US 20190069533A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2019/0069533 A1**

St. John (43) **Pub. Date: Mar. 7, 2019**

(54) **SYSTEMS METHODS & APPARATUS FOR TRIMMING A HOOF OF A HORSE**

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(21) Appl. No.: **16/121,774**

(22) Filed: **Sep. 5, 2018**

Related U.S. Application Data

(60) Provisional application No. 62/554,171, filed on Sep. 5, 2017.

Publication Classification

(51) **Int. Cl.**

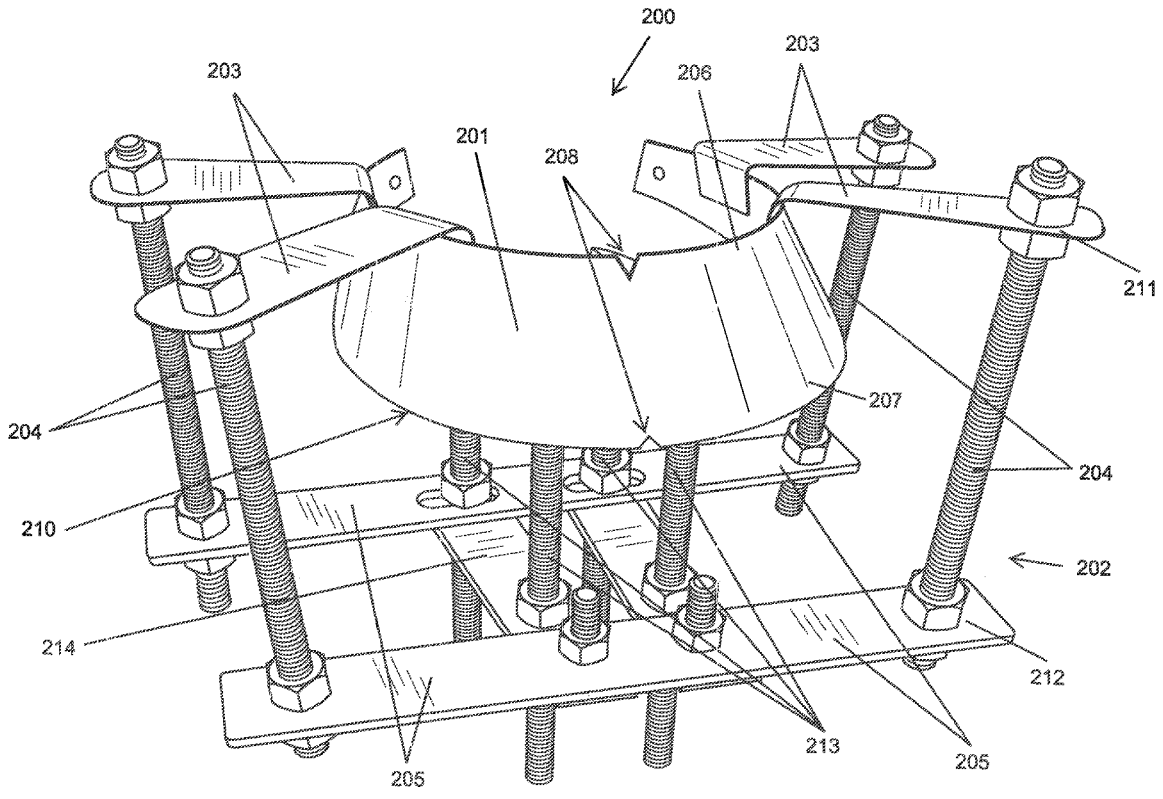
A01L 15/00	(2006.01)
A01L 13/00	(2006.01)
B26B 29/06	(2006.01)

(52) **U.S. Cl.**

CPC ***A01L 15/00*** (2013.01); ***B26B 29/06*** (2013.01); ***A01L 13/00*** (2013.01)

(57) **ABSTRACT**

Apparatus, systems and methods are provided for trimming a hoof of a horse. The apparatus is an adjustable cutting guide that includes a hoof band configured to extend around the hoof. The hoof band includes an identifier for aligning the hoof band with a mark on the hoof indicating a longitudinal axis of a leg of the horse and a cutting edge providing a cutting plane for a cutting tool. The cutting plane is perpendicular to the longitudinal axis of the leg of the horse. The cutting guide also includes a clamping structure for adjustably clamping the hoof band to the hoof at a user selectable, fixed position above a sole of the hoof when the hoof band is aligned with the mark. The systems include the cutting guide, a marking tool and an alignment tool.



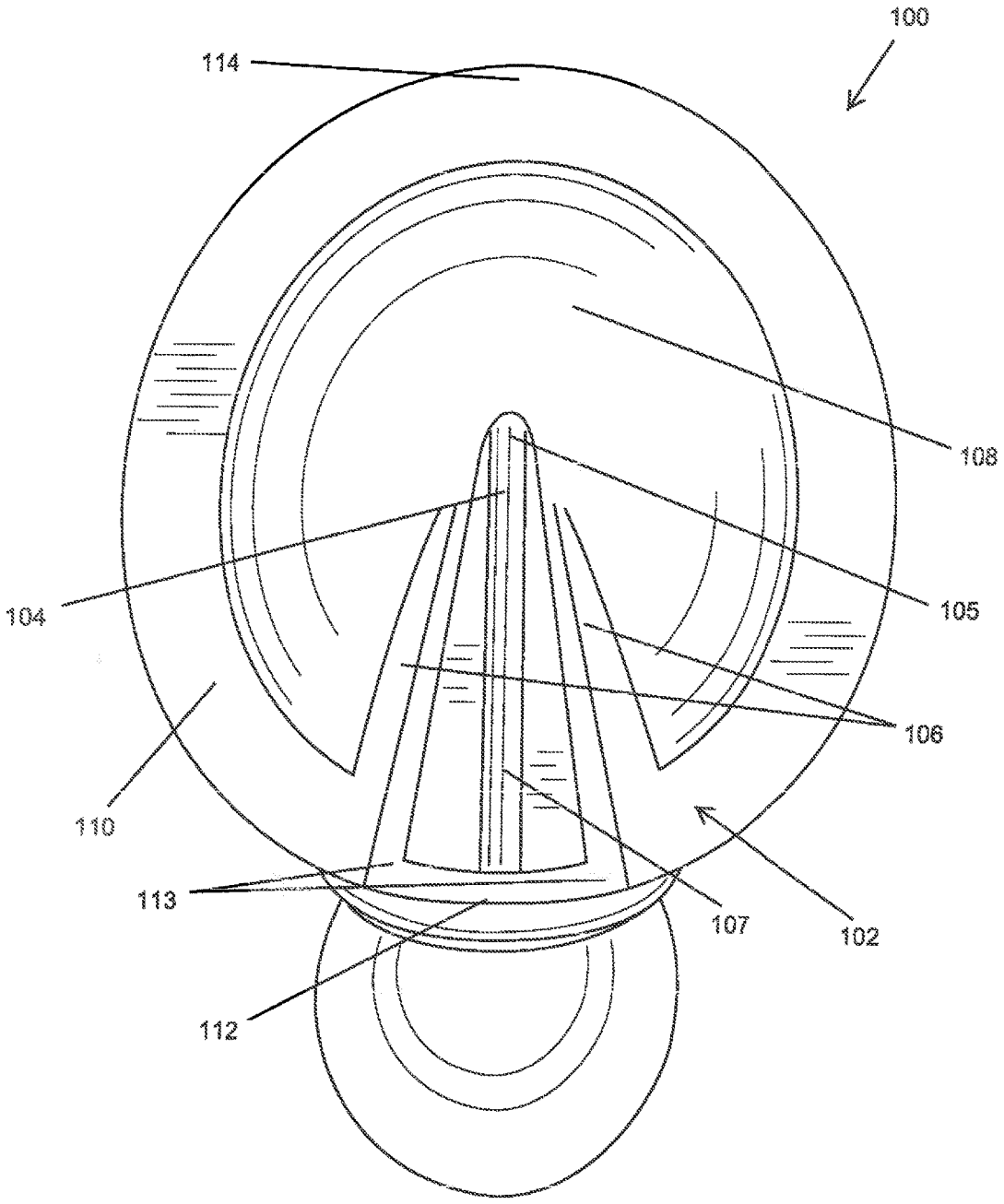
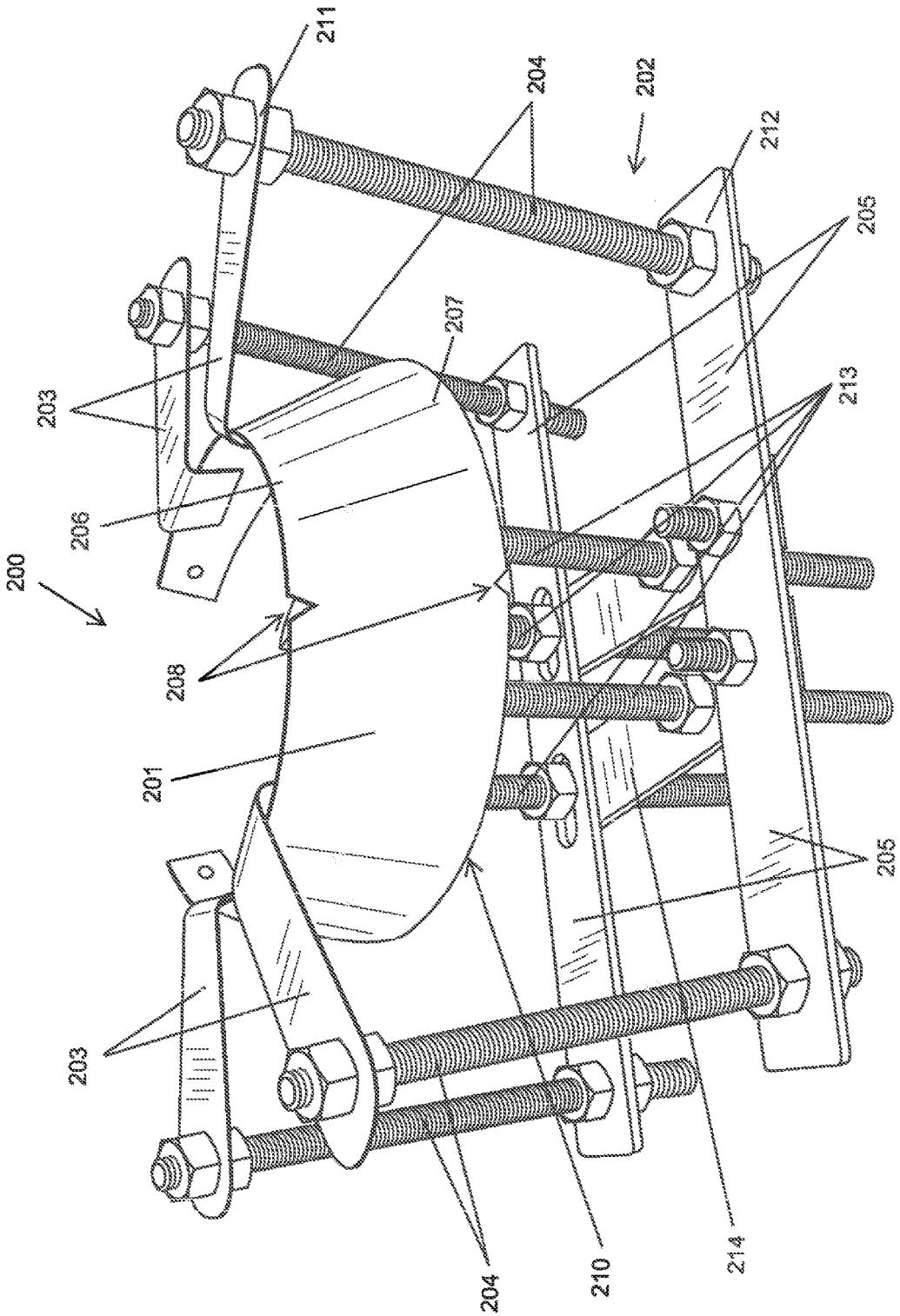


FIG. 1


211
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214

FIG. 2

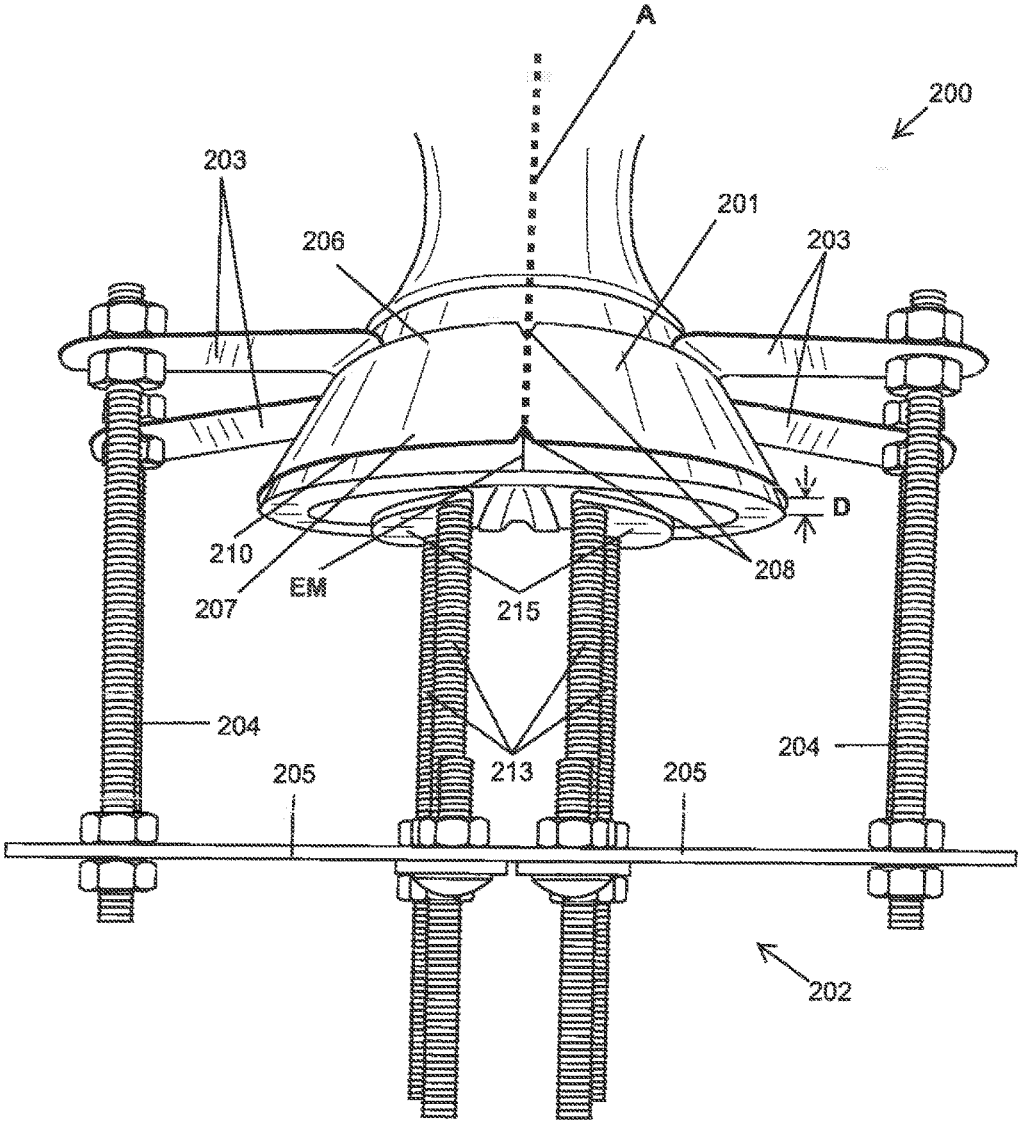


FIG. 3

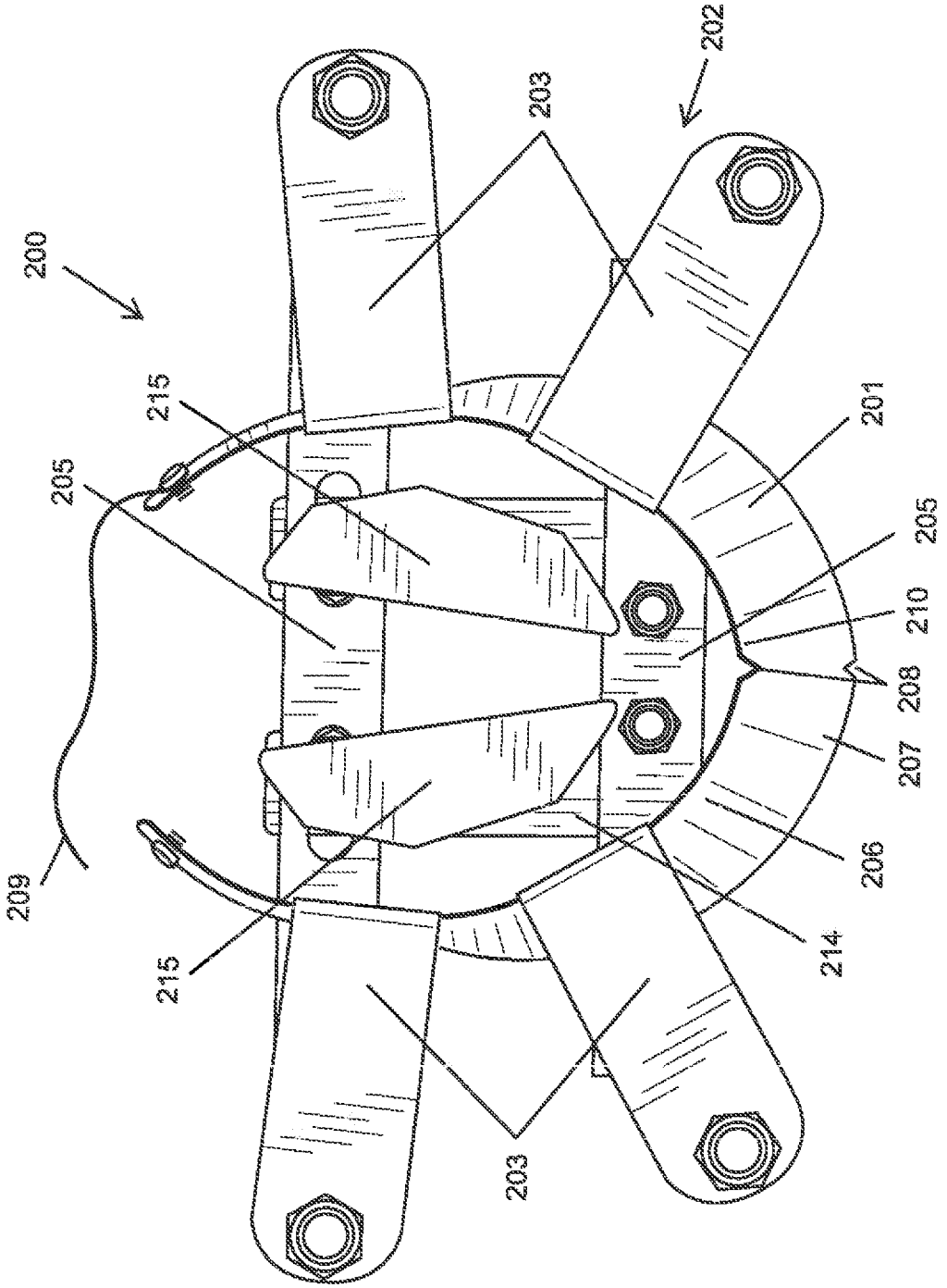


FIG. 4

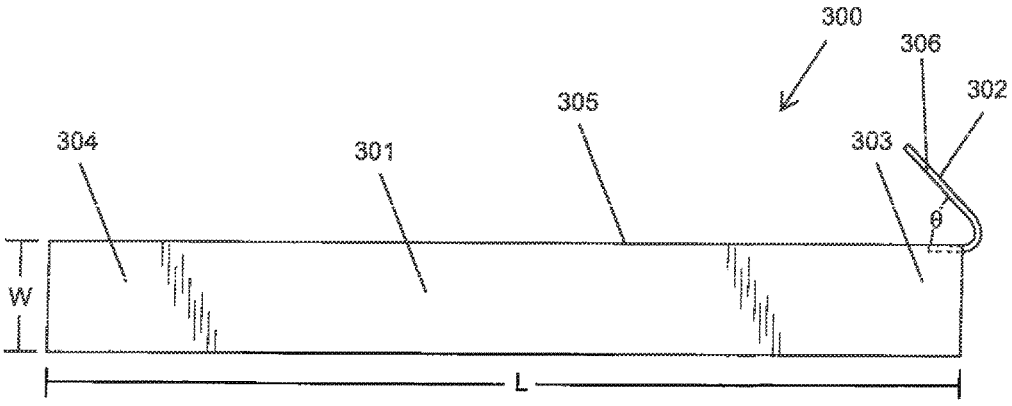


FIG. 5

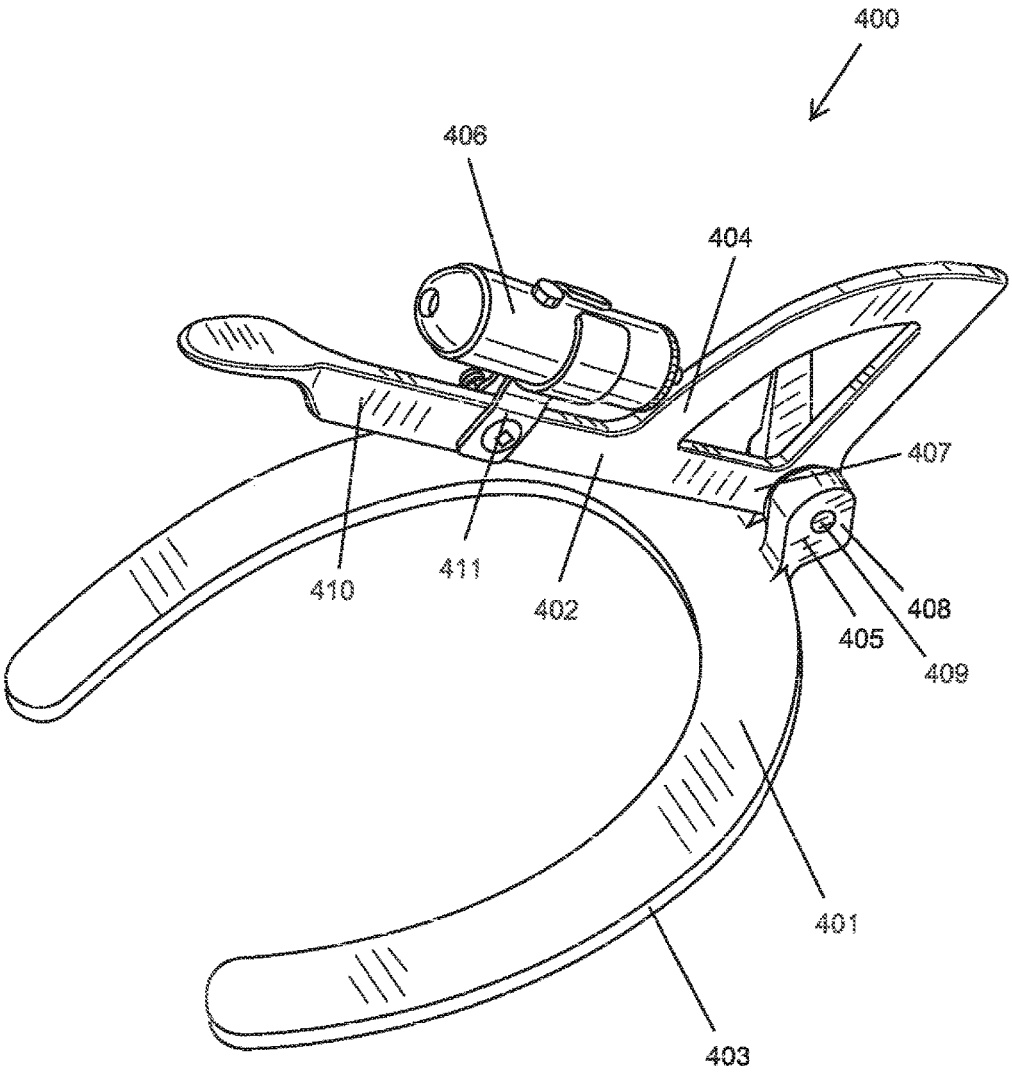


FIG. 6

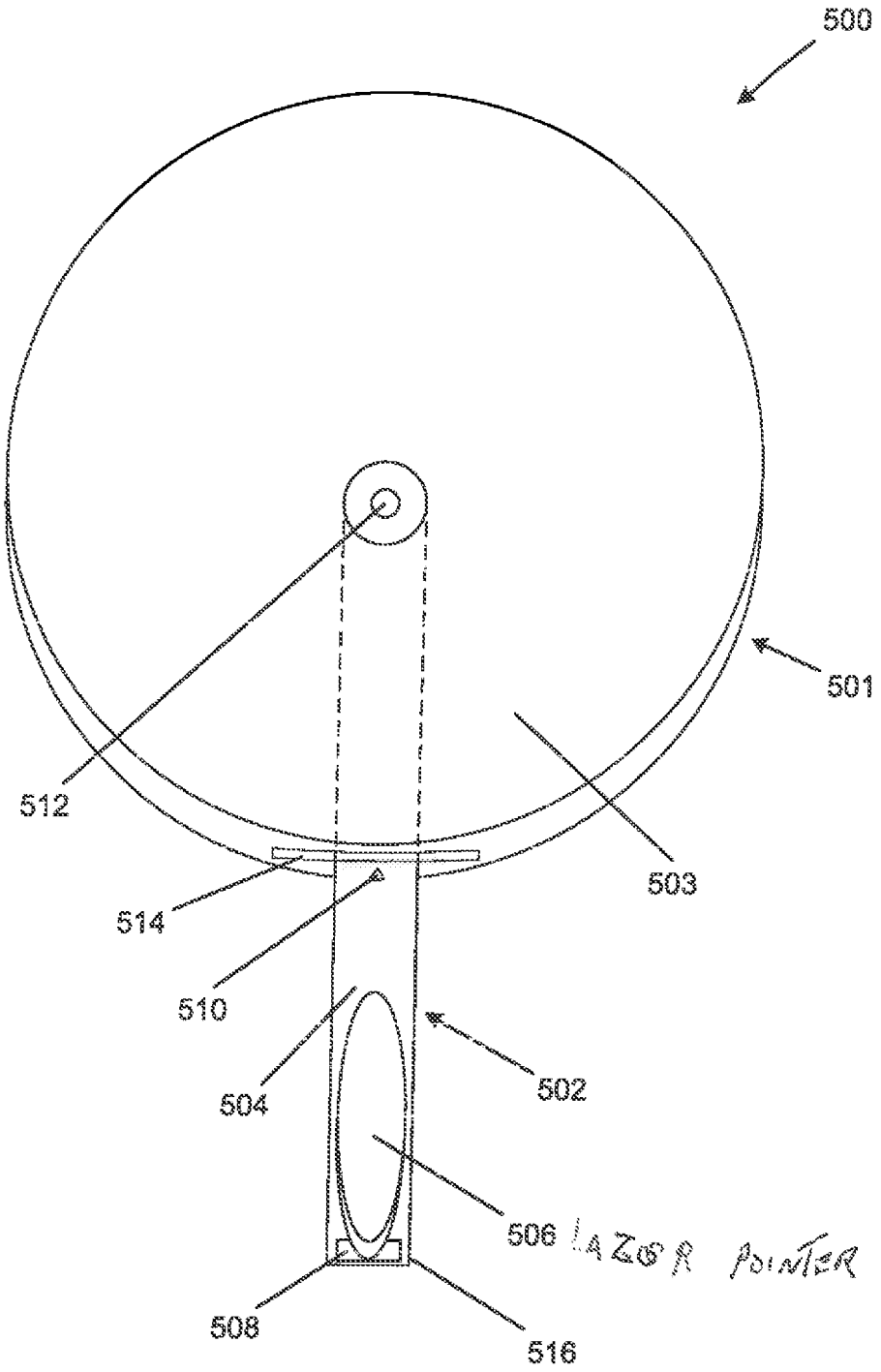
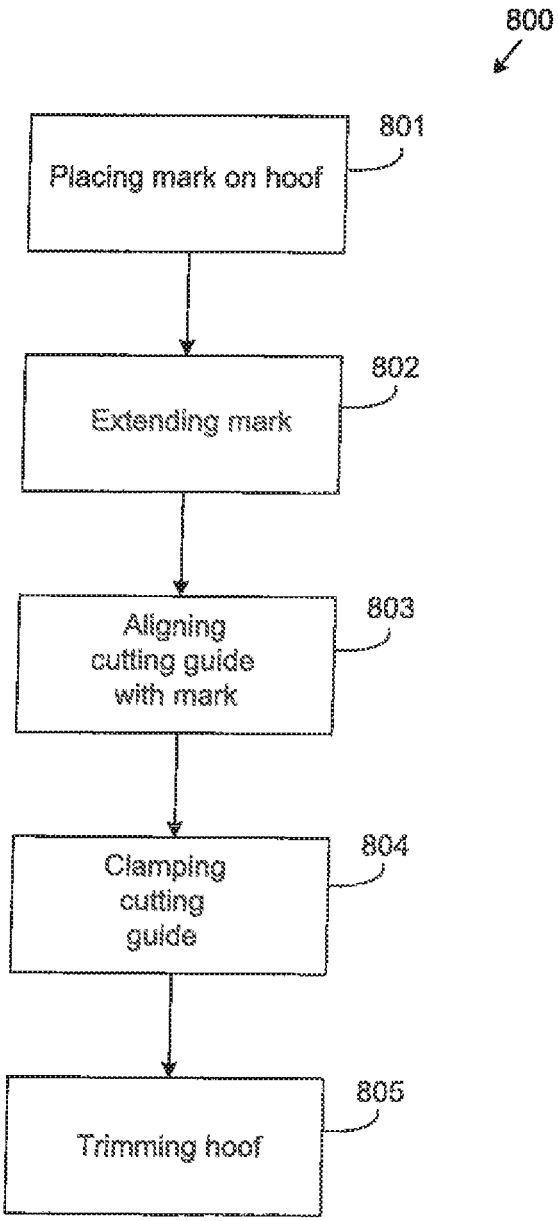


FIG. 7


800
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Placing mark on hoof
802
Extending mark
803
Aligning cutting guide with mark
804
Clamping cutting guide
805
Trimming hoof

FIG. 8

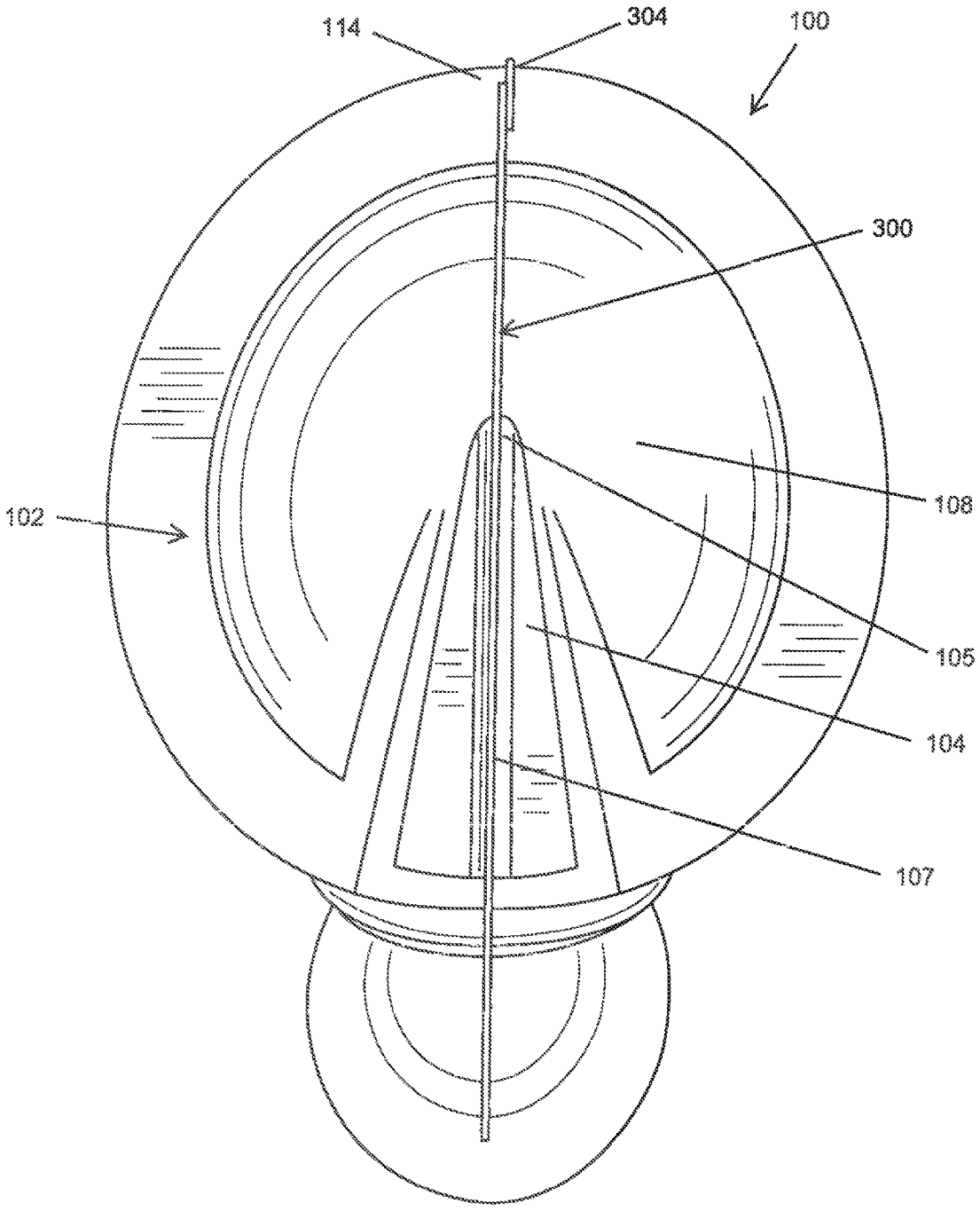

FIG. 9

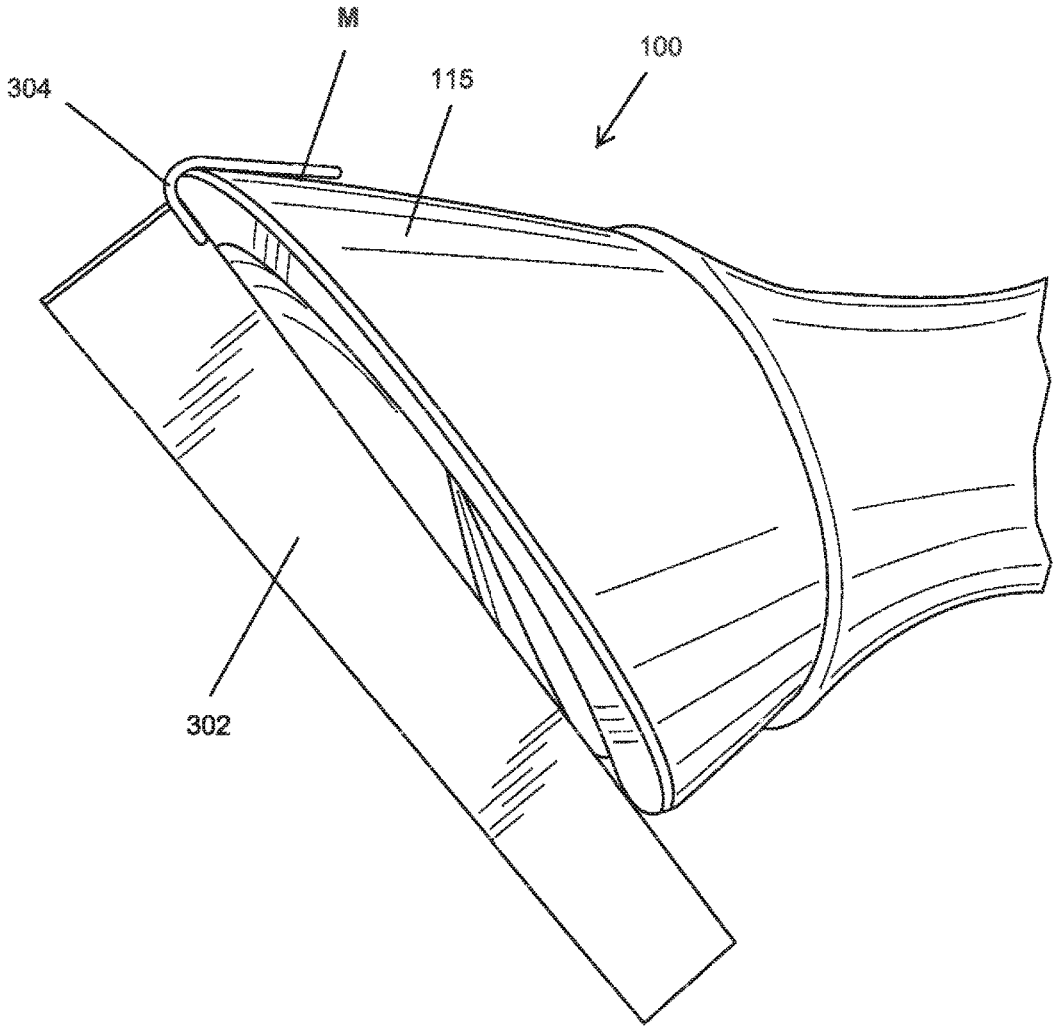

FIG. 10

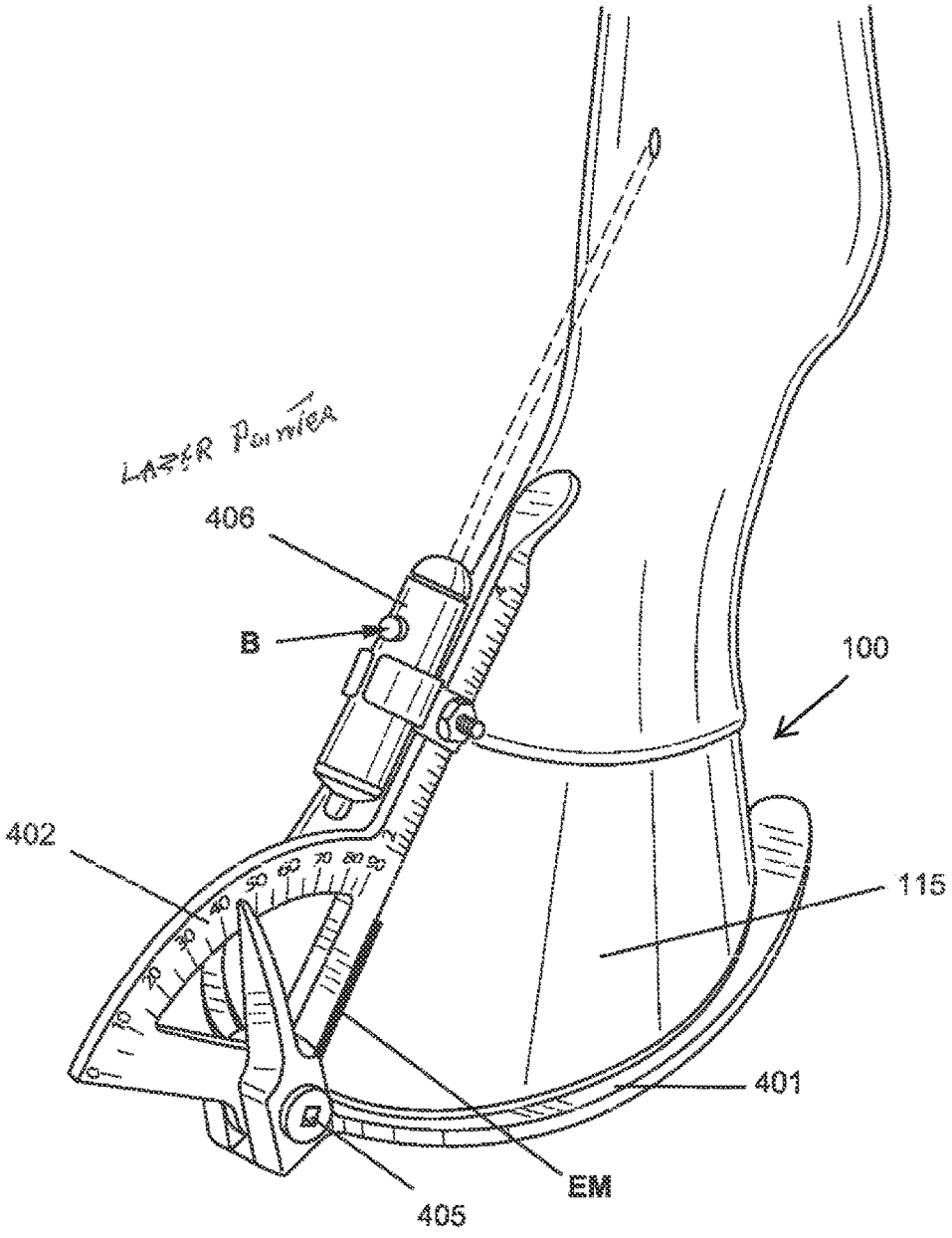

FIG. 11

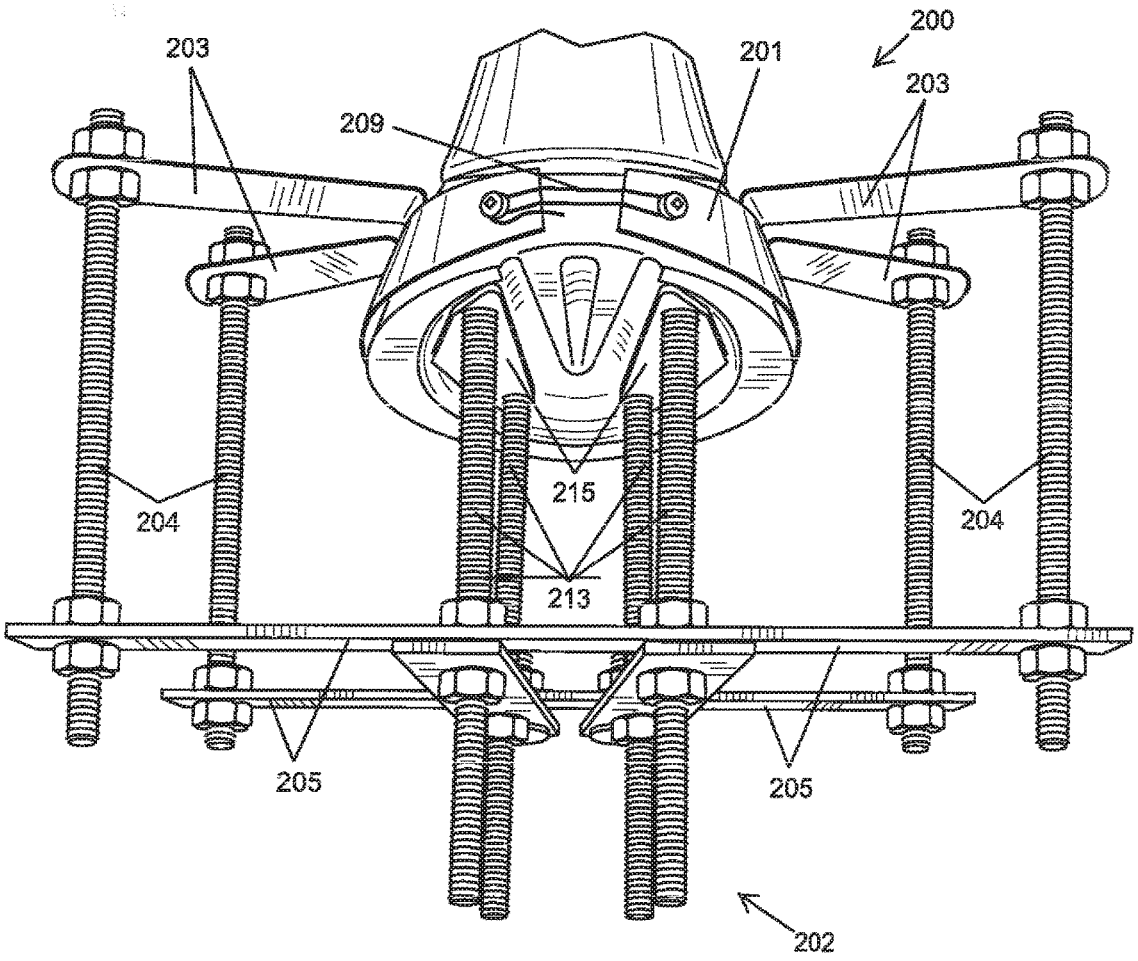

FIG. 12

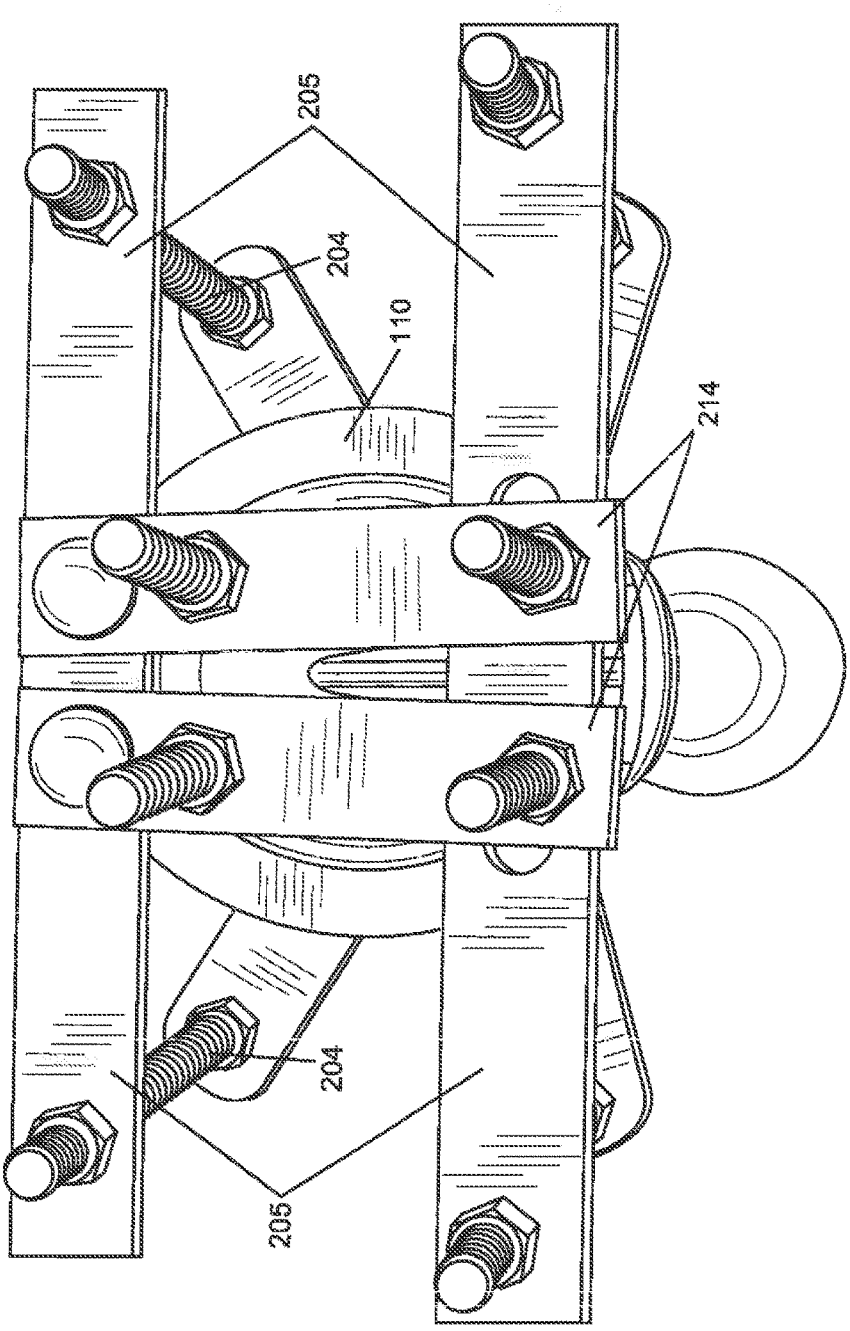

FIG. 13

SYSTEMS METHODS & APPARATUS FOR TRIMMING A HOOF OF A HORSE

TECHNICAL FIELD

[0001] The embodiments disclosed herein relate to systems, methods and apparatus to use relative to a hoof, and in particular to systems, methods and apparatus for trimming a hoof of a horse.

BACKGROUND

[0002] Horses tend to wear shoes to protect their hooves and to prevent damage to their feet. Typically, the wear and tear on the shoe and the normal growth and expansion of the hoof requires filing, trimming and reshoeing every six to eight weeks.

[0003] In accordance with the prior art, prior to installing a horseshoe, a farrier first removes the old shoe then determines the flatness and the plane of the bottom, ground-contacting portion of the hoof (i.e., the solar surface of the hoof). The farrier then makes corrections by peeling, cutting and/or filing to shape and flatten the bottom of the hoof. The width of the hoof is then measured and the correct horseshoe selected, shaped as required and placed against the corrected bottom of the hoof and nailed thereto.

[0004] Errors in shoeing can lead to damage to the horse's leg and foot. For example, unnecessary strain placed on components of the foot such as bones, tendons, ligaments and the like caused by an uneven solar surface may cause the horse to go lame.

[0005] Notwithstanding the importance of the flatness of the foot, the contour of the anterior (or forward) portion of the toe of the hoof is also important. A particular problem that may result from improper horseshoeing is injury to the coffin bone in the foot arising from pressure exerted by the hard, horny overlying hoofwall away from the coffin bone. When a horse lifts its hoof to walk, the heel leaves the ground first and weight it temporarily transferred to the toe. The rising hoof rotates around a transverse axis in the hoof called the break-over axis.

[0006] Prior art methods for preparing the hoof of a horse prior to applying a horseshoe pay particular attention to the lateral width and flatness of the foot. For example, U.S. Pat. No. 4,813,148 discloses a device and method for determining the flatness of a horse's hoof and for making corrections therein.

[0007] U.S. Pat. No. 5,996,698 discloses a farrier rasp that includes means for measuring the width of a horse's hoof at the same time the hoof is being filed and shaped for shoeing, thereby avoiding the necessity for the additional step of lifting the foot of the horse to measure it with a different instrument after filing.

[0008] U.S. Pat. No. 7,165,623 provides a device and a method for identifying the portion of the hoof forward of the break-over plane and for tapering or beveling the forward edge of the lower, ground-contacting surface of the hoof such that the pressure exerted by the hoofwall and the coffin bone is evenly distributed over the interface therebetween, particularly when the horse is walking or running.

[0009] There is a need for systems, methods and apparatus for trimming a horse's hoof for receiving a shoe and particularly systems, methods and apparatus that accurately provide for trimming the hoof based on the horse's own anatomy.,

SUMMARY

[0010] According to some one aspect, there is provided an adjustable cutting guide for trimming a hoof of a horse. The cutting guide includes a hoof band configured to extend around the hoof. The hoof band includes an identifier for aligning the hoof band with a mark on the hoof indicating a longitudinal axis of a leg of the horse, and a cutting edge providing a cutting plane for a cutting tool. The cutting plane is perpendicular to the longitudinal axis of the leg of the horse. The cutting guide also includes a clamping structure for adjustably clamping the hoof band to the hoof at a user selectable, fixed position above a sole of the hoof when the hoof band is aligned with the mark.

[0011] The hoof band may be sized and shaped to conform to an outer surface of the hoof.

[0012] The clamping structure may comprise plates that are configured to press against a sole of the hoof to adjustably damp the hoof band to the hoof.

[0013] The identifier may be a pair of notches that may be vertically aligned with the mark on the hoof when the mark extends between the pair of notches.

[0014] The hoof band may comprise a fastener to secure the cutting guide to the hoof.

[0015] According to another aspect, a system is provided for trimming a hoof of a horse. The system includes a marking tool for placing a mark on the hoof when the marking tool is aligned with a midline of a sole of the hoof; an alignment tool including an indicator to extend towards a longitudinal axis of a leg of the horse for extending the mark in a direction aligned with the longitudinal axis of the leg; and an adjustable cutting guide. The adjustable cutting guide includes a hoof band configured to extend around the hoof. The hoof band includes an identifier for aligning the hoof band with the extended mark on the hoof indicating the longitudinal axis of the leg of the horse; and a cutting edge providing a cutting plane for a cutting tool, the cutting plane being perpendicular to the longitudinal axis of the leg of the horse. The cutting guide also includes a clamping structure for adjustably clamping the hoof band to the hoof at a user selectable, fixed position above the sole of the hoof when the hoof band is aligned with the extended mark.

[0016] The cutting guide may be sized and shaped to conform to an outer surface of the hoof of the horse.

[0017] The clamping structure may comprise plates that are configured to press against the sole of the hoof to adjustably clamp the hoof band to the hoof.

[0018] The identifier may be a pair of notches that may be vertically aligned with the mark on the hoof when the mark extends between the pair of notches.

[0019] The hoof band may comprise a fastener for securing the cutting guide to the hoof.

[0020] The marking tool may comprise a hook configured to extend around a toe of the hoof for placing the mark on the toe of the hoof.

[0021] The indicator may be a laser pointer and activation of the laser pointer may direct laser light towards the leg of the horse.

[0022] According to another aspect, a method is provided for trimming a hoof of a horse. The method includes; placing a mark on the hoof with a marking tool when the marking tool is aligned with a midline of a sole of the hoof; extending the mark in a direction aligned with a longitudinal axis of a leg of the horse with an alignment tool, the alignment tool having an indicator that extends towards the longitudinal

axis of the leg of the horse; aligning an identifier of an adjustable cutting guide with the extended mark; the adjustable cutting guide having a hoof band extending around the hoof of the horse, the hoof band having a cutting edge to provide a cutting plane that is perpendicular to the longitudinal axis of the leg of the horse; adjustably clamping the cutting guide to the hoof at a user selectable, fixed position above a sole of the hoof with a clamping structure when the hoof band is aligned with the mark; and trimming the hoof along the cutting plane.

[0023] The placing the mark on the hoof with the marking tool may include placing the mark on a toe of the hoof.

[0024] The aligning the identifier of the adjustable cutting guide with the extended mark may include securing the band around an outer surface of the hoof.

[0025] The adjustably clamping the cutting guide to the hoof may include tightening the clamping structure of the cutting guide against the hoof.

[0026] The tightening may include extending a support of the clamping structure against a solar surface of the hoof and directing the hoof band against the outer surface of the hoof to clamp the cutting guide to the hoof.

[0027] Other aspects and features will become apparent, to those ordinarily skilled in the art, upon review of the following description of some exemplary embodiments.

BRIEF DESCRIPTION OF THE DRAWINGS

[0028] The drawings included herewith are for illustrating various examples of systems, methods, and apparatus of the present specification, In the drawings:

[0029] FIG. **1** is a bottom view of a horse's hoof showing the solar surface (i.e. the sole) of the horse's hoof;

[0030] FIG. **2** is a perspective view of a cutting guide, according to one embodiment;

[0031] FIG. **3** is a front view of the cutting guide of FIG. **2** applied to a horse's hoof;

[0032] FIG. **4** is a bottom view of the cutting guide and clamping structure of FIG. **2**;

[0033] FIG. **5** is a side view of a marking tool, according to one embodiment;

[0034] FIG. **6** is a perspective view of an alignment tool, according to one embodiment;

[0035] FIG. **7** is a perspective view of another alignment tool, according to another embodiment;

[0036] FIG. **8** is a block diagram of a method of trimming a hoof of a horse, according to one embodiment;

[0037] FIG. **9** is a bottom view of a hoof of a horse and the marking tool of FIG. **5** showing the step of applying the marking tool to a sole of the hoof of the horse, according to one embodiment;

[0038] FIG. **10** is a perspective view of a hoof of a horse and the marking tool of FIG. **5** showing the stop of applying the marking tool to a sole of the hoof of the horse;

[0039] FIG. **11** is a perspective view of a hoof of a horse and the alignment tool of FIG. **6** showing the step of applying the alignment tool to the hoof of the horse, according to one embodiment;

[0040] FIG. **12** is a back view of the cutting guide of FIG. **2** applied to a hoof of a horse, according to one embodiment; and

[0041] FIG. **13** is a bottom view of the cutting guide of FIG. **2** applied to a hoof of a horse.

DETAILED DESCRIPTION

[0042] Various systems, methods and apparatus will be described below to provide an example of each claimed embodiment. No embodiment described below limits any claimed embodiment and any claimed embodiment may cover systems, methods and/or apparatus that differ from those described below. The claimed embodiments are not limited to systems, methods and apparatus having all of the features of any one systems, methods and apparatus described below or to features common to multiple or all of the apparatus described below.

[0043] Referring now generally to FIG. **1**, illustrated therein is a bottom view of a horse's hoof **100** showing a solar surface **102**. The hoof **100** has a frog **104** having an apex **105**. Frog **104** is a wedge-shaped structure of the hoof **100** that sits between two bars **106**, as shown in FIG. **1**. Apex **105** is positioned distal to a toe (e.g. a horn) **114** of the hoof **100** anterior to a heel **112**. Opposite the apex **105**, frog **104** expands forming two bulbs **113** of the heel **112**. The concave area of the hoof distal to the bars **106** and apex **105** is the sole **108**. The sole **108** is enclosed by the hoof wall **110**. The sole **108** represents the part of the hoof **100** that is in contact with the ground when the horse is standing or walking. The composition of the sole **108** differs between species of horse.

[0044] Turning to FIG. **2**, illustrated therein is a perspective view of a cutting guide **200**. Cutting guide **200** generally includes a hoof band **201** and a clamping structure **202**.

[0045] In the embodiment shown in the drawings, hoof band **201** has a first end **206** and a second end **207** and is configured (e.g. sized and shaped) to substantially surround outer surface **115** of a horse's hoof. In one example, hoof band **201** can be sized and shaped to conform to the outer surface **115** of a horse's hoof.

[0046] Clamping structure **202** is for clamping hoof band **201** to a horse's hoof. In particular, clamping structure **202** is for clamping hoof band **201** around outer surface **115** of a horse's hoof. Hoof band **201** is rigidly coupled to clamping structure **202** at first end **206**. In the embodiment shown in the Figures, clamping structure **202** uses pressure exerted against the solar surface **102** of the horse's hoof **100** to clamp the hoof band **201** to the horse's hoof **100** for trimming.

[0047] Hoof band **201** includes an identifier **208** for aligning hoof band **201** (and therefore cutting guide **200**) with a longitudinal A of a leg of the horse having hoof **100** (shown in FIG. **3**) represented by an extended mark EM after the mark M has placed on the hoof (as described below) has been extended in a direction aligned with the longitudinal axis A, thereby forming extended mark EM.

[0048] In the embodiment shown in FIGS. **2** to **4**, identifier **208** is shown as having two notches, each notch positioned at one of first end **206** and second end **207** of hoof band **201**. Identifier **208** can be positioned on hoof band **201** such that identifier **208** is visible to a user positioned in front of the horse. Hoof band **201** is aligned with the longitudinal axis A when the extended mark EM is viewable by the user in each of the notches **208**.

[0049] Hoof band **201** (and therefore cutting guide **200**) can be aligned with the longitudinal axis A (Le, the extended mark EM) by a user (e.g. a farrier) when the user visualizes the extended mark EM in each of the notches of identifier **208**.

[0050] Hoof band **201** also includes a cutting edge **210**. Cutting edge **210** is defined by second end **207** of hoof band

201 and, when hoof band **201** is clamped to a horse's hoof, cutting edge **210** extends substantially around the outer surface **115** of the horse's hoof. Cutting edge **210** provides a cutting plane for a user to use to trim the solar surface **102** of the horse's hoof **100**. When hoof band **201** is aligned with the longitudinal axis A (i.e. the extended mark EM) cutting edge **210** can provide a cutting plane that is perpendicular to the longitudinal axis A.

[0051] Hoof band **201** may also include a fastener **209** (see FIG. **4**) for securing the hoof band **201** (and therefore cutting guide **200**) to the outer surface **115** of the horse's hoof. Herein, the terms "secure" or "securing" when used in the context of the hoof band **201** and/or the cutting guide **200** refers to tightening the hoof band **201** and/or the cutting guide **200** around a horse's hoof to a degree that the hoof band **201** and/or the cutting guide **200** does not fall off of the hoof. In contrast, the terms "clamp" or "clamping" when used in the context of the hoof hand **201** and/or the cutting guide **200** refers to tightening the hoof band **201** and/or the cutting guide **200** around a horse's hoof to a degree that the hoof band **201** and/or the cutting guide **200** will not substantially move while trimming a solar surface **102** of the hoof. In the embodiment shown in FIGS. **2** to **4**, fastener **209** is shown as a wire and hoof band **201** is shown as having two screws for the wire to wrap around to secure the hoof band **201** to the outer surface **115** of the horse's hoof. In this manner, hoof band **209** can be secured to the horse's hoof prior to or after clamping the It should be understood that fastener **209** can have any form appropriate for securing the hoof band **201** to the horse's hoof **100**.

[0052] Cutting edge **210** can provide a selectable portion of the horse's hoof, indicated by distance D in FIG. **3**, for a user to trim prior to applying a horseshoe. For instance, a user may select a distance D between the cutting edge **210** and the solar surface **102** of a horse's hoof for trimming the horse's hoof prior to securing and/or clamping hoof band **201** (and therefore cutting guide **200**) to the horse's hoof. Upon selecting a distance D, the user can clamp the hoof band **201** (and therefore cutting guide **200**) into place by aligning the indicator **208** of the hoof band **201** with the longitudinal axis A of the horse's leg corresponding with the hoof to be trimmed, as indicated by the extended mark EM on the hoof. In one example, to prepare the horse's hoof for applying a horseshoes, a user may choose to clamp the hoof band **201** on to the horse's hoof such that the distance D is between approximately of an inch and ⅝ of an inch.

[0053] In this manner, cutting guide **200** (and hoof band **201**) is adjustable in that the hoof band **201** can be clamped to a horse's hoof (e.g. around outer surface **115** of a horse's hoof) at various user selectable, fixed positions. Specifically, clamping structure **202** provides that hoof band **201** can be clamped to a horse's hoof at a user selectable distance above solar surface **102** of the horse's hoof, as described in greater detail below. Clamping structure **202** can take any appropriate form for clamping the cutting guide **200** to a horse's hoof provided that the clamping structure **202** does not impede access to the solar surface **102** for a user to trim the horse's hoof when the band **201** is at a fixed position. In the embodiment shown in FIGS. **2** to **4**, clamping structure **202** generally includes a plurality of upper supports **203**, a plurality of external connecting rods **204**, a plurality of lower supports **205**, a plurality of internal connecting rods **213** and plates **215** (see FIGS. **3** and **4**).

[0054] The plurality of upper supports **203** may include four individual supports **203** as shown in the Figures, each individual support rigidly coupled to and extending from first end **206** of hoof band **201**. Each upper support **203** may be substantially evenly spaced from an adjacent upper support around hoof band **201**. In this manner, identifier **208** may be substantially free for viewing by the user of cutting guide **200**. Upper supports **203** are shown as being substantially planar, but can have any appropriate shape for supporting hoof band **201** against the outer surface **115** of the horse's hoof.

[0055] Each upper support **203** of the plurality of upper supports may be coupled to a respective external connecting rod **204** of the plurality of external connecting rods at a first end **211**. Each external connecting rod **204** of the plurality of external connecting rods may also he coupled to a respective lower support **205** at a second end **212** of the external connecting rod **204**. In the embodiments shown in FIGS. **2** to **4**, external connecting rods **204** are shown as threaded rods that are coupled to each respective upper support **203** and each respective lower support **205** via two nuts (as shown in FIGS. **3** and **4**). It should be noted that external connecting rods **204** may be any appropriate connector for coupling a respective upper support **203** to a respective lower support **205**.

[0056] Each lower support **205** may also coupled to a respective internal connecting rod **213**. in the embodiments shown in FIGS. **2** to **4**, each lower support **205** may be coupled to a respective internal connecting rod **213** via an internal support **214**. internal connecting rods **413** are shown as threaded rods in the Figures, but can be any appropriate connector for coupling lower supports **205** to plates **215**.

[0057] In the embodiment shown in the Figures, clamping structure **202** clamps hoof band **201** on the outer surface **115** of the horse's hoof **100** by plates **215** exerting an force against the solar surface **102** of a horse's hoof as the hoof band **201** exerts a corresponding force on the outer surface **115** of the horse's hoof. Plates **215** (as shown in FIG. **4**), may be thin, planar constructs that are sized and shaped to press against the solar surface **102** (e.g. the sole **108**) of a horse's hoof.

[0058] When the identifier **208** of hoof band **201** is aligned with the longitudinal axis A, as represented by the extended mark EM on the horse's hoof, in one embodiment, the hoof band **201** (and therefore cutting guide **200**) may be clamped into place onto a horse's hoof by tightening nuts on the external and/or internal connecting rods **204**, **213** such that plates **215** exert a force upwards against solar surface **102** of a horse's hoof. When hoof band **201** is cramped onto a horse's hoof, a portion of the horse's hoof extends below cutting edge **210** of hoof band **201** for a user to trim.

[0059] Referring now to FIG. **5**, illustrated therein is a marking tool **300** according to one exemplary embodiment. The marking tool **300** generally includes a bar **301** and a hook **302**.

[0060] Bar **301** has a first end **303** and a second end **304** spaced apart from first end **303**. As shown in FIG. **5**, bar **301** of marking tool **300** has a thin, elongated shape having a length L and a width W. with length L generally being greater than width W. Length L of bar **301** is preferably at least as long as a length of a horse's hoof to provide for bar **301** to extend from toe **114** to heel **112** of the horse's hoof **100** when the marking tool **300** is pressed against solar surface **102** of the horse's hoof **100**.

[0061] As shown in FIG. **5**, bar **301** is a thin, elongated object defining a straight edge **305**. In this manner, bar **301** can be pressed against a solar surface of a horse's hoof **100** by a user such that the straight edge **305** is aligned with a midline of the hoof **100** (see **107** on FIG. **1**). Midline **107** is an imaginary line extending between the toe **114** of the horse's hoof to the heel **112** of the horse's hoof, directly through apex **105** of frog **104**, dividing the hoof into two approximately equal sized portions. Bar **301** is thin to provide for the user to view of a majority of the solar surface **102** while aligning the marking tool **300** with the midline **107** and to improve the accuracy of the user aligning the marking tool **300** with the midline **107**.

[0062] Bar **301** of the marking tool **300** can be made from any appropriately rigid material, such as but not limited to steel, aluminum or the like.

[0063] Hook **302** is coupled to bar **301** adjacent to first end **302** and extends from first end **302** in a direction towards edge **305**, lateral to first end **303**, as shown in FIG. **5**. An angle θ of hook **302** relative to bar **301** (specifically relative to edge **305**) can be selected to provide for marking a portion of the horse's hoof when the body **302**, specifically edge **305**, is pressed against the solar surface **102** of the horse's hoof **100**. For example, as shown in FIGS. **9** and **10**, described in greater detail below, hook **302** extends from first end **303** at an angle **0** approximately conforming to an angle between the ground and an outer surface **115** (see FIG. **10**) of a horse's hoof for placing a mark M (see also FIG. **10**) on the outer surface **115** of the horse's hoof.

[0064] Hook **302** may have a sharpened portion **306** such that, upon pressing marking tool **300** against the solar surface **102** of a horse's hoof and applying a force in a direction from the hook **302** towards the horse's hoof **100**, sharpened portion **306** can mark (e.g. scratch, dent, or the like) a portion of the horse's hoof. In the embodiment shown in the Figures, hook **302** has a sharpened portion **306** that, upon pressing marking tool **300** against the solar surface **102** of a horse's hoof **100** and applying a force downwards from the hook **302** towards the outer surface **115** (see FIG. **10**) of the horse's hoof **100**, can mark (e.g. scratch, dent, or the like) the outer surface **115** of the horse's hoof adjacent to toe **114** of the horse's hoof.

[0065] The hook **302** of the marking tool **300** can be made from any appropriate material for marking the outer surface **115** of the horse's hoof, as described above. For example, the hook **302** can be made from steel or the like.

[0066] Referring now generally to see FIG. **6**, illustrated therein is a perspective view of an alignment tool **400** according to one embodiment. Alignment tool **400** generally includes a base **401** movably coupled to an alignment mechanism **402**.

[0067] Base **401** has a body **403** that is generally planar shaped. In the embodiment shown in FIG. **6**, body **403** has a U-shape much like that of a traditional horseshoe. Accordingly, body **403** generally has a width and a length approximately equal to the width and the length of a horse's hoof so that a horse can stand on the base **401** during use of the alignment tool **400**, In this manner, base **401** is sized and shaped to be placed against a solar surface **102** of a horse's hoof as alignment mechanism **402** is used to extend the mark M placed on a portion of the horse's hoof, such as the outside surface **115** of the horse's hoof, towards a lower limb of the horse. Further, base **401** is also generally planar to provide for ease of placement against the solar surface **102** of a horse's hoof. Base **401** can be made from any appropriately rigid material, such as but not limited to steel or the like.

[0068] Alignment mechanism **402** generally includes an arm **404** and an indicator **406**, In the embodiment shown in FIG. **6**, arm **404** is coupled to and rotatable about base **401** at a lower portion **407** of arm **404**. Arm **404** is hingedly coupled to body **403** of base **401** such as by a hinge **405**. Hinge **405** may, for example, include two extensions **408**, each defining an aperture there though, rigidly coupled to base **401** and positioned on either side of arm **402**. in this embodiment, a pin **409** may pass through each of the apertures the respective extensions **409** as well as through a corresponding aperture of alignment mechanism **402** there between to hingedly couple alignment mechanism **402** to base **401**.

[0069] Indicator **406** of alignment tool **400** is for extending the mark M provided on a horse's hoof by the marking tool **300** in a direction towards a lower limb of the horse. As shown in FIG. **6**, indicator **406** may be coupled to arm **402** at an upper portion **410**. Indicator **406** is positioned to extend toward a lower limb of the horse for extending the mark M on the horse's hoof in a direction towards the lower limb of the horse (see FIG. **6**).

[0070] For example, in the embodiment shown in the Figures, indicator **406** is shown as a laser pointer coupled to arm **402** by holder **412**. Upon placement of a horse's hoof on base **401** with the toe **114** of the hoof positioned adjacent to hinge **405**, activation of indicator **406** directs laser light towards the lower limb of the horse. Extension of the mark M on the hoof of the horse in the direction of the laser light towards the lower limb of the horse (e.g. such that the laser light impacts the cannon bone (i.e. the middle portion of the lower limb visible to the farrier)) can provide a reference for determining an accurate plane of contact between the hoof and an underlying surface. Use of the alignment tool **400** is described in greater detail below with reference to FIG. **11**.

[0071] Referring now to FIG. **7**, illustrated therein is a perspective view of another embodiment of an alignment tool. In this embodiment, alignment tool **500** generally includes a base **501** moveably coupled to an alignment mechanism **502**.

[0072] Base **501** has a body **503** that is generally planar shaped. in the embodiment shown in FIG. **7**, body **403** has a generally disc-like shape where body **403** is hollow. Body **503** is generally sized and shaped so that a horse can stand on the base **501** during use of the alignment tool **500**. For example, base **501** is sized and shaped to be placed against a solar surface **102** of a horse's hoof as alignment mechanism **502** is used to extend the mark M placed on a portion of the horse's hoof, such as the outside surface **115** of the horse's hoof, in a direction towards a lower limb of the horse. Further, base **501** is also generally planar to provide for ease of placement against the solar surface **102** of a horse's hoof. Base **501** can be made from any appropriately rigid material, such as but not limited to steel or the like.

[0073] Alignment mechanism **502** generally includes an arm **504** and an indicator **506**. Arm **504** is rotatably coupled to and extends from base **501**. In the embodiment shown in FIG. **7**, arm **504** is coupled to base **501** at rotation point **512** and extends from rotation point **512** through a slot **514** in body **503** of base **501**. Arm **504** is rotatable about rotation point **512** within slot **514** such that slot **514** bounds arm **504** and restricts rotation of arm **504** about rotation point **512**.

Arm **504** is rotatable about rotation point **512** to provide for extending indicator **506** towards a leg of the horse when the horse's hoof is placed on base **501**.

[0074] As shown in FIG. **7**, arm **504** also includes a guide **510**. Guide **510** is positioned on arm **504** adjacent to base **501**. Guide **510** provides a visual reference for a user to align the arm **504** with the mark M placed on the horse's hoof when the horse's hoof is placed on base **501**. The arm **504** and the mark M are aligned when the mark M of the horse's hoof is directly adjacent guide **510**.

[0075] Indicator **506** is hingedly coupled to arm **504** at a free end **516** of arm **504** extending through slot **514**. As shown in FIG. **7**, indicator **506** can be hingedly coupled to arm **504** extending from base **501** by a hinge **508** such that indicator **506** extends towards body **503** of base **501**.

[0076] Indicator **506** of alignment tool **500** is or extending the mark M provided on a horse's hoof by the marking tool **300** in a direction towards a leg of the horse. In this manner, alignment tool **500** can provide for extending mark M on the horse's hoof into extended mark EM, where extended mark EM represents longitudinal axis A of the leg of the horse corresponding to the hoof placed on base **501**. As shown in FIG. **7**, indicator **506** may be coupled to arm **504** at a portion **516** extending from base **501**. Indicator **506** is positioned on arm **504** to be able to extend toward the leg of the horse for extending the mark M on the horse's hoof in a direction parallel to (e.g. representing) the longitudinal axis A of the leg of the horse corresponding to the hoof **100** placed on the base **501**.

[0077] Referring now to FIG. **8**, a method **800** is also provided for trimming a horse's hoof. Method **800** may include the steps of: placing a mark on the hoof with a marking tool when the marking tool is aligned with a midline of a sole of the hoof (step **801**); extending the mark in a direction aligned with longitudinal axis A of a leg of the horse with an alignment tool, the alignment tool having an indicator that extends towards the longitudinal axis A (step **802**); aligning an identifier of an adjustable cuffing guide with the extended mark; the adjustable cutting guide having a hoof band extending around the hoof of the horse, the hoof band having a cutting edge to provide a cutting plane that is perpendicular to the longitudinal axis A (step **803**); adjustably clamping the cutting guide to the hoof at a user selectable, fixed position above a sole of the hoof with a damping structure when the hoof band is aligned with the mark (step **804**); and trimming the hoof along the cutting plane with a cutting tool(step **805**).

[0078] At step **801**, the marking tool **300** is placed against solar surface **102** of a horse's hoof. A bottom view of a horse's hoof **100** with the marking tool placed against solar surface **102** is shown in FIG. **8**. To place a mark M on the hoof **100**, marking tool **300** is first aligned with a midline **107** of the hoof **100** passing through apex **105** of frog **104**. When the marking tool **300** is positioned to be aligned with midline **107**, marking tool **300** is said to be horizontally aligned with hoof **100** (i.e. marking tool **300** divides solar surface **102** into two approximately evenly sized halves). In this embodiment, while maintaining the marking tool in this horizontally aligned position with midline **107**, pressure can be applied to a portion of the marking tool **300** to place a mark M on the horse's hoof **100**. in the embodiment shown in FIGS. **9** and **10**, for example, pressure can be manually applied to hook **304** of marking tool **300** as hook **304** extends around toe **114** of the horse's hoof against the outer surface **115** of the horse's hoof **100** to place a mark M on outer surface **115** of the horse's hoof **100** adjacent to toe **114**. Mark M is said to be horizontally aligned on the horse's hoof **100** when mark M is place on the horse's hoof **100** when the marking tool **300** is horizontally aligned with midline **107**.

[0079] At step **802**, described below with reference to FIG. **11**, an alignment tool **400** can be used to extend the mark M along the hoof **100** in a direction towards a lower limb of the horse, As previously described, alignment tool **400** includes base **401** movably coupled to alignment mechanism **402**, and the alignment mechanism **402** has an indicator **406** that, when activated, extends towards a leg of the horse having the hoof **100** (e.g. directly towards the cannon bone of the leg having the hoof **100**) to provide a reference line for extending the mark M. Mark M can therefore be extended by a user using alignment tool **400** to create extended mark EM being parallel to the longitudinal axis A of the leg of the horse having hoof **100**. Extended mark EM on hoof **100** provides for a user to align the identifier **208** of the hoof band **201** (and therefore the cutting guide **200**) with the longitudinal axis A of the leg having hoof **100**. Cutting edge **210** of hoof band **201** provides a cutting plane for a user to use as a reference plane when trimming the solar surface **102** of the hoof **100** when the hoof band **201** (and therefore the cutting guide **200**) is aligned with the longitudinal axis A of the leg having hoof **100**,

[0080] As shown in FIG. **11**, to extend the mark Mon hoof **100**, the base **401** of alignment tool **400** is placed against solar surface **102** of the horse's hoof with arm **402** aligned with the mark M. Specifically, in the embodiment shown in FIG. **11**, arm **402** is shown aligned with the mark M placed on outer surface **115** of the horse's hoof **100**. Arm **402** of the alignment mechanism **400** can then be rotated to rest against outer surface **115** of the horse's hoof **100**. While maintaining base **401** against the solar surface **102** and arm **402** aligned with mark M, indicator **408** can be activated (e.g. by pressing button B shown on FIG. **11**) to direct indicator **406** towards the lower limb of the horse. In the example shown in FIG. **11**, the indicator **406** is a laser pointer and, when activated, directs laser light towards the lower limb of the horse. When the indicator **406** extends directly towards the lower limb of the horse (e.g. directly towards the cannon bone of the lower limb of the horse having the hoof **100**), the mark M can be manually extended along arm **402** to provide extended mark EM (as shown in FIG. **11**).

[0081] When indicator **406** is activated, if the light (for example) extending from the indicator **406** is not directed towards (i.e. does not strike) the lower limb of the horse having the hoof **100**, the user can manually adjust the placement of base **401** against solar surface **102** of the hoof **100** until the light is directed towards (Le. does strike) the lower limb of the horse haying the hoof **100**. When the light is directed towards (i.e. does strike) the lower limb of the horse having the hoof **100** (e.g. directly strikes the cannon bone of the lower limb of the horse having the hoof **100**), the mark M can be extended to produce extended mark EM.

[0082] At step **803**, hoof band **201** is applied to the hoof **100**. As previously described, hoof band **201** is adjustable and extends around the hoof **100** of the horse. In one example, as shown in FIG. **12**, at step **703** hoof band **201** can be secured to hoof **100** by tightening fastener **209** of hoof band **201**. Hoof band **201** can then be aligned with the extended mark EM. For instance, in the embodiment shown

in the Figures, identifier **208** of the hoof band **201** can be vertically aligned with the extended mark EM on the hoof **100** by visualizing the extended mark EM in each of the notches of identifier **208**.

[0083] At step **804**, after vertically aligned the hoof band **201** with the extended mark EM, hoof band **201** (and therefore cutting guide **200**) is clamped to the hoof **100** using clamping structure **202**. For example, hoof band **201** (and therefore cutting guide **200**) can be clamped onto hoof **100** by tightening nuts on the external and/or internal connecting rods **204**, **213** such that plates **215** exert a force upwards against solar surface **102** of a horse's hoof. As previously described, cutting edge **210** provides a cutting plane for the user to use when trimming the hoof of the horse to apply a horse shoe that is perpendicular to the longitudinal axis A of the leg of the horse. When hoof band **201** is clamped onto a horse's hoof, a portion of the horse's hoof extends below cutting edge **210** of hoof band **201** for a user to trim. Hoof band **201** can be clamped to hoof **100** with the cutting edge **210** spaced a selectable distance D (see FIG. **3**) above the solar surface **102** of the hoof **100**. In this manner, the user can select an amount of the hoof **100** to trim while providing an solar surface **102** that, when trimmed, is perpendicular to the longitudinal axis A of the leg of the horse.

[0084] At step **805**, the hoof **100** is trimmed along the cutting plane provided by the cutting edge **210** of the hoof band **201**. In one embodiment, the hoof **100** can be trimmed using a cutting toot The cutting tool can be any appropriate tool for trimming the hoof of the horse.

[0085] While the above description provides examples of one or more apparatus, methods, or systems, it will be appreciated that other apparatus, methods, or systems may be within the scope of the claims as interpreted by one of skill in the art.

1. An adjustable cutting guide for trimming a hoof of a horse, the cutting guide comprising:

a) a hoof band configured to extend around the hoof, the hoof band comprising:

i) an identifier for aligning the hoof band with a mark on the hoof indicating a longitudinal axis of a leg of the horse; and

ii) a cutting edge providing a cutting plane for a cutting tool, the cutting plane being perpendicular to the longitudinal axis of the leg of the horse; and

b) a clamping structure for adjustably clamping the hoof band to the hoof at a user selectable, fixed position above a sole of the hoof when the hoof band is aligned with the mark.

2. The cutting guide of claim **1**. wherein the hoof band is sized and shaped to conform to an outer surface of the hoof.

3. The cutting guide of claim **1**, wherein the clamping structure comprises plates that are configured to press against a sole of the hoof to adjustably clamp the hoof band to the hoof.

4. The cutting guide of claim **1**, wherein the identifier is a pair of notches and the identifier is vertically aligned with the mark on the hoof when the mark extends between the pair of notches.

5. The cutting guide of claim **1**, wherein the hoof band comprises a fastener to secure the cutting guide to the hoof.

6. A system for trimming a hoof of a horse, the system comprising:

a) a marking tool for placing a mark on the hoof when the marking tool is aligned with a midline of a sole of the hoof;

b) an alignment tool comprising an indicator to extend towards a longitudinal axis of a leg of the horse for extending the mark in a direction aligned with the longitudinal axis of the leg; and

c) an adjustable cutting guide comprising:

i) a hoof band configured to extend around the hoof, the hoof band comprising:

i. an identifier for aligning the hoof band with the extended mark on the hoof indicating the longitudinal axis of the leg of the horse; and

ii. a cutting edge providing a cutting plane for a cutting tool, the cutting plane being perpendicular to the longitudinal axis of the leg of the horse; and

ii) a clamping structure for adjustably clamping the hoof band to the hoof at a user selectable, fixed position above the sole of the hoof when the hoof band is aligned with the extended mark. The system of claim **6**, wherein the cutting guide is sized and shaped to conform to an outer surface of the hoof of the horse.

8. The system of claim **6**, wherein the clamping structure comprises plates that are configured to press against the sole of the hoof to adjustably damp the hoof band to the hoof,

9. The system of claim **5**, wherein the identifier is a pair of notches and the identifier is vertically aligned with the mark on the hoof when the mark extends between the pair of notches.

10. The system of claim **6**, wherein the hoof band comprises a fastener for securing the cutting guide to the hoof.

11. The system of claim **6**, wherein the marking tool comprises a hook configured to extend around a toe of the hoof for placing the mark on the toe of the hoof.

12. The system of claim **6**, wherein the indicator is a laser pointer and activation of the laser pointer directs laser light towards the leg of the horse.

13. A method for trimming a hoof of a horse, the method comprising:

a) placing a mark on the hoof with a marking tool when the marking tool is aligned with a midline of a sole of the hoof;

b) extending the mark in a direction aligned with a longitudinal axis of a leg of the horse with an alignment tool. the alignment tool having an indicator that extends towards the longitudinal axis of the leg of the horse;

c) aligning an identifier of an adjustable cutting guide with the extended mark, the adjustable cutting guide having a hoof band extending around the hoof of the horse, the hoof band having a cutting edge to provide a cutting plane that is perpendicular to the longitudinal axis of the leg of the horse;

d) adjustably clamping the cutting guide to the hoof at a user selectable, fixed position above a sole of the hoof with a clamping structure when the hoof band is aligned with the mark; and

e) trimming the hoof along the cutting plane.

14. The method of claim **13**, wherein the placing the mark on the hoof with the marking tool includes placing the mark on a toe of the hoof.

15. The method of claim **13**, wherein the aligning the identifier of the adjustable cutting guide with the extended mark includes securing the band around an outer surface of the hoof.

16. The method of claim **13**, wherein the adjustably damping the cutting guide to the hoof includes tightening the clamping structure of the cutting guide against the hoof.

17. The method of claim **16**, wherein the tightening includes extending a support of the clamping structure against a solar surface of the hoof and directing the hoof band against the outer surface of the hoof to damp the cutting guide to the hoof.

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