to prevent

slipping of the holder **32** on the surface **22** of the support **20** shown in Figure **1**. In various embodiments, the points **200**, **202**, and **204** may be integral with the surface engagers **34**, **36**, and **38** respectively. In some embodiments, the points **200**, **202**, and **204** may be attached by having been molded with the surface engagers **34**, **36**, and **38** or welded on, for example. Points **200** and **202** may be shaped protrusions extending away from distal feet of the surface engager legs, e.g., generally orthogonally from the engaging surface of each corresponding foot.

Referring to Figure **2**, in various embodiments, the first tension member coupler **100** may be adjacent to the first surface engager **34** and the second tension member coupler **102** may be adjacent to the second surface engager **36**. In some embodiments, the first and second tension member couplers **100** and **102** may be adjacent to surfaces or portions of the first and second surface engagers **34** and **36** that are configured to engage with or abut the support **20**. For example, in some embodiments, the first tension member coupler **100** may include a barb or a hook that is adjacent to the point **200** shown in Figure **4** and the second tension member coupler **102** may include a barb or a hook that is adjacent to the point **202** shown in Figure **4**. For example, in some embodiments, the first and second tension member couplers **100** and **102** may be within about **0.5** inches of the points **200** and **202** shown in Figure **4**. In various embodiments, the proximity of the first and second tension member couplers **100** and **102** to the first and second surface engagers **34** and **36** may facilitate drawing or pulling of the first and second surface engagers into abutment with the support **20** shown in Figure **1** to provide a stable and fixed mounting arrangement.

Referring to Figure **2**, in various embodiments, each of the first and second surface engagers **34** and **36** may include a respective opening **240** and **242**, which may act as a fastener receiver configured to receive and hold a fastener for fastening to the support **20**. For example, in some embodiments, the openings **240** and **242** may be configured to receive a fastener such as a screw or nail, which may be affixed to the support **20** to facilitate fixing of the holder **32** to the support **20**. Referring to Figure

2, in some embodiments, the third surface engager **38** may include an opening **244**, which may act as a fastener receiver configured to receive and hold a fastener for fastening to the support **20**. In various embodiments, including fastener receivers, such as the openings **240**, **242**, and **244**, may facilitate stable and/or fixed mounting of the holder **32** to the support **20**.

Referring to Figure 2, in some embodiments, the base coupling **52** of the article mount **50** may include a female coupling having an opening **280** for receiving a male coupling of the article **12**. In some embodiments, the base coupling **52** being a female coupling and the article coupling **54** (shown in Figure 1) being a male coupling may allow the article coupling to be smaller and may facilitate ease of coupling of the base coupling **52** to various types of articles. In some embodiments, a female coupling may include a lock for locking a corresponding male coupling into place. In various embodiments, the female coupling may be generally larger and/or more bulky than the male coupling. In various embodiments, the base coupling **52** being a female coupling and the article coupling **54** being a male coupling may facilitate having fewer moving parts on the article **12**, which may be advantageous. In various embodiments, the base coupling **52** being a female coupling and the article coupling **54** being a male coupling may facilitate having the smaller of the two couplings on the detachable article side. In some embodiments, the base coupling **52** being a female coupling and the article coupling **54** being a male coupling may facilitate having a less expensive to manufacture coupling on the article **12**, which may be advantageous because there may be multiple articles made for a single holder **32**.

In some embodiments, the base coupling **52** of the article mount **50** may be positioned in a non-central position relative to the first, second, and third surface engagers **34**, **36**, and **38**. In some embodiments, the base coupling **52** may be positioned nearer to the first and second surface engagers **34** and **36** than to the third surface engager **38**. In various embodiments, such an arrangement may facilitate reduced stress or downward force on the strap **70** when in use, while also facilitating increased force from the third surface engager **38** against the support **20**.

In some embodiments, the article mount **50** may include a generally planar mounting surface **306** configured to abut the article when the article is held. In various embodiments, the mounting surface **306** may include outer edges that generally follow edges of a triangle. In some embodiments, a broad surface as provided by the mounting surface **306** on the article mount **50** may facilitate multi-dimensional stability, such as, left to right and up and down stability.

In various embodiments, the article mount **50** may be coupled to the first, second, and third surface engagers **34**, **36**, and **38** via respective legs **290**, **292**, and **294** that each extend at an angle to the generally planar mounting surface **306** of the article mount **50**. In various embodiments, the angle may be greater than **90** degrees, such as, for example about **135** degrees. In various embodiments, an angle of greater than **90** degrees, such as, for example **135** degrees may facilitate ease of manufacturing and/or reduce material needed to provide both spacing of the article mount **50** from the support **20** shown in Figure **1** and spacing between the first, second, and third surface engagers. Referring to Figure **5**, the holder **32** is shown from a side view according to various embodiments. In various embodiments, dimensions including a height **320** of the generally planar mounting surface **306** of the article mount **50** may be chosen to provide stability to the article **12** when the article **12** is held by the holder **32**. For example, in some embodiments, the height **320** may be about **3.5** inches.

In some embodiments, feet of the first, second, and third surface engagers **34**, **36**, and **38** may include respective support engaging surfaces **310**, **312**, and **314** configured to abut the support **20** shown in Figure **1**. In some embodiments, a displacement or spacing **322** between the generally planar mounting surface **306** and the support engaging surfaces **310**, **312**, and **314** may facilitate adequate spacing between the article **12** and the support **20** and between the article mount **50** and the support **20** when the article **12** is coupled too the holder **32**. In some embodiments, the spacing **322** may be about **1.5** inches, for example.

Referring to Figure 2, in some embodiments, the base coupling **52** may include a female quick release coupling including locking ball bearings encircling the opening **280** and configured to selectively lock the male coupling of the article within the opening. In some embodiments, use of a quick release coupling having locking ball bearings may facilitate fast and easy coupling and decoupling between the article **12** and the holder **32**. In some embodiments, use of a quick release coupling may facilitate use of a locking mechanism to hold the article **12** in place. In some embodiments, the female quick release coupling may have a spring loaded sliding coupler that disengages ball bearings allowing a male coupling to enter the female coupling. The sliding coupler may then be sprung back into place engaging the ball bearings and locking the male coupling into place.

In various embodiments, in operation, after the strap **70** has been placed around the support **20** shown in Figure 1 and coupled to the holder **32**, the article **12** may be coupled to the holder **32** via the base coupling **52** and the article coupling **54**. In various embodiments, the weight of the article **12** pulling downward on the holder **32** at the base coupling **52** may cause torque to be applied to the holder **32** to push the third surface engager **38** into abutment with the surface **22** of the support **20**. In various embodiments, the application of the weight or force from the article **12** at a location spaced apart from the surface **22** of the support **20** may reduce or avoid slipping of the holder **32** down the support **20**.

Referring to Figure 6, there is shown the system **26** for mounting to the support **20** wherein the article **12** is held by the article mount **50** of the apparatus **10**.

Referring to Figure 7, there is shown a holder **332**, which may be used in place of the holder **32** in the apparatus **10** shown in Figures 1 to 6, in various embodiments. Referring to Figure 7, in some embodiments the holder **332** may function generally similarly to the holder **32** shown in Figures 1 to 6. The holder **332** includes first, second, and third spaced apart surface engagers **334**, **336**, and **338** configured to

about the uneven generally vertical surface **22** of the support **20** shown in Figure 1 and an article mount **350** coupled to the first, second, and third spaced apart surface engagers **334**, **336**, and **338**, the article mount **350** configured to hold the article **12** shown in Figure 1.

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In some embodiments, the holder **332** may include reinforcers **380**, **382**, and **384** coupled between a base coupling **352** of the holder **332** and each of the first, second, and third surface engagers **334**, **336**, and **338**. In various embodiments, the reinforcers **380**, **382**, and **384** may include ribs or ridges of material elevated from a surface **386** of the holder **332** and extending outward generally away from a center of the holder **332** in the general direction of the legs of the surface engagers. In various embodiments, the reinforcers **380**, **382**, and **384** may be integral with the surface **386**. For example, in some embodiments, a portion of the holder **332** including the surface **386** and the reinforcers **380**, **382**, and **384** may be molded as one piece. In various embodiments, the reinforcers **380**, **382**, and **384** may increase rigidity of the device. In various embodiments, increased rigidity may facilitate the device achieving improved load capacity.

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Referring to Figure 8, there are shown various articles that may be used in place of or in addition to the article **12** shown in Figures 1 and 6, in accordance with various embodiments. For example, shown in Figure 8 is a garbage holder ring **440**, a tether ball **460**, a portable shelf **480**, a retractable cord **500**, a flood light **520**, and shooting targets **540**. As discussed above, in various embodiments, an article may include additional or alternative attachments or articles, such as, any or all of a light, such as a flood light, targets, such as shooting targets, a retractable cord, a portable shelf, a garbage holder ring, a camera holder, a portable shower such as a camping shower, a gun rest, a towel rack, a fishing rod holder, a dish shelf, a portable wash basin, a bird house, one or more games such as a tether ball, a basketball hoop, a dart board, or a ladder for ladder golf (game), or one or more other articles that one may wish to mount to the tree.

Referring to Figure 9, there is shown a system **600** generally similar to the system **26** shown in Figure 6, including the apparatus **10** and an article **612** different from the article **12** shown in Figure 6. In various embodiments, the article **612** may be held by the article mount **50** of the apparatus **10**. Referring to Figure 9, in various
5 embodiments, the article **612** may include a flood light generally similar to the flood light **520** shown in Figure 8. In various embodiments, an alternative or additional article may be used in the system **600** shown in Figure 9 or the system **26** shown in Figure 6, such as, for example any of the exemplary articles described above and/or shown in Figure 8.

10 In some embodiments, a holder **660** as shown in Figure 10 generally similar to the holder **32** shown in Figures 1-6 may be used generally as discussed above having regard to the holder **32** except that the holder **660** may include first and second triglide buckles **662** and **664** acting as tension member couplers. In various
15 embodiments, a strap which may function generally similarly to the strap **70** may be used with the holder **660** wherein the strap includes webbing, such as nylon webbing, for example, configured for fastening to the triglide buckles **662** and **664**. In various embodiments, using the triglide buckles **662** and **664** may facilitate ease of adjustment and/or tightening of a strap used with the holder **660**.

20 In various embodiments, a holder generally similar to the holder **660** shown in Figure 10 may include a strap permanently fastened to the holder **660** on one end (e.g., near the location of the first triglide buckle **662** of the holder **660** shown in Figure 9) and releasably attachable to a triglide buckle generally similar to the second triglide
25 buckle **664** shown in Figure 9. In various embodiments, such an arrangement may facilitate slower yet more sturdy and/or adjustable mounting.

30 In various embodiments, where an element is described as having an opening, it will be understood that the element includes physical features that define the opening.

While specific embodiments of the present disclosure have been described and illustrated, such embodiments should be considered illustrative of the present disclosure only and not as limiting the present disclosure as construed in accordance with the accompanying claims.

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Additional aspects and features of apparatuses for facilitating mounting of an article to a support are presented below, without limitation, as a series of paragraphs alphanumerically designated for clarity and efficiency.

10 **A0.** An apparatus for facilitating mounting of an article to a support having an uneven generally vertical surface, the apparatus comprising:

a holder including:

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first, second, and third spaced apart surface engagers configured to abut the uneven generally vertical surface of the support; and

an article mount coupled to the first, second, and third spaced apart surface engagers, the article mount configured to hold the article; and

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at least one flexible tension member configured to couple the holder to the support to draw at least one of the first, second, and third surface engagers into abutment with the uneven generally vertical surface of the support.

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A1. The apparatus of A0, wherein at least one of the first, second, and third surface engagers includes a point configured to pierce the uneven generally vertical surface of the support.

A2. The apparatus of A0 or A1, wherein the article mount includes a base coupling configured to couple to an article coupling of the article.

A3. The apparatus of A2, wherein the base coupling includes a female coupling having an opening for receiving a male coupling of the article.

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A4. The apparatus of A3, wherein the female coupling includes a female quick release coupling including locking ball bearings encircling the opening of

the female coupling and configured to selectively lock the male coupling of the article within the opening.

A5. The apparatus of any one of paragraphs A0 through A4, wherein the holder includes first and second spaced apart tension member couplers configured to releasably couple to the at least one flexible tension member.

A6. The apparatus of A5, wherein the first tension member coupler is adjacent to the first surface engager and the second tension member coupler is adjacent to the second surface engager.

A7. The apparatus of paragraph A5 or A6, wherein the first and second tension member couplers are oriented at an angle to one another, the angle being less than **180** degrees.

A8. The apparatus of A7, wherein the angle is between about **100** degrees and about **140** degrees.

A9. The apparatus of any one of paragraphs A5 through A8, wherein each of the first and second tension member couplers includes a barb.

A10. The apparatus of any one of paragraphs A5 through A9, wherein the at least one flexible tension member includes a first plurality of spaced apart retainer openings at a first end of the at least one flexible tension member and a second plurality of spaced apart retainer openings at a second end of the at least one flexible tension member, the second end opposite of the first end, wherein the first and second pluralities of retainer openings are configured to couple to the first and second spaced apart tension member couplers respectively.

A11. The apparatus of any one of paragraphs A0 through A10, wherein the at least one flexible tension member is configured to form at least a portion of a loop for encircling the support when the at least one flexible tension member is coupled to the holder.

A12. The apparatus of any one of paragraphs A0 through A11, wherein each of the first and second surface engagers includes a respective fastener receiver configured to receive and hold a fastener for fastening to the support.

- 5 **A13.** The apparatus of any one of paragraphs **A0** through **A12**, wherein the article mount includes a generally planar mounting surface configured to abut the article when the article is held and the first, second, and third spaced apart surface engagers each include a respective leg extending at an angle to the mounting surface, the angle being greater than **90** degrees.
- A14.** The apparatus of **A13**, wherein the angle is about **135** degrees.
- 10 **A15.** A system for mounting to a support having an uneven generally vertical surface, the system comprising: the apparatus of any one of paragraphs **A0** through **A14**; and an article configured to be held by the article mount of the apparatus.
- A16.** The system of **A15**, wherein the article is held by the article mount of the apparatus.
- 15 **A17.** The system of **A15** or **A16**, wherein the article includes a garbage holder ring, a tether ball, a portable shelf, a retractable cord, a flood light, or one or more shooting targets.

CLAIMS:

1. An apparatus for facilitating mounting of an article to a support having an uneven generally vertical surface, the apparatus comprising:
5 a holder including:
 first, second, and third spaced apart surface engagers configured to abut the uneven generally vertical surface of the support; and
 an article mount coupled to the first, second, and third spaced
10 apart surface engagers, the article mount configured to hold the article; and
 at least one flexible tension member configured to couple the holder to the support to draw at least one of the first, second, and third surface engagers into abutment with the uneven generally vertical
15 surface of the support.
2. The apparatus of claim 1 wherein at least one of the first, second, and third surface engagers includes a point configured to pierce the uneven generally vertical surface of the support.
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3. The apparatus of claim 1 or 2 wherein the article mount includes a base coupling configured to couple to an article coupling of the article.
4. The apparatus of claim 3 wherein the base coupling includes a female
25 coupling having an opening for receiving a male coupling of the article.
5. The apparatus of claim 4 wherein the female coupling includes a female quick release coupling including locking ball bearings encircling the opening of the female coupling and configured to selectively lock the male coupling
30 of the article within the opening.

6. The apparatus of any one of claims **1** to **5** wherein the holder includes first and second spaced apart tension member couplers configured to releasably couple to the at least one flexible tension member.
- 5 7. The apparatus of claim **6** wherein the first tension member coupler is adjacent to the first surface engager and the second tension member coupler is adjacent to the second surface engager.
- 10 8. The apparatus of claim **6** or **7** wherein the first and second tension member couplers are oriented at an angle to one another, the angle being less than **180** degrees.
- 15 9. The apparatus of claim **8** wherein the angle is between about **100** degrees and about **140** degrees.
- 20 10. The apparatus of any one of claims **6** to **9** wherein each of the first and second tension member couplers includes a barb.
- 25 11. The apparatus of any one of claims **6** to **10** wherein the at least one flexible tension member includes a first plurality of spaced apart retainer openings at a first end of the at least one flexible tension member and a second plurality of spaced apart retainer openings at a second end of the at least one flexible tension member, the second end opposite of the first end, wherein the first and second pluralities of retainer openings are configured to couple to the first and second spaced apart tension member couplers respectively.
- 30 12. The apparatus of any one of claims **1** to **11** wherein the at least one flexible tension member is configured to form at least a portion of a loop for encircling the support when the at least one flexible tension member is coupled to the holder.

13. The apparatus of any one of claims **1** to **12** wherein each of the first and second surface engagers includes a respective fastener receiver configured to receive and hold a fastener for fastening to the support.

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14. The apparatus of any one of claims **1** to **13** wherein the article mount includes a generally planar mounting surface configured to abut the article when the article is held and the first, second, and third spaced apart surface engagers each include a respective leg extending at an angle to the mounting surface, the angle being greater than **90** degrees.

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15. The apparatus of claim **14** wherein the angle is about **135** degrees.

16. A system for mounting to a support having an uneven generally vertical surface, the system comprising:

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the apparatus of any one of claims **1** to **15**; and

an article configured to be held by the article mount of the apparatus.

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17. The system of claim **16** wherein the article is held by the article mount of the apparatus.

18. The system of claim **16** or **17** wherein the article includes a garbage holder ring, a tether ball, a portable shelf, a retractable cord, a flood light, or one or more shooting targets.

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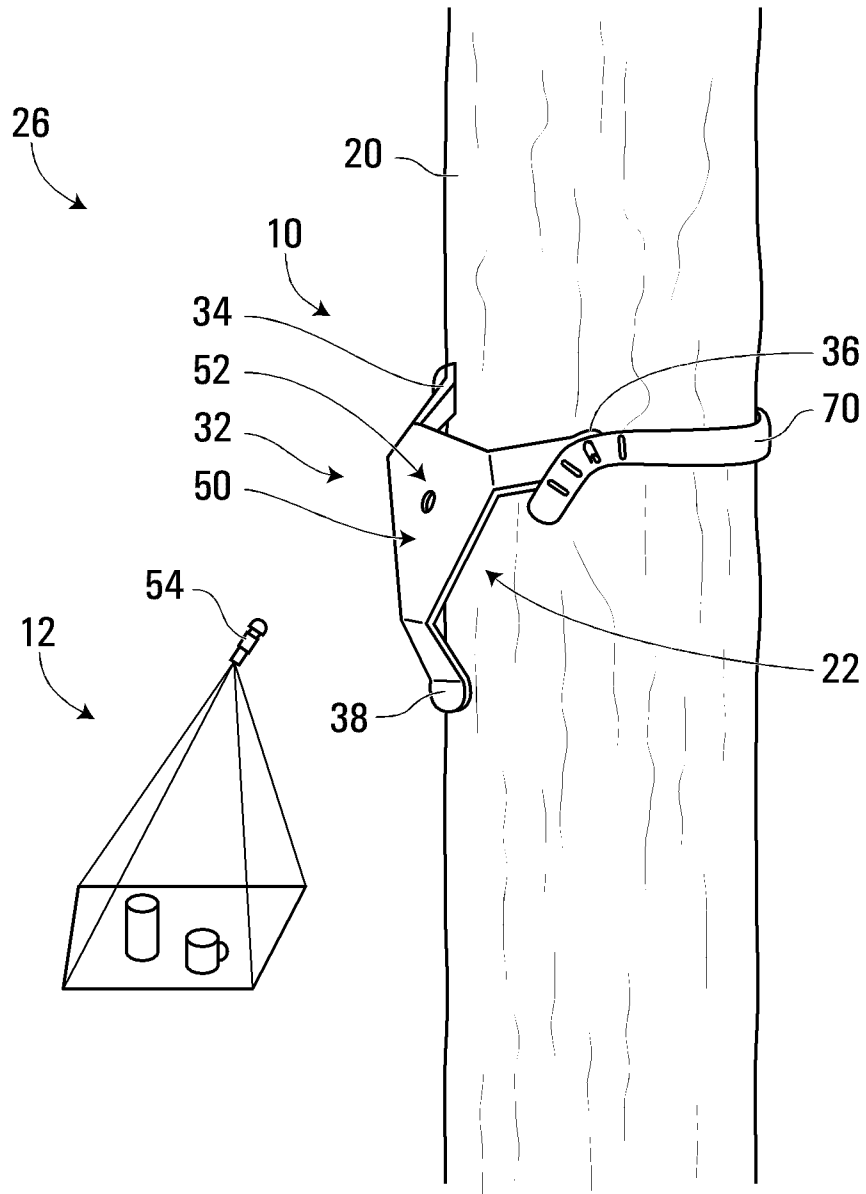


FIG. 1

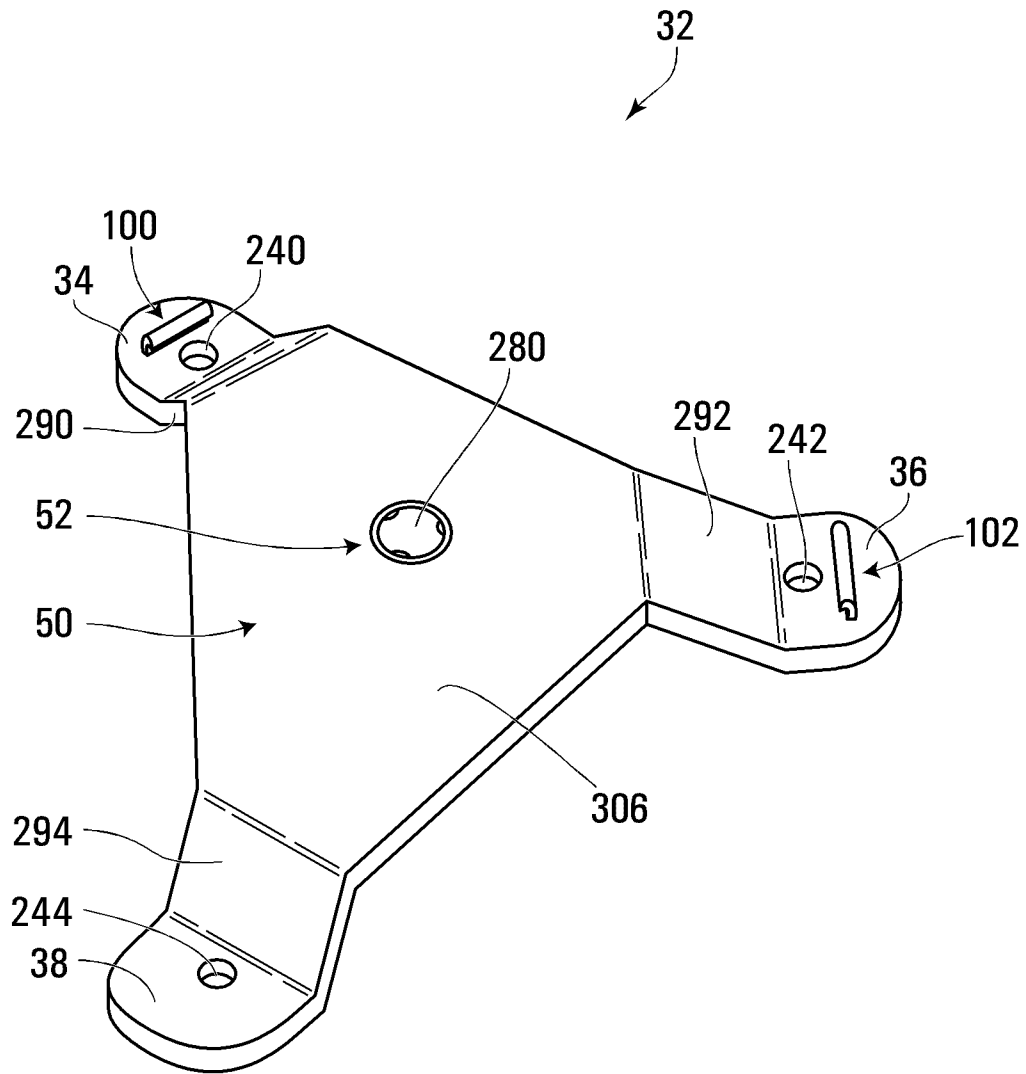


FIG. 2

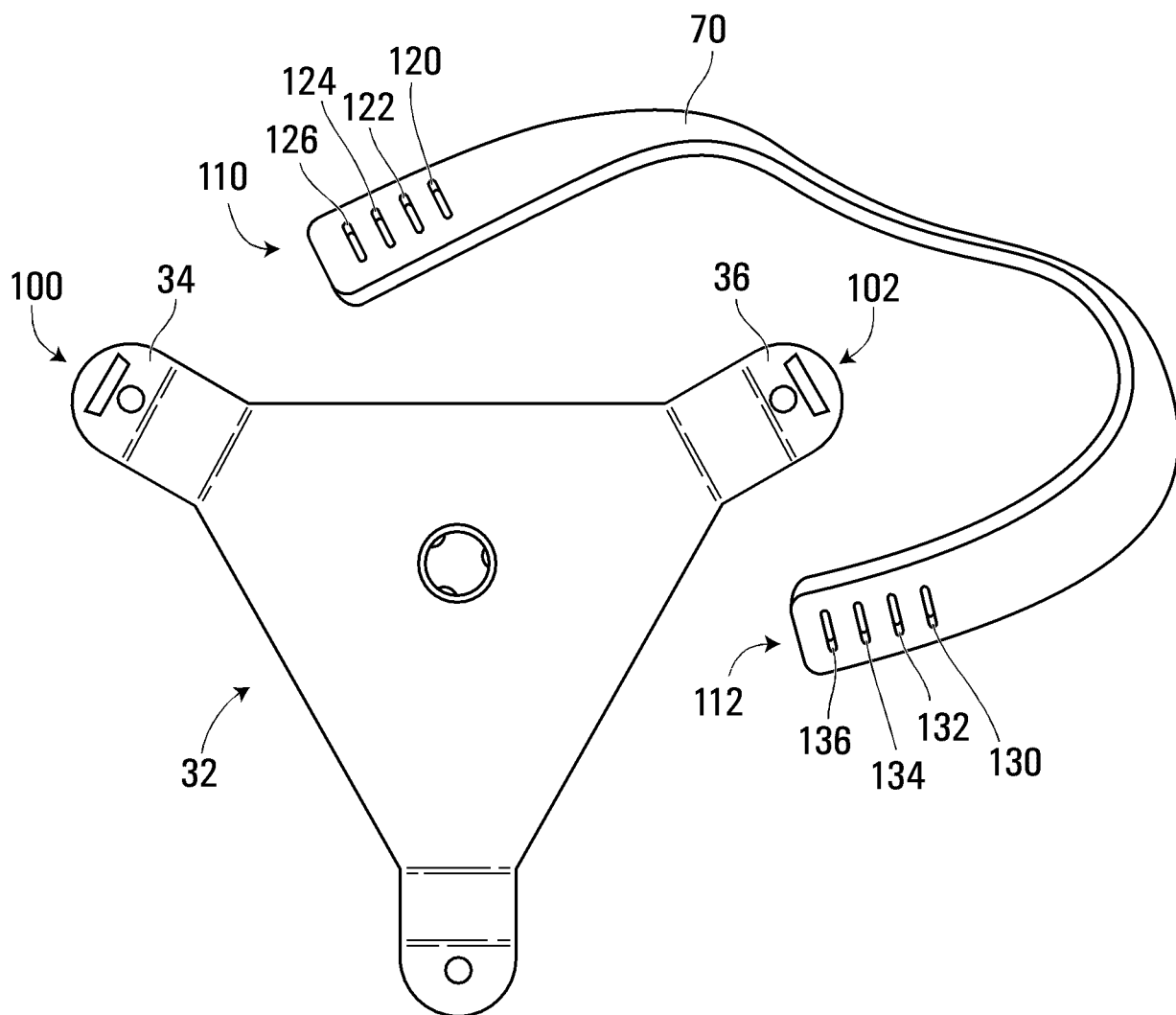


FIG. 3

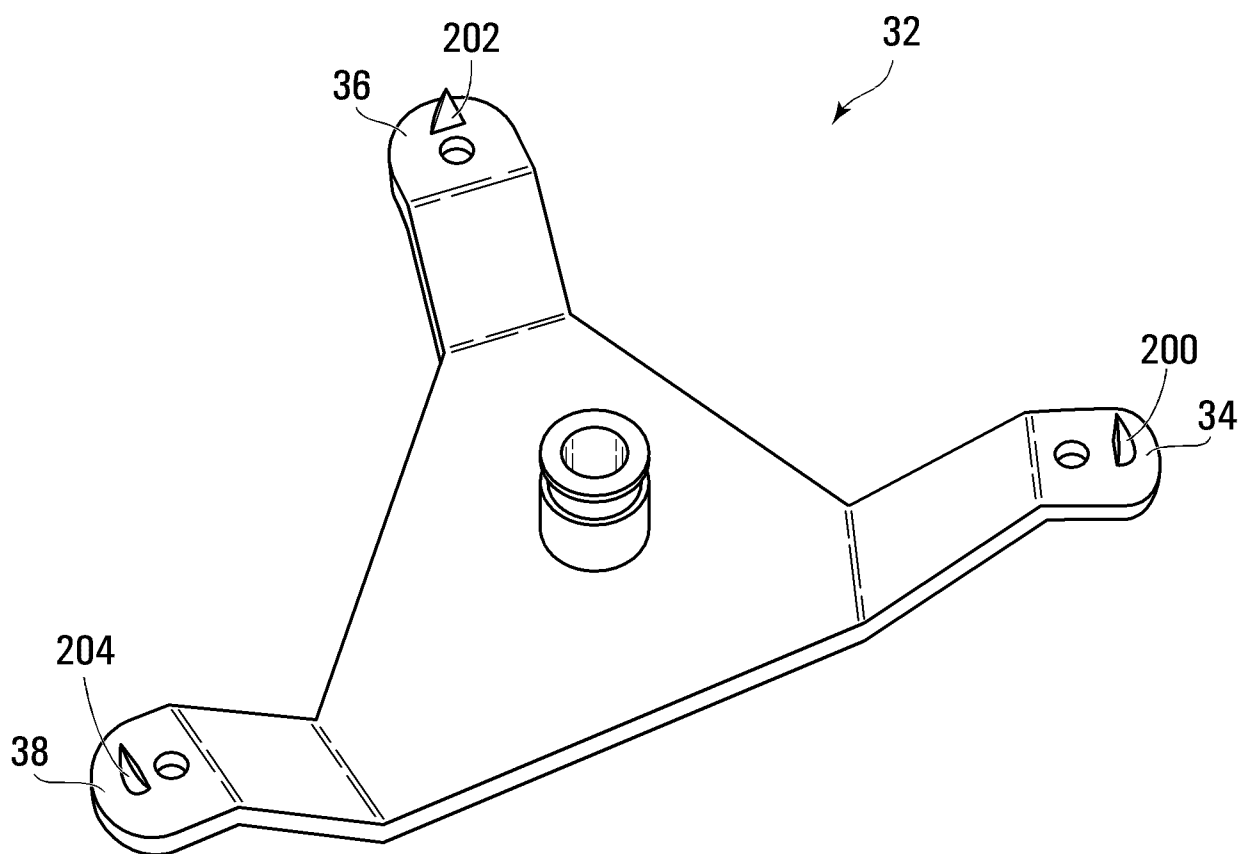


FIG. 4

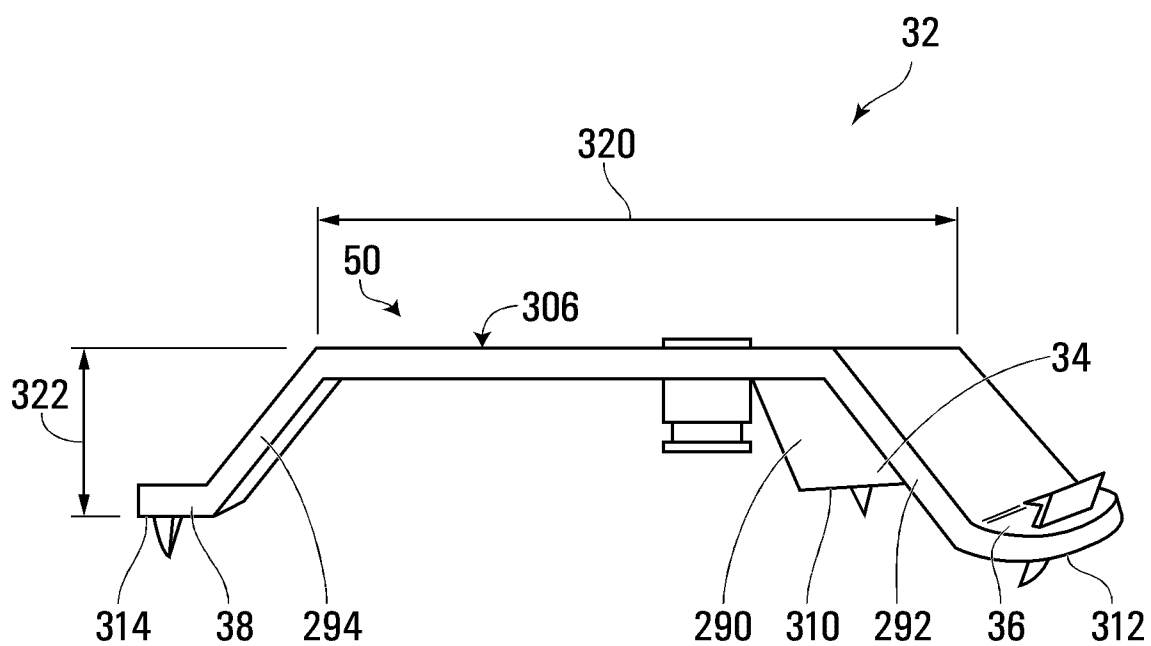


FIG. 5

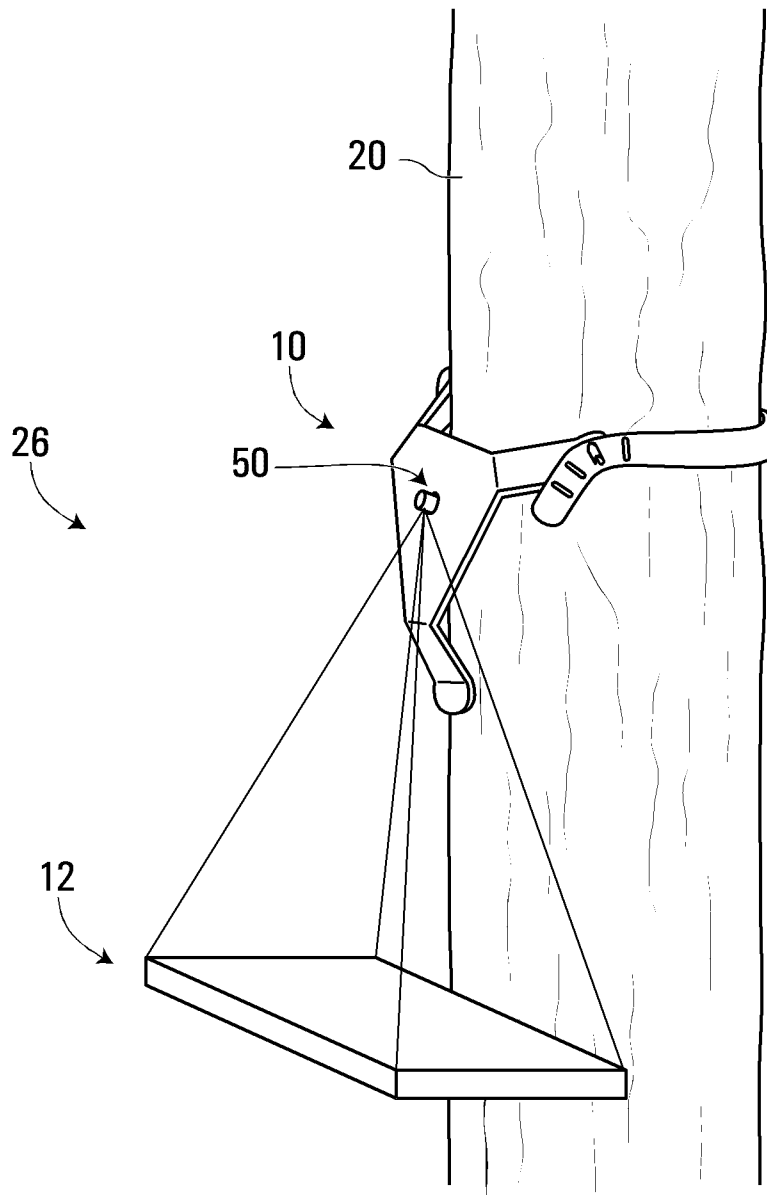


FIG. 6

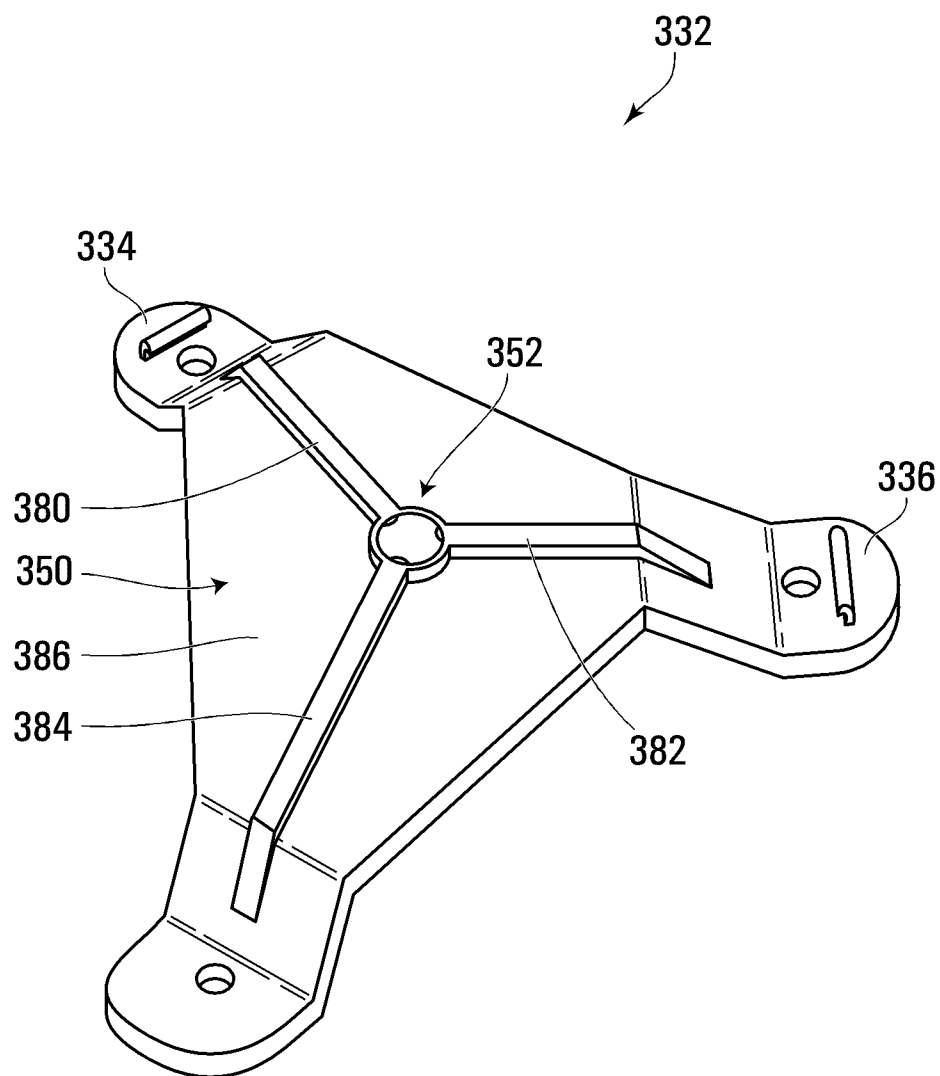


FIG. 7

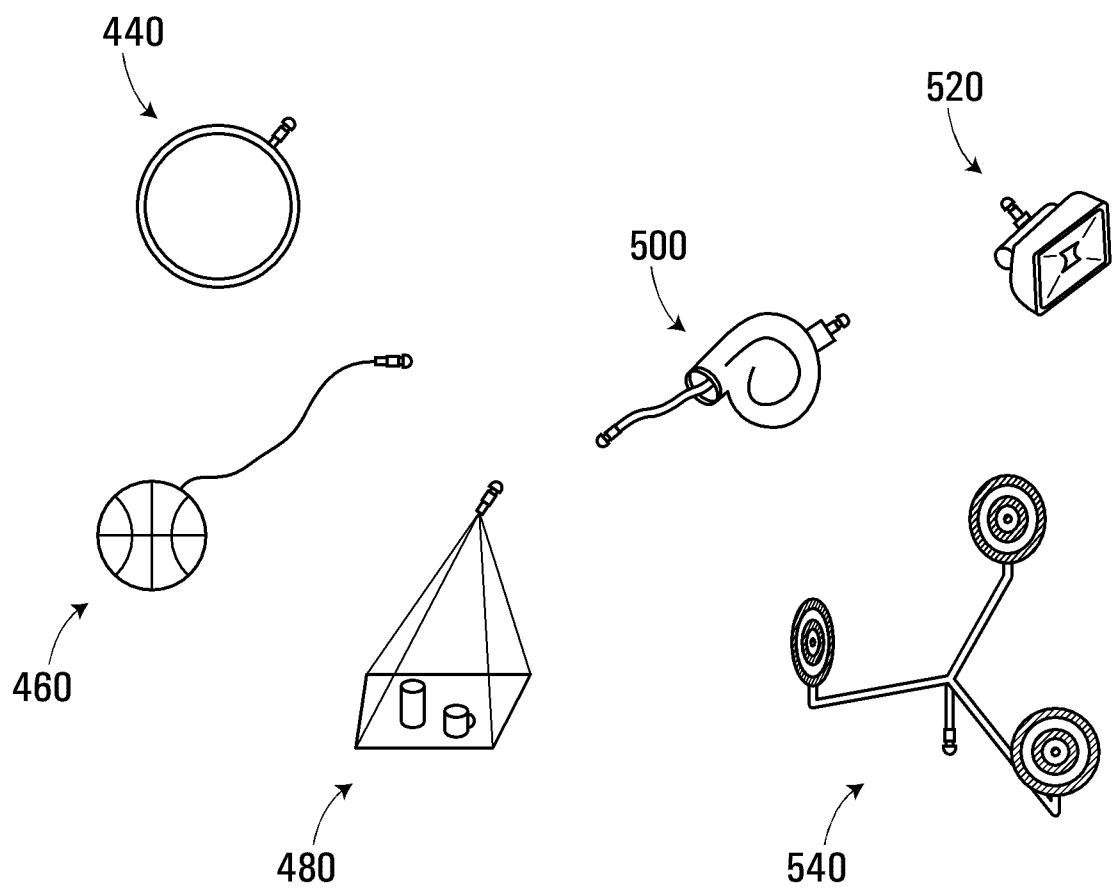


FIG. 8

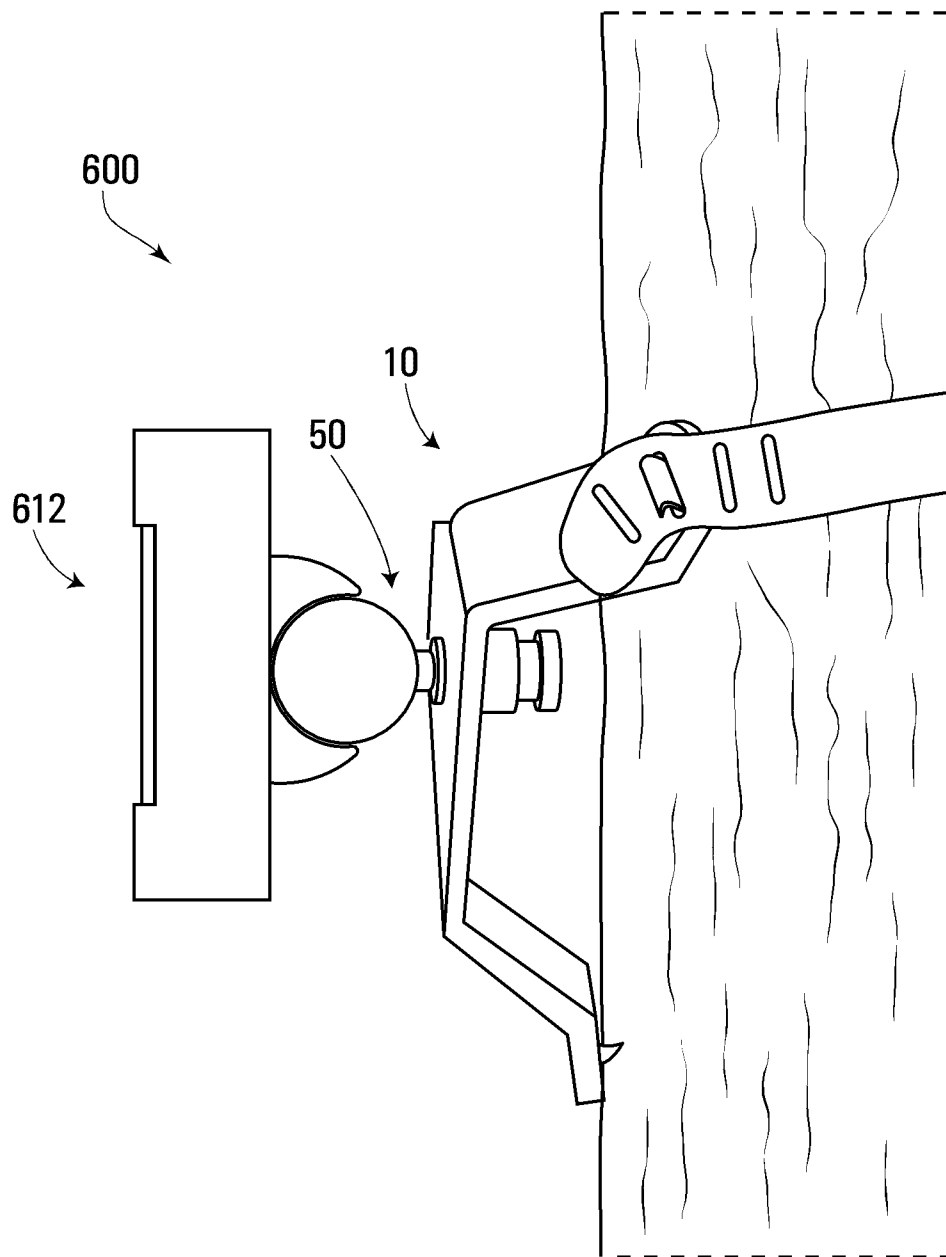


FIG. 9

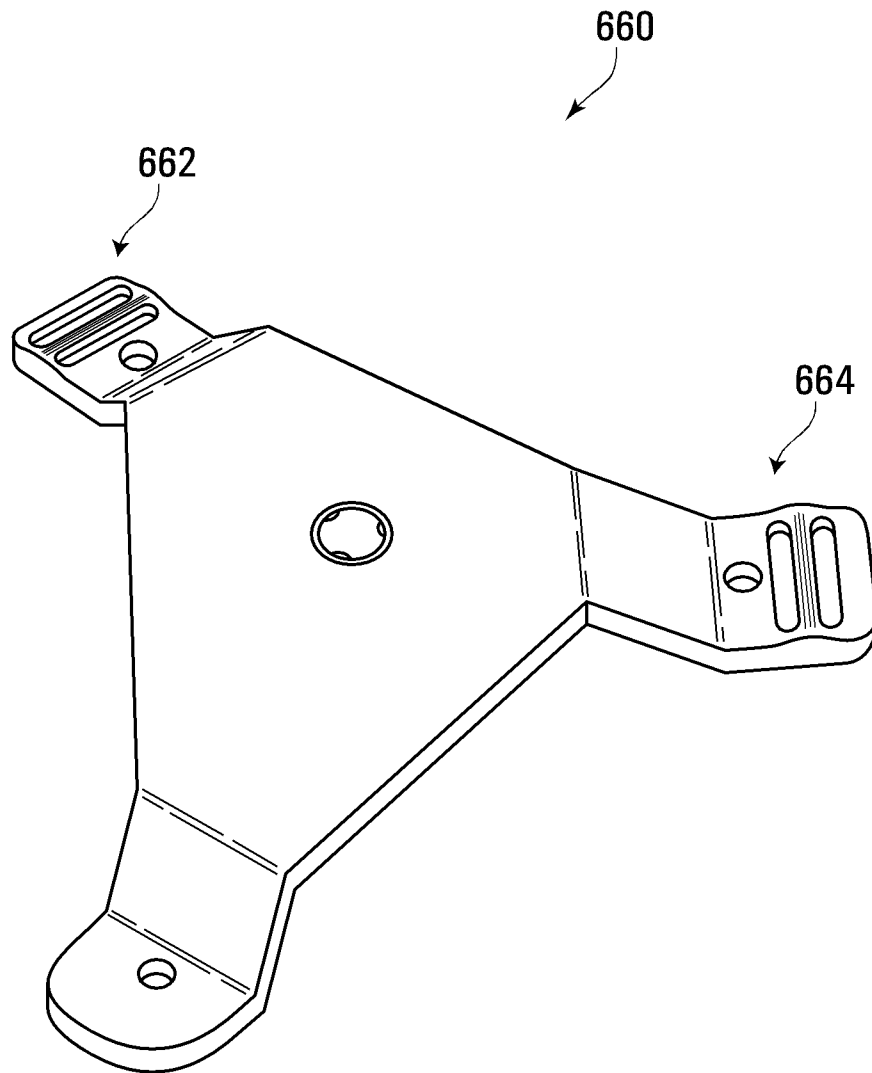


FIG. 10

