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Hyde et al.

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(54) **HYDRAULIC TOOL WITH INDICATOR LIGHT**

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(73) Assignee: **Milwaukee Electric Tool Corporation**, Brookfield, WI (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

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(60) Provisional application No. 63/012,506, filed on Apr. 20, 2020.

(51) **Int. Cl.**
B25F 5/00 (2006.01)
B25F 3/00 (2006.01)

(52) **U.S. Cl.**
CPC ***B25F 5/005*** (2013.01); ***B25F 3/00*** (2013.01)

(58) **Field of Classification Search**
CPC .. B25F 5/008; B25F 5/021; B25F 3/00; B25B 23/18
See application file for complete search history.

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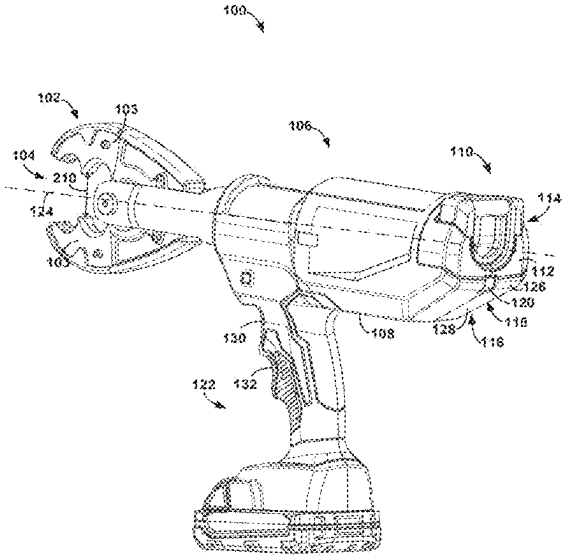
(57) **ABSTRACT**

A hydraulic tool includes a head at a first end of the hydraulic tool, where the head is configured to apply a mechanical force to a work piece; a body including a first surface; a back portion including: a second surface at a second end of the hydraulic tool that is opposite the first end; a third surface that is between the first surface and the second surface, where the third surface is inclined with respect to the first surface and the second surface; an indicator light; and a window, at least a portion of which is positioned on the third surface, where the window covers the indicator light; and a grip that extends from the body away from the first surface.

20 Claims, 19 Drawing Sheets



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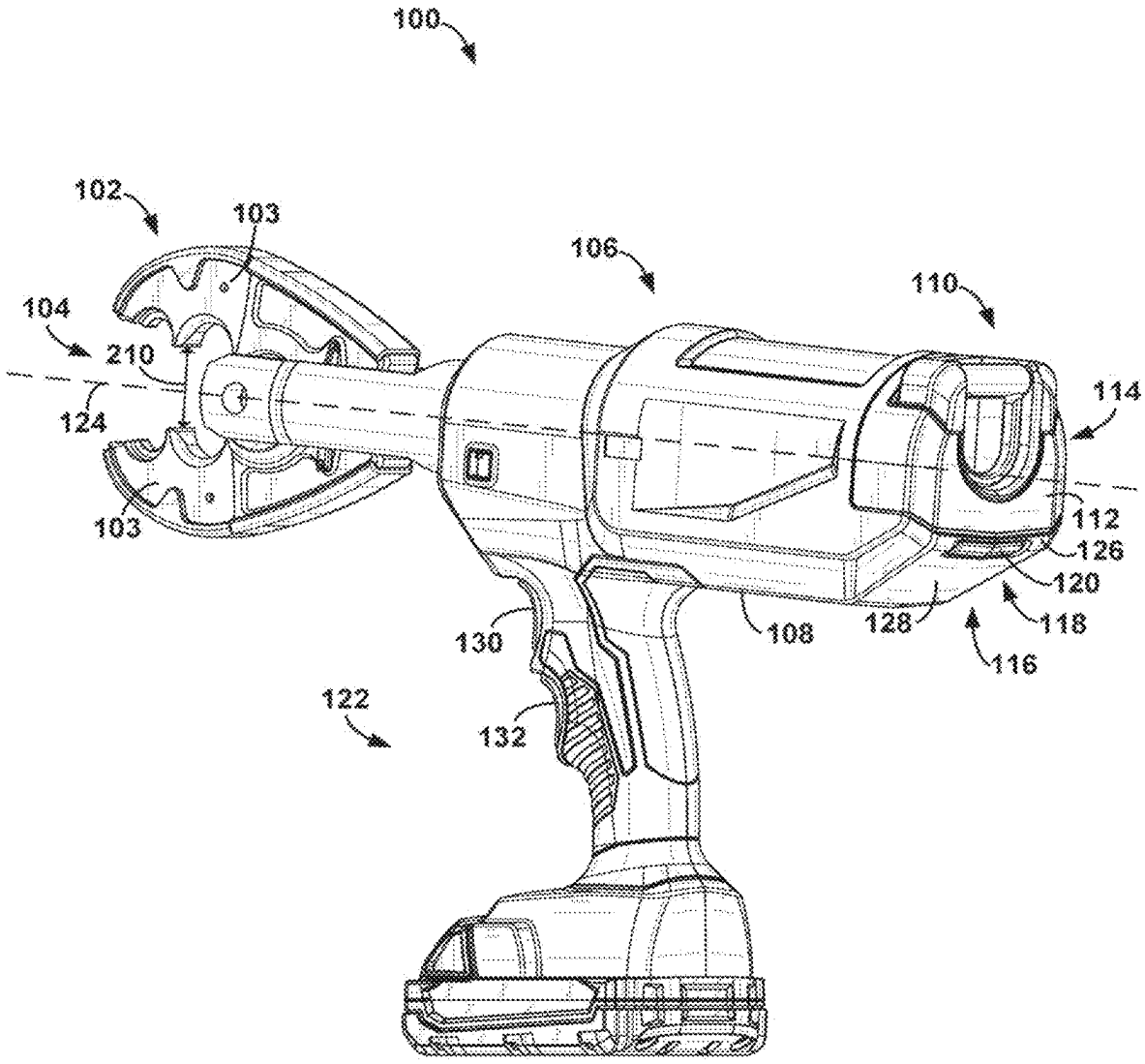
100
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FIG. 1

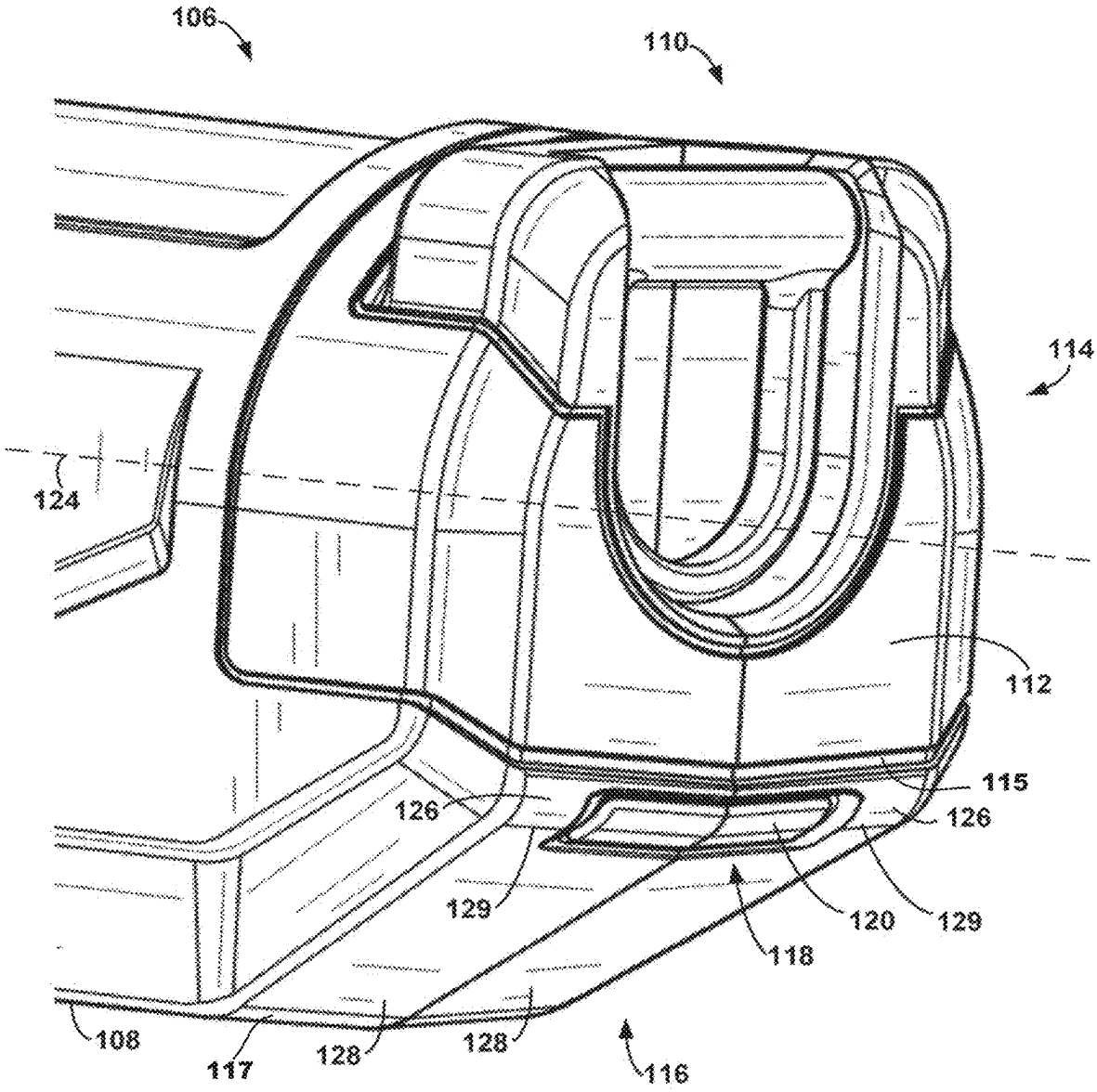
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FIG. 2

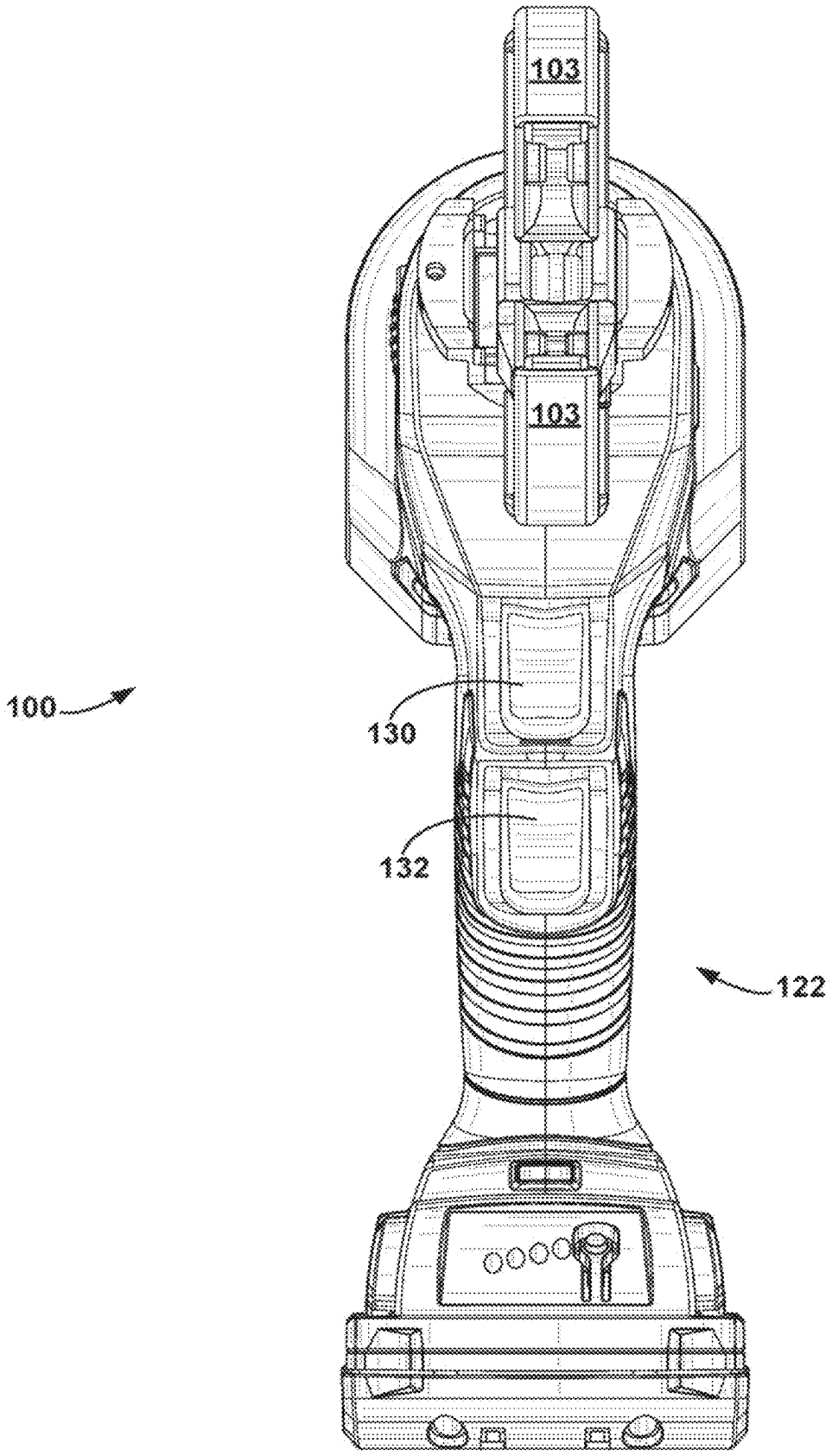


FIG. 3

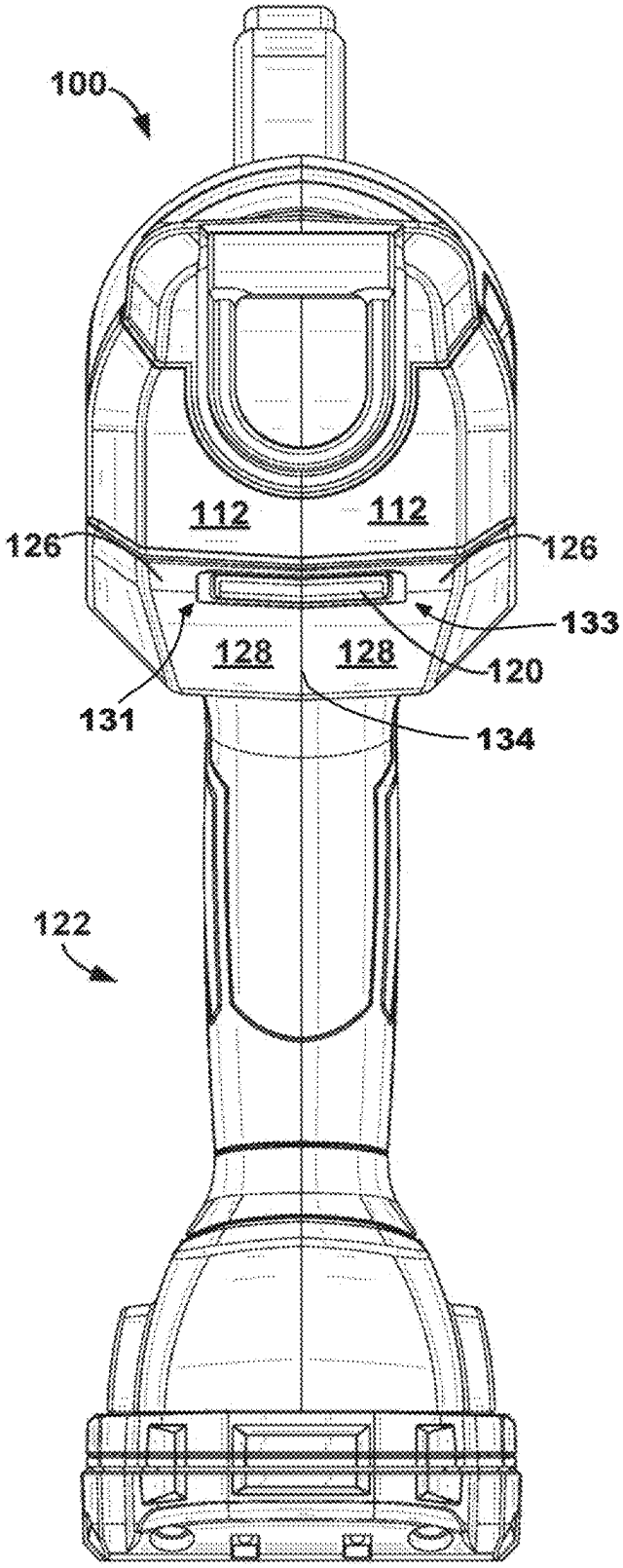
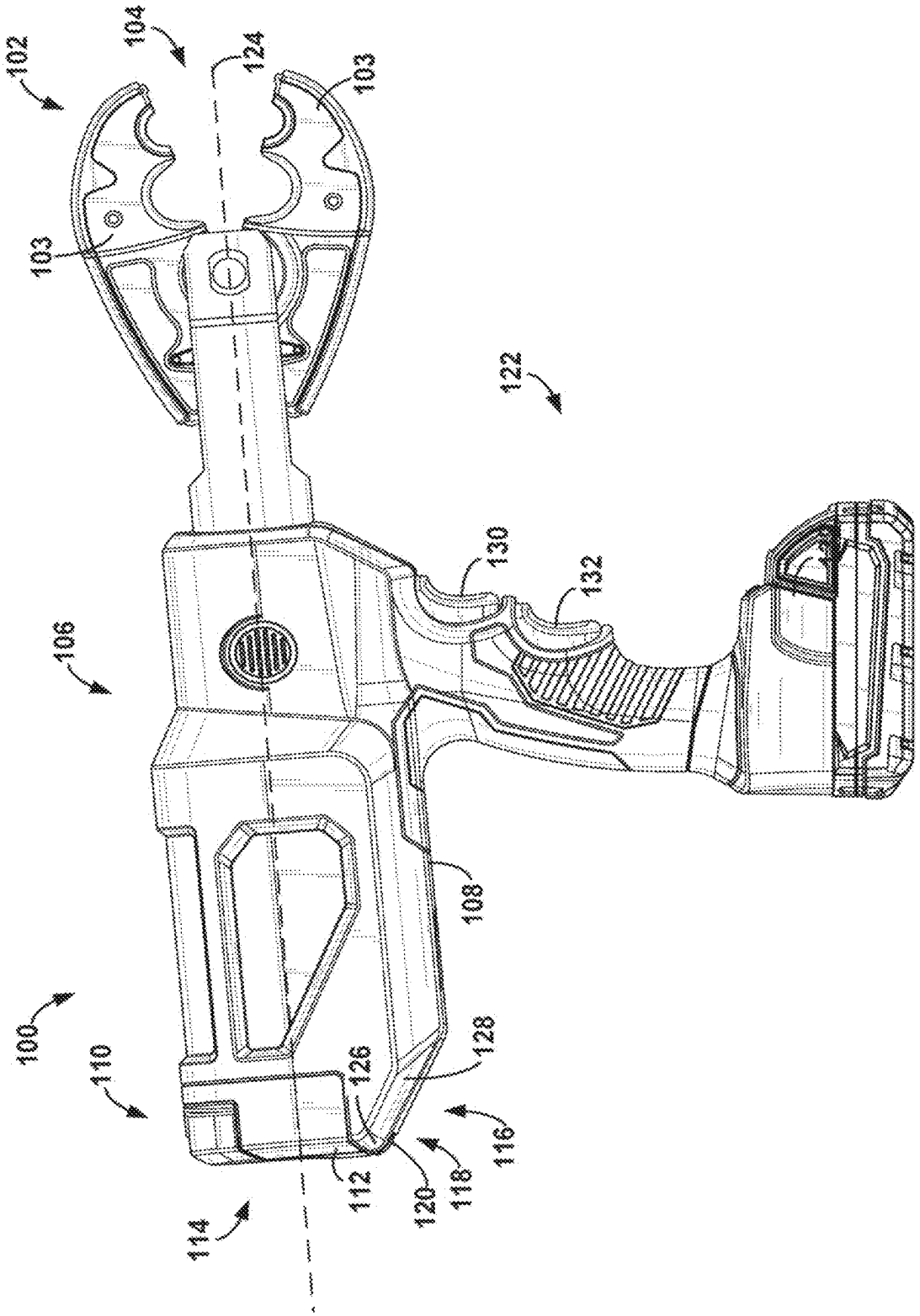


FIG. 4


102
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114

FIG. 5

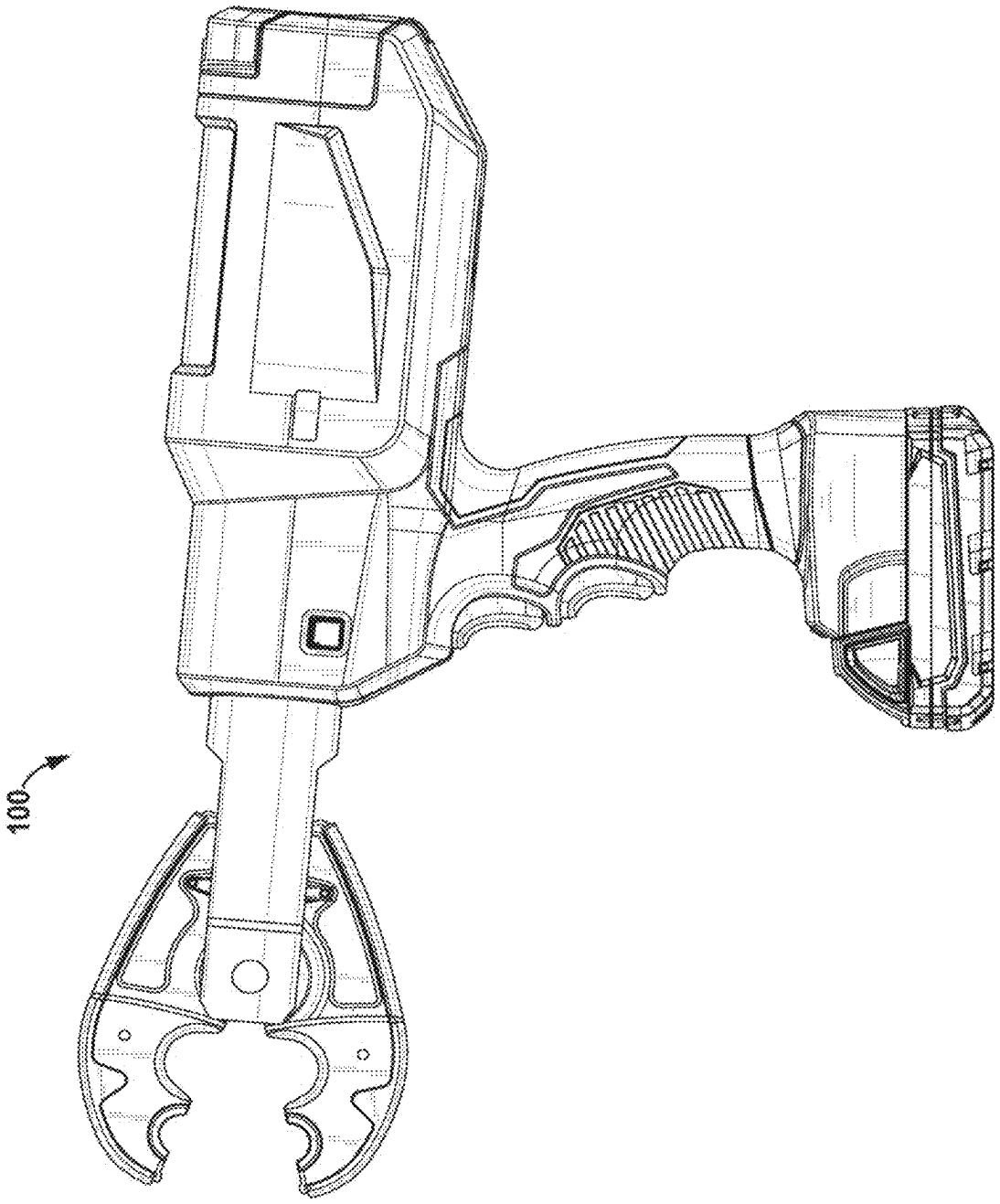


FIG. 6

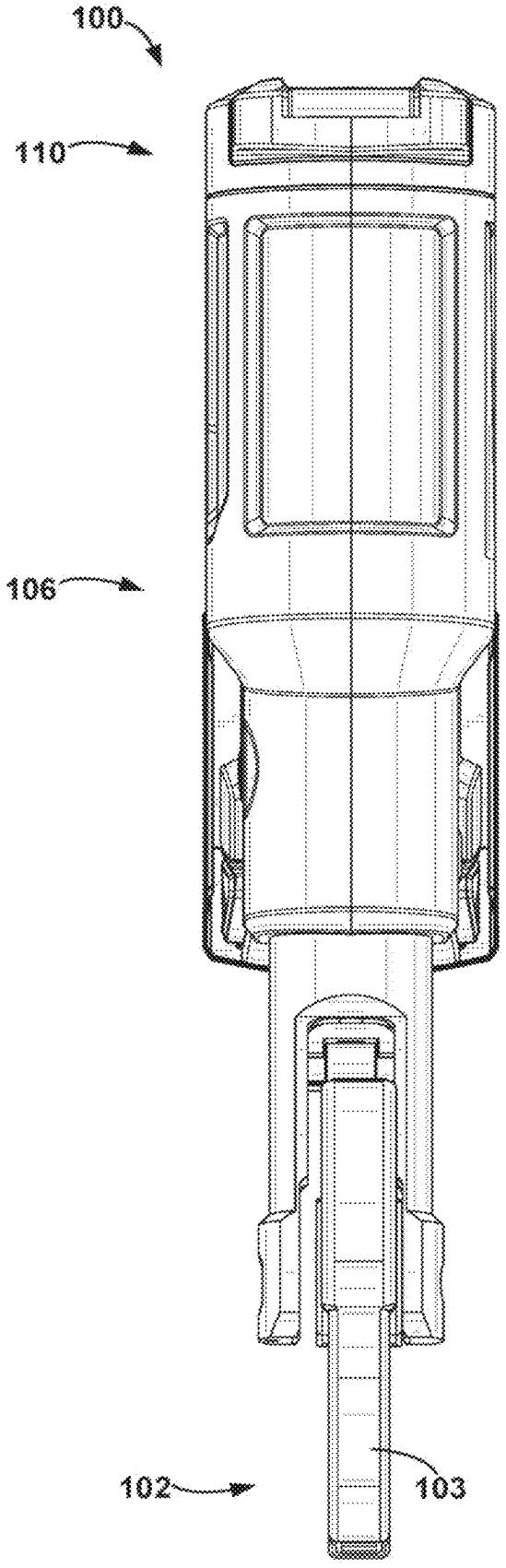


FIG. 7

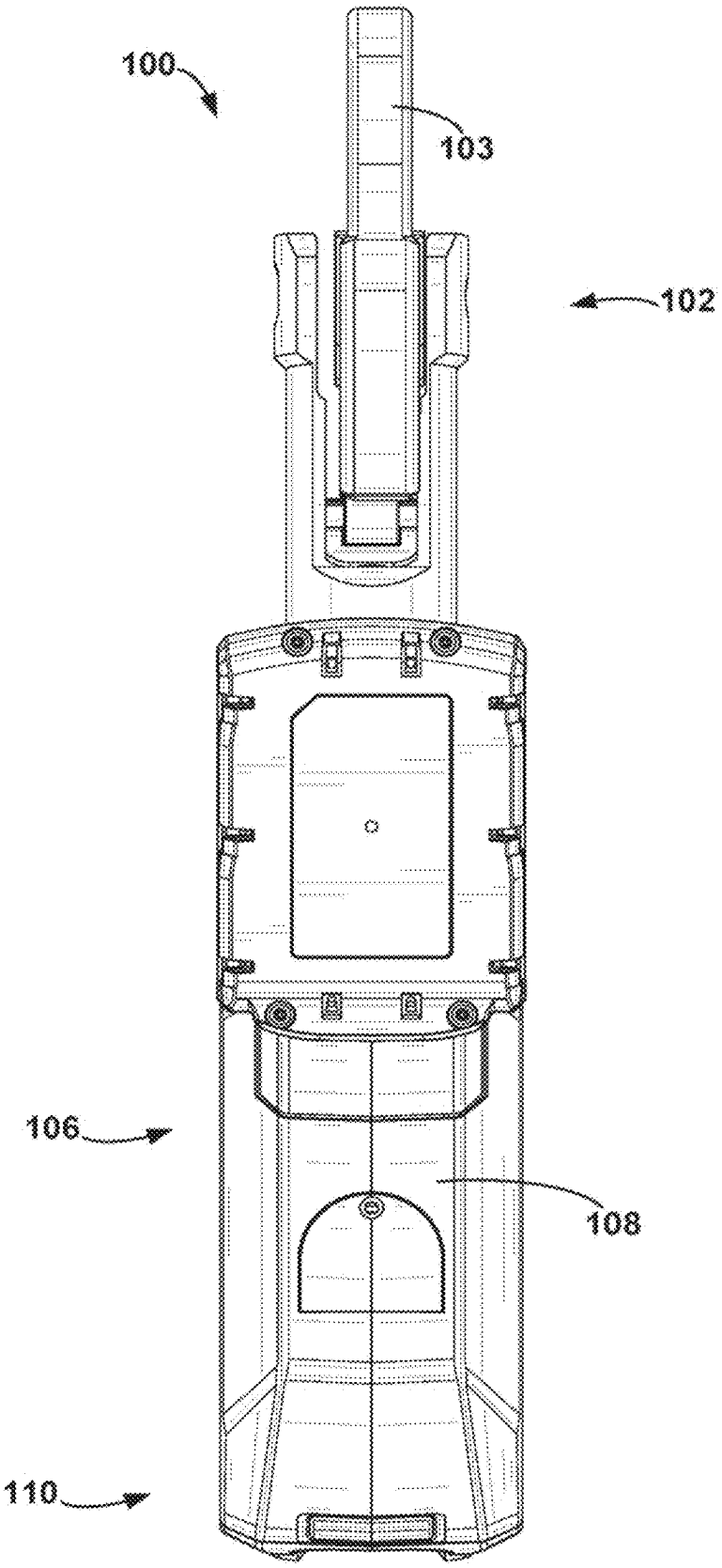
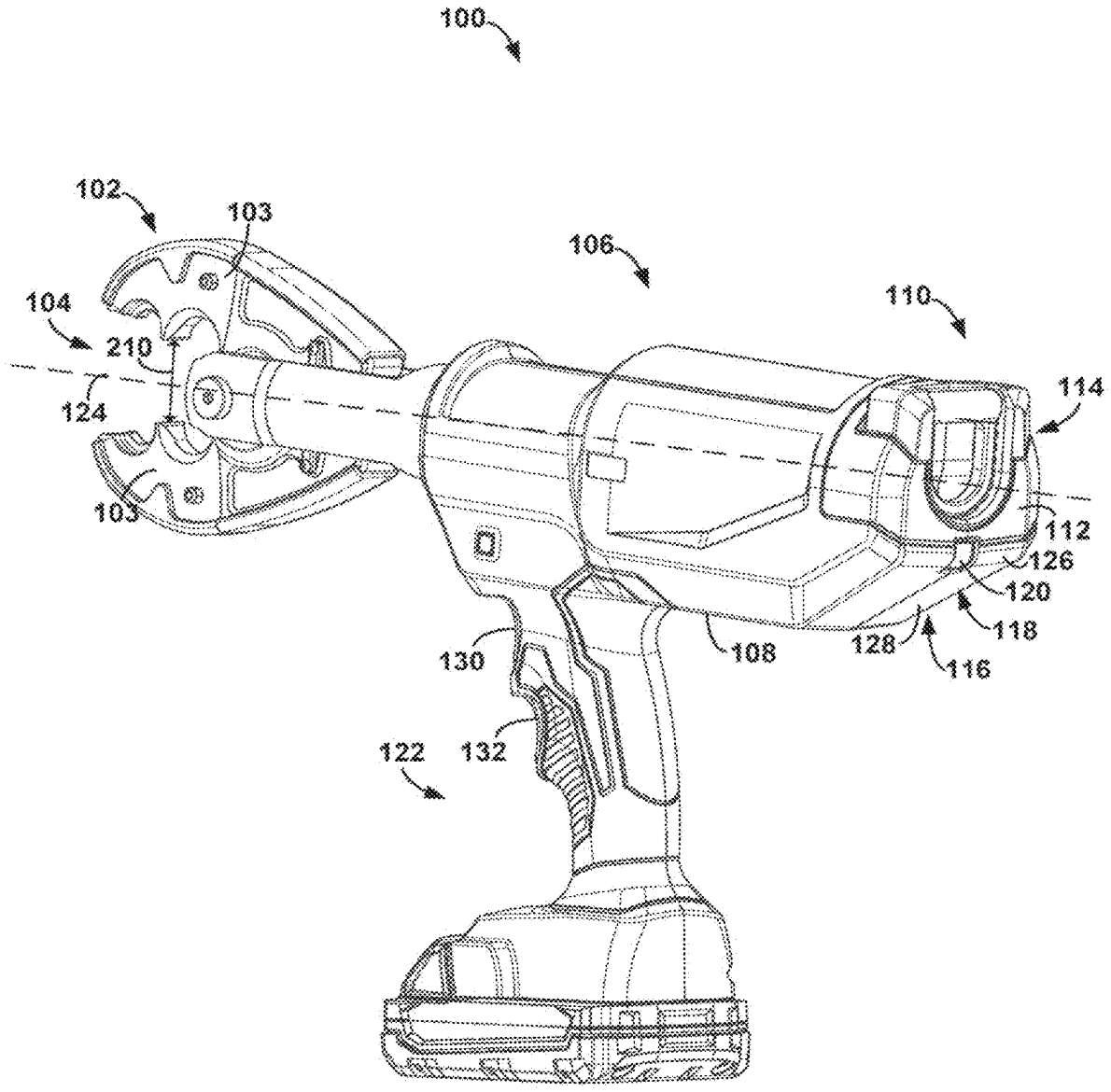


FIG. 8


100
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122
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FIG. 9

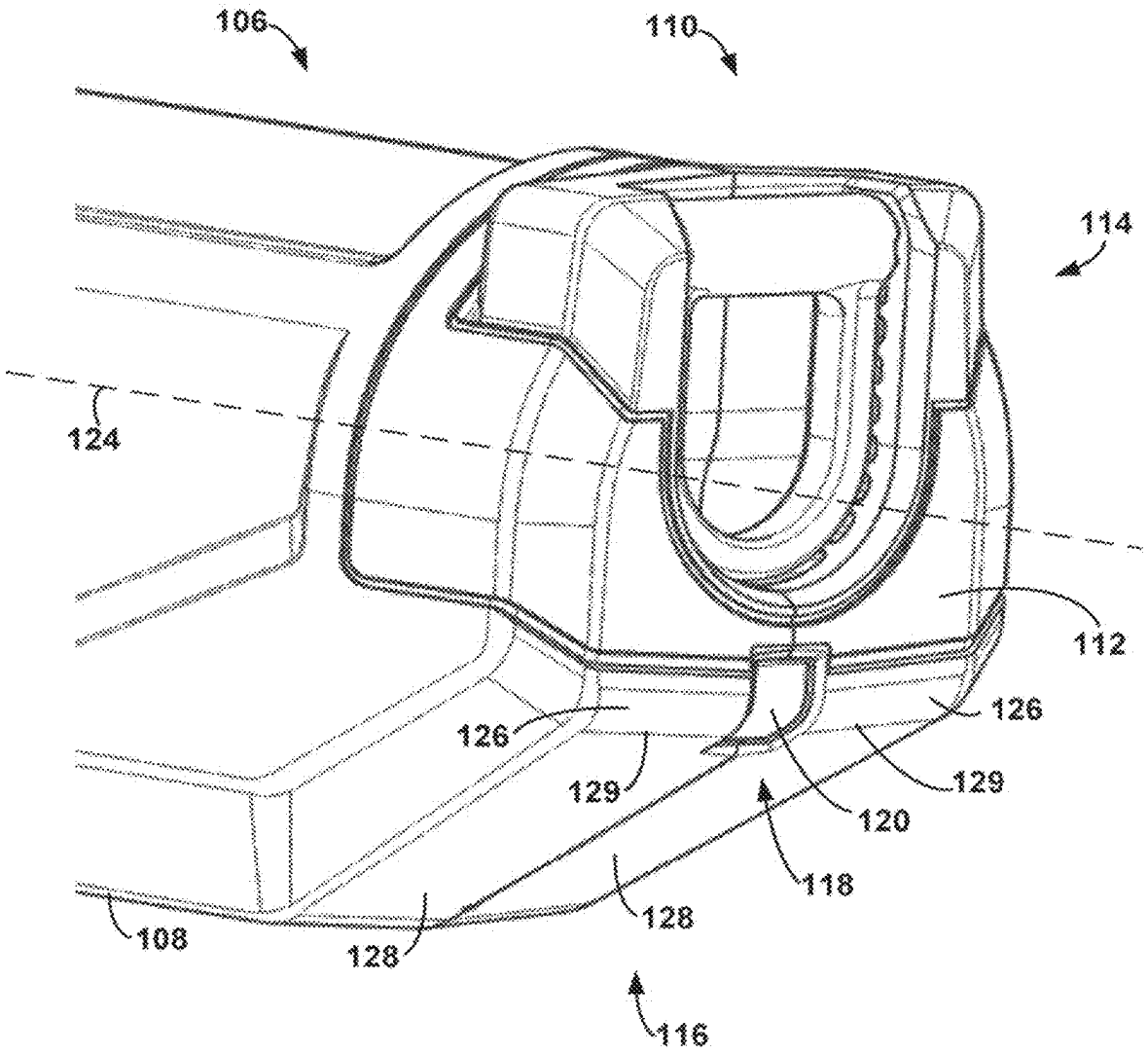

FIG. 10

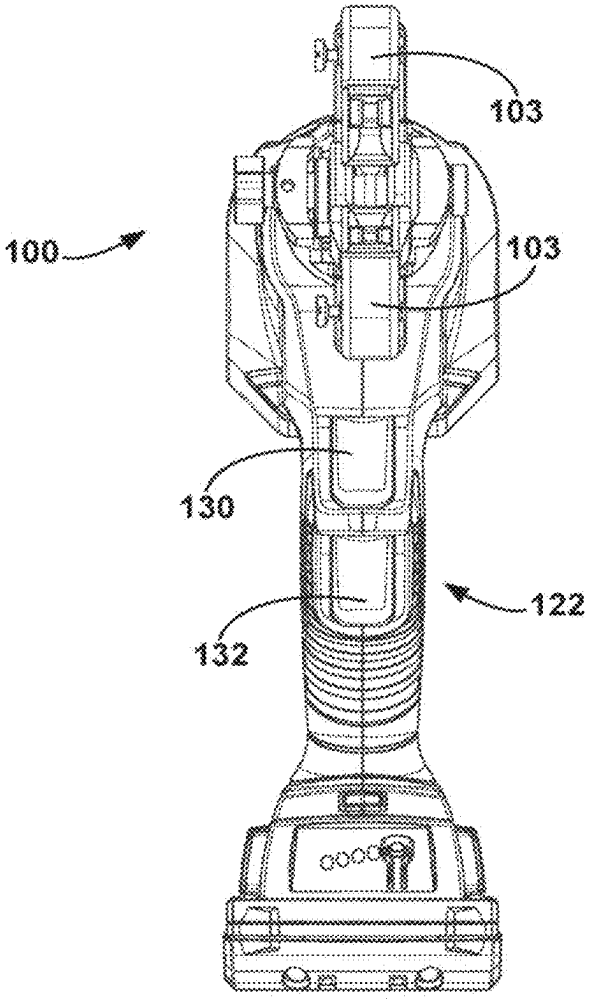

FIG. 11

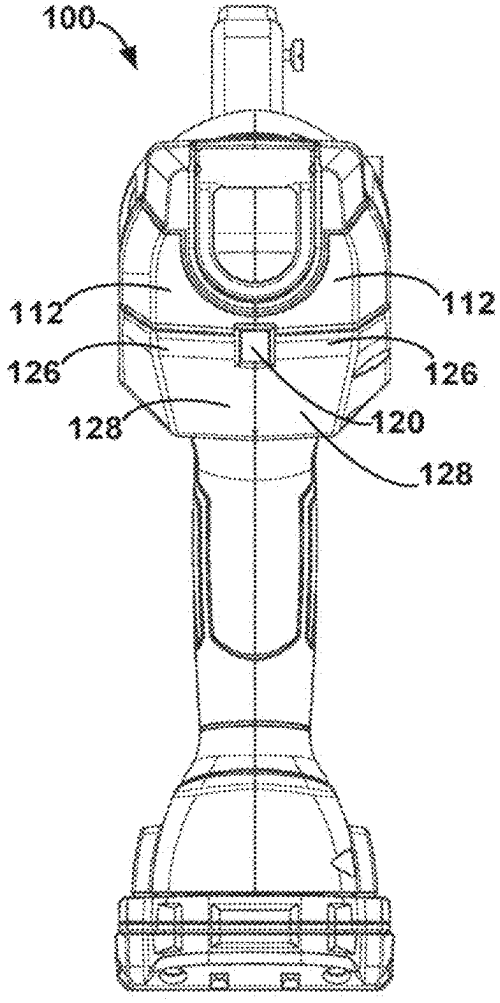

FIG. 12

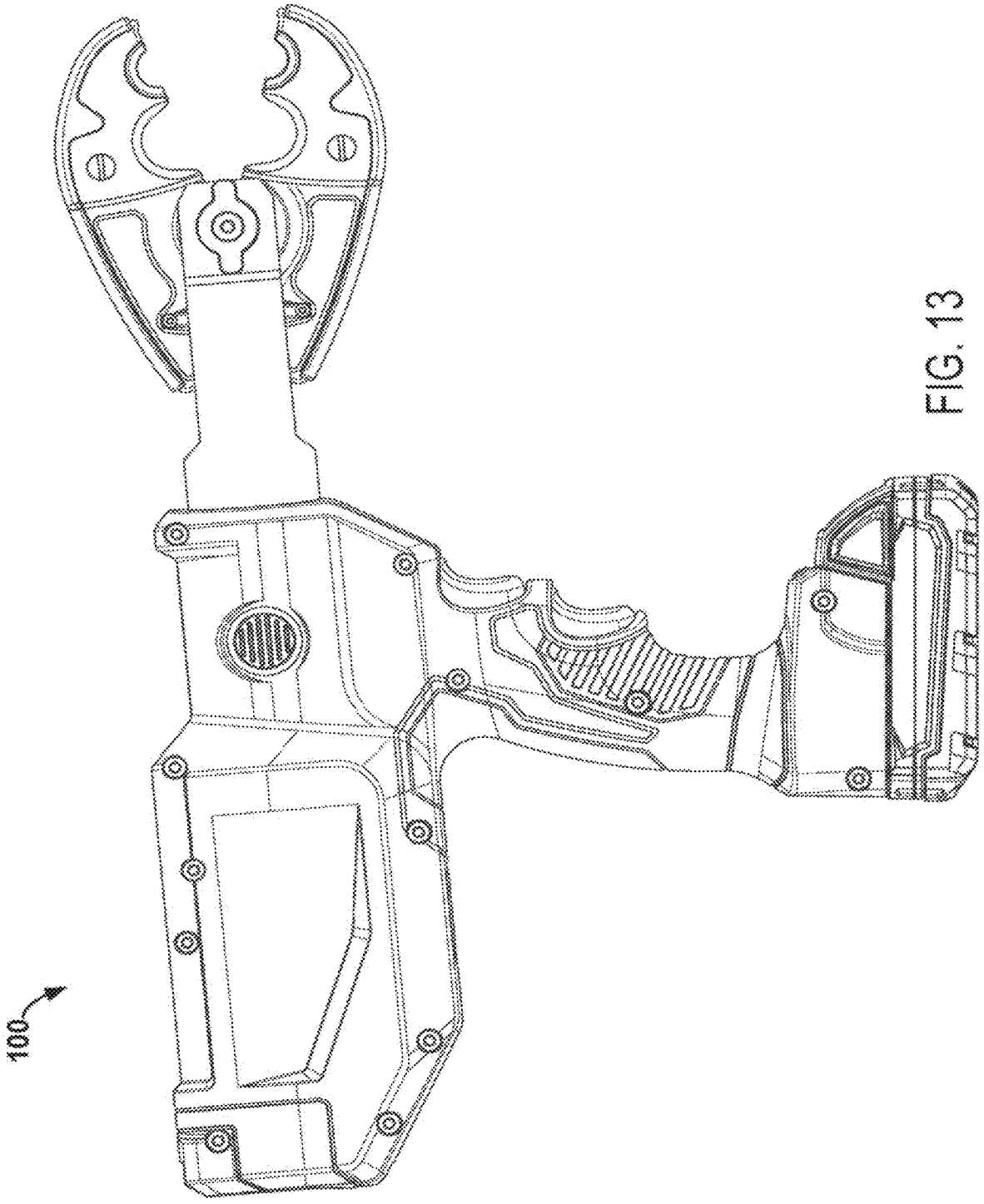

FIG. 13

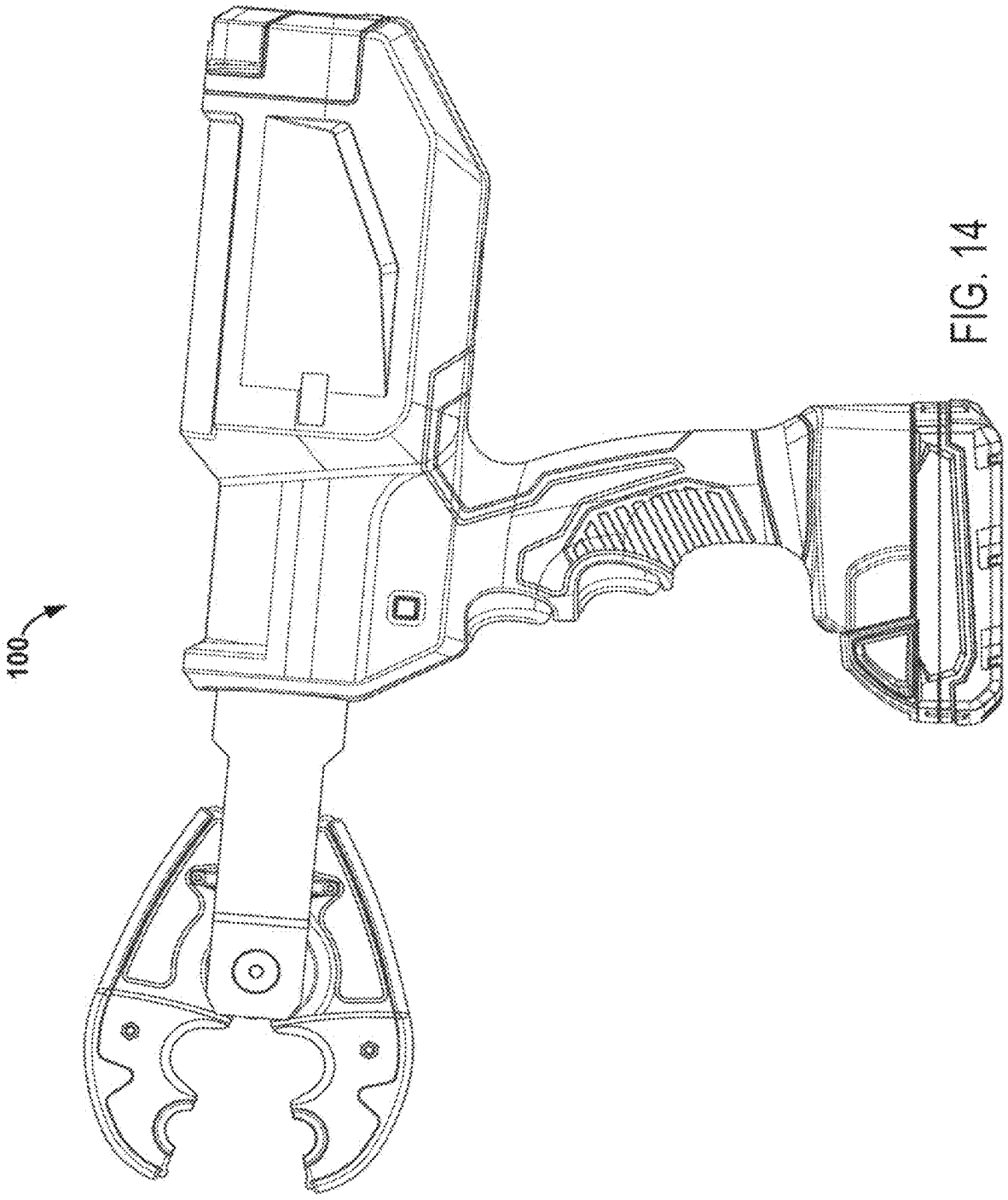

FIG. 14

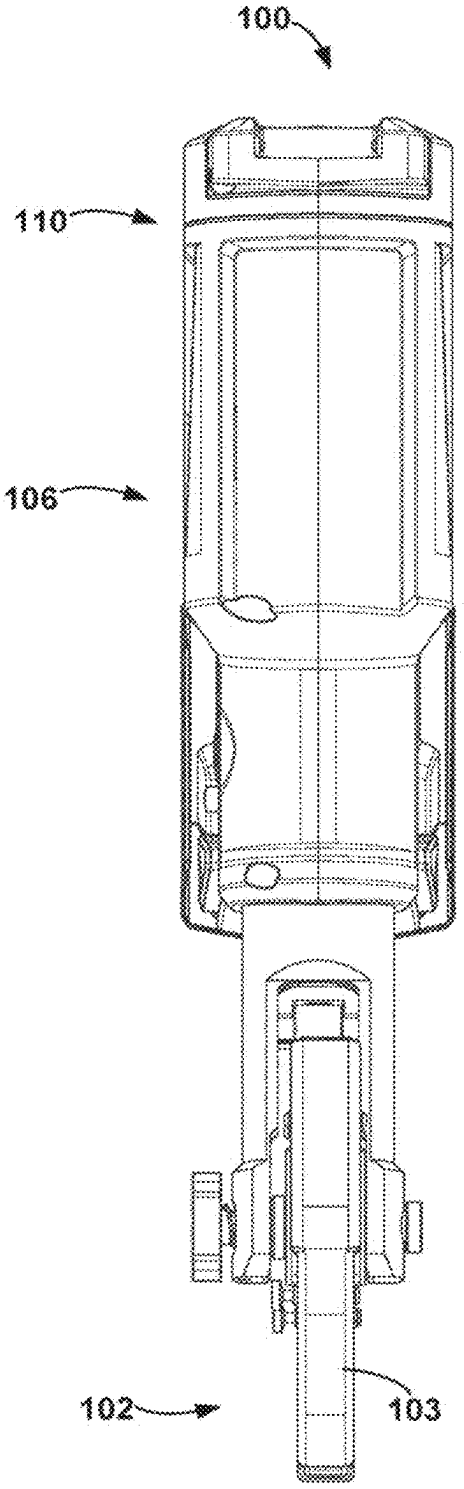

FIG. 15

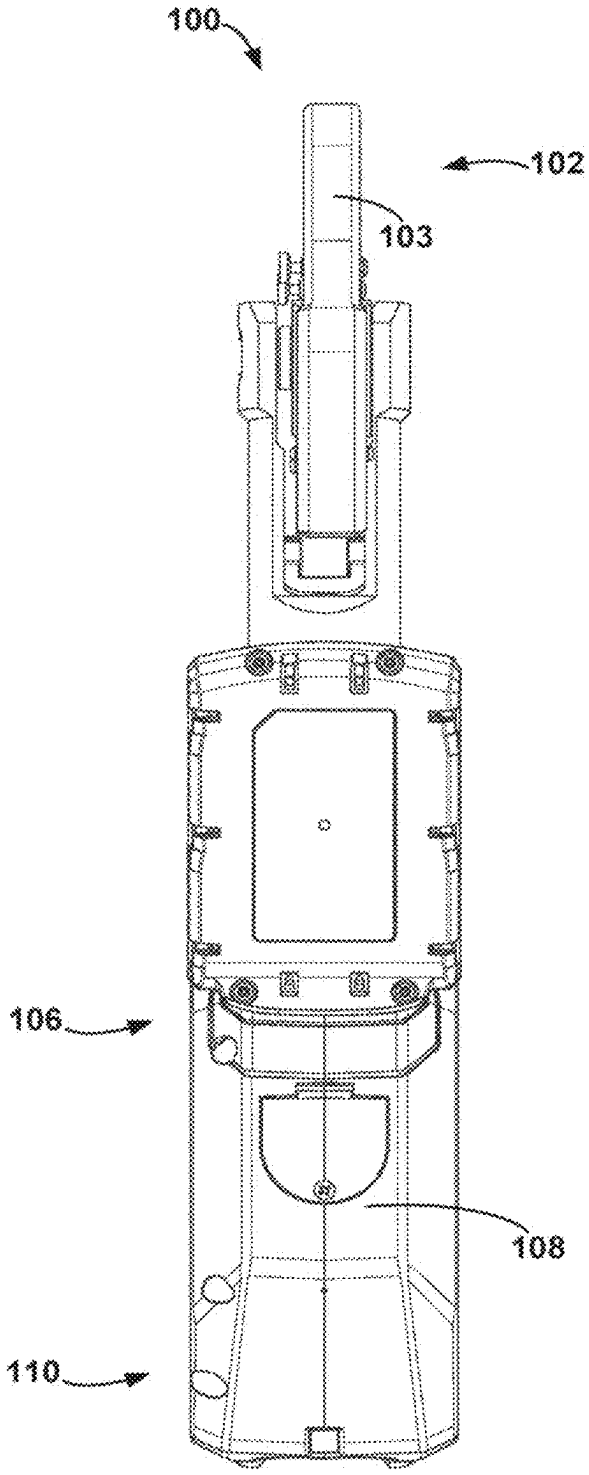

FIG. 16

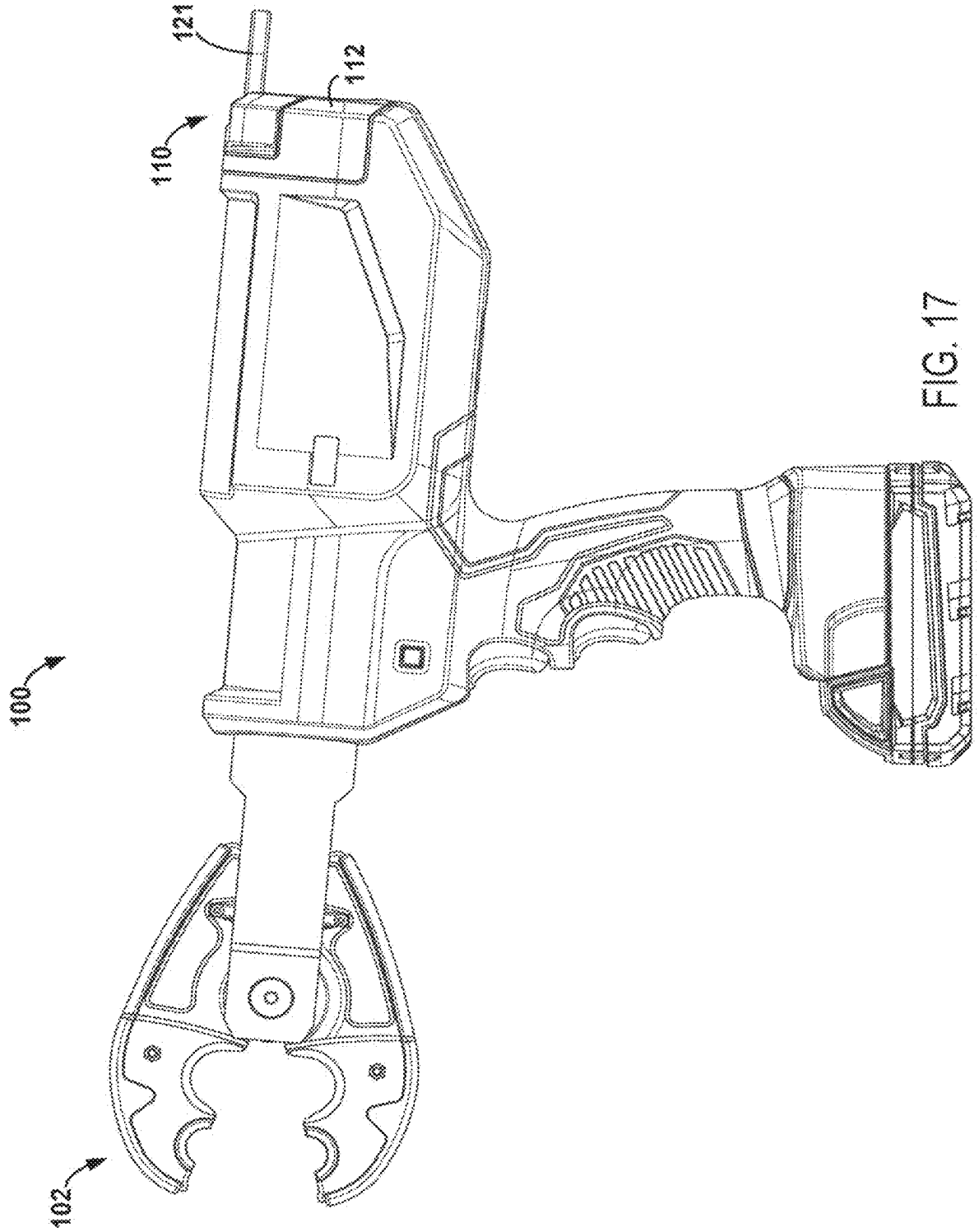

FIG. 17

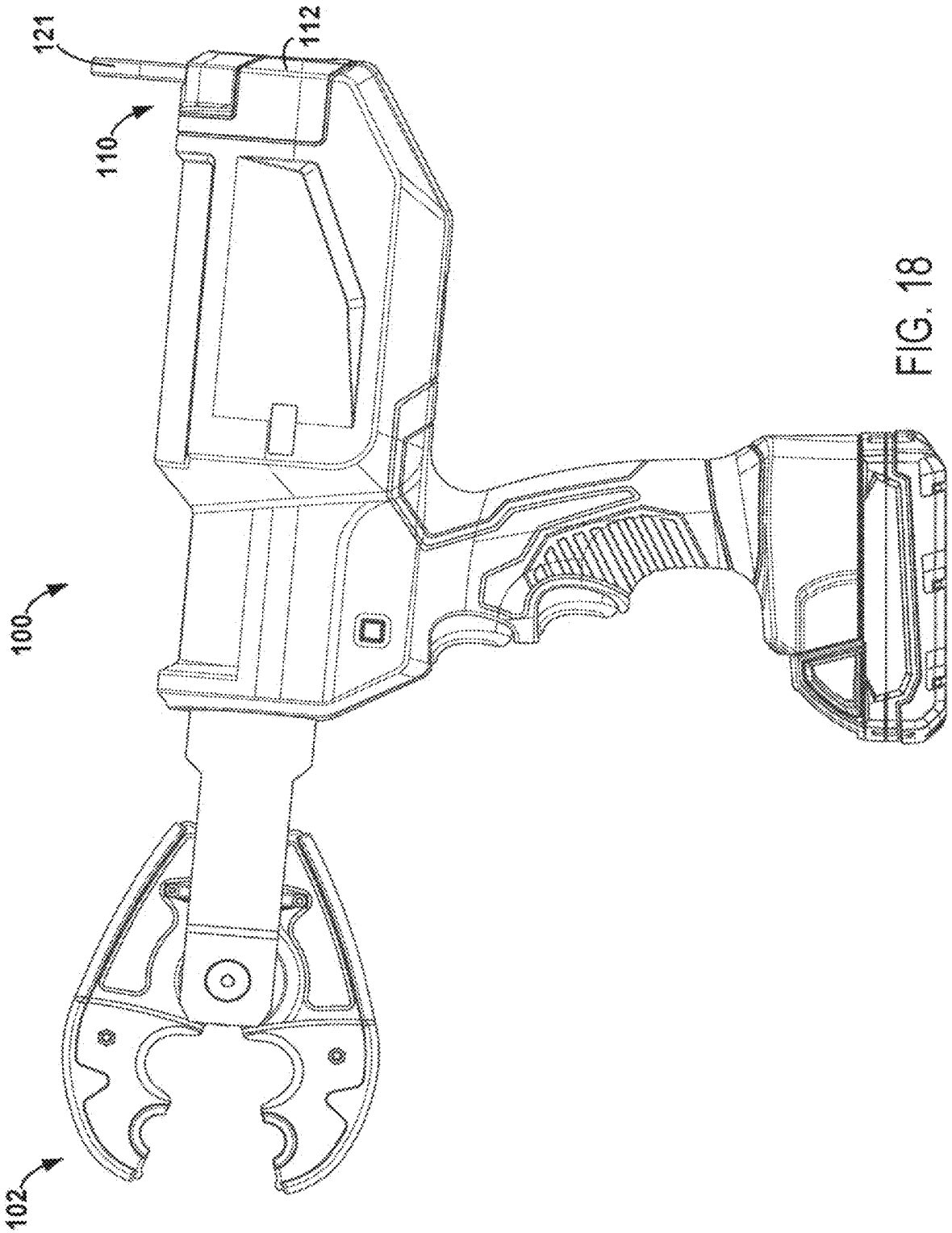

FIG. 18

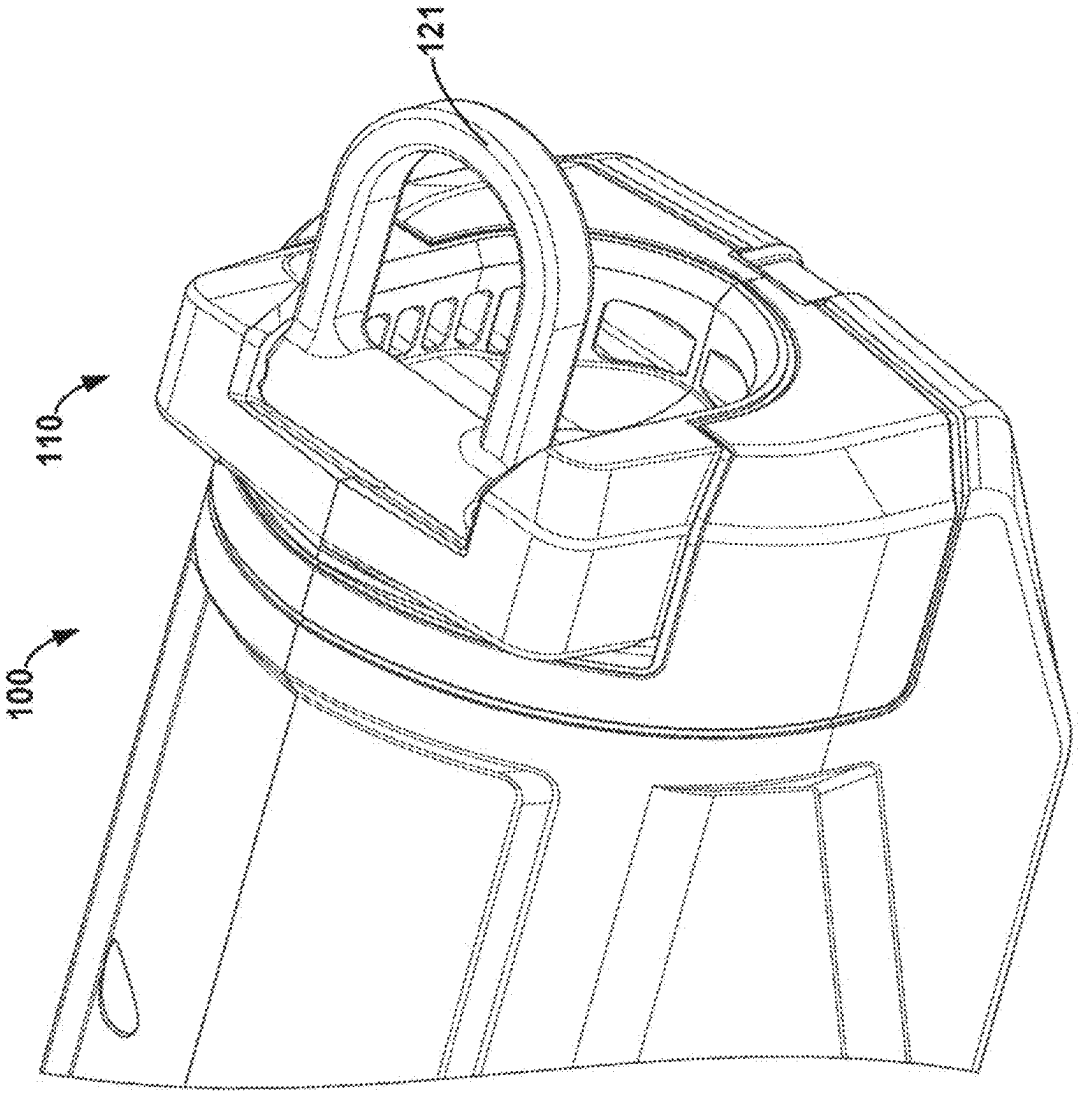

FIG. 19

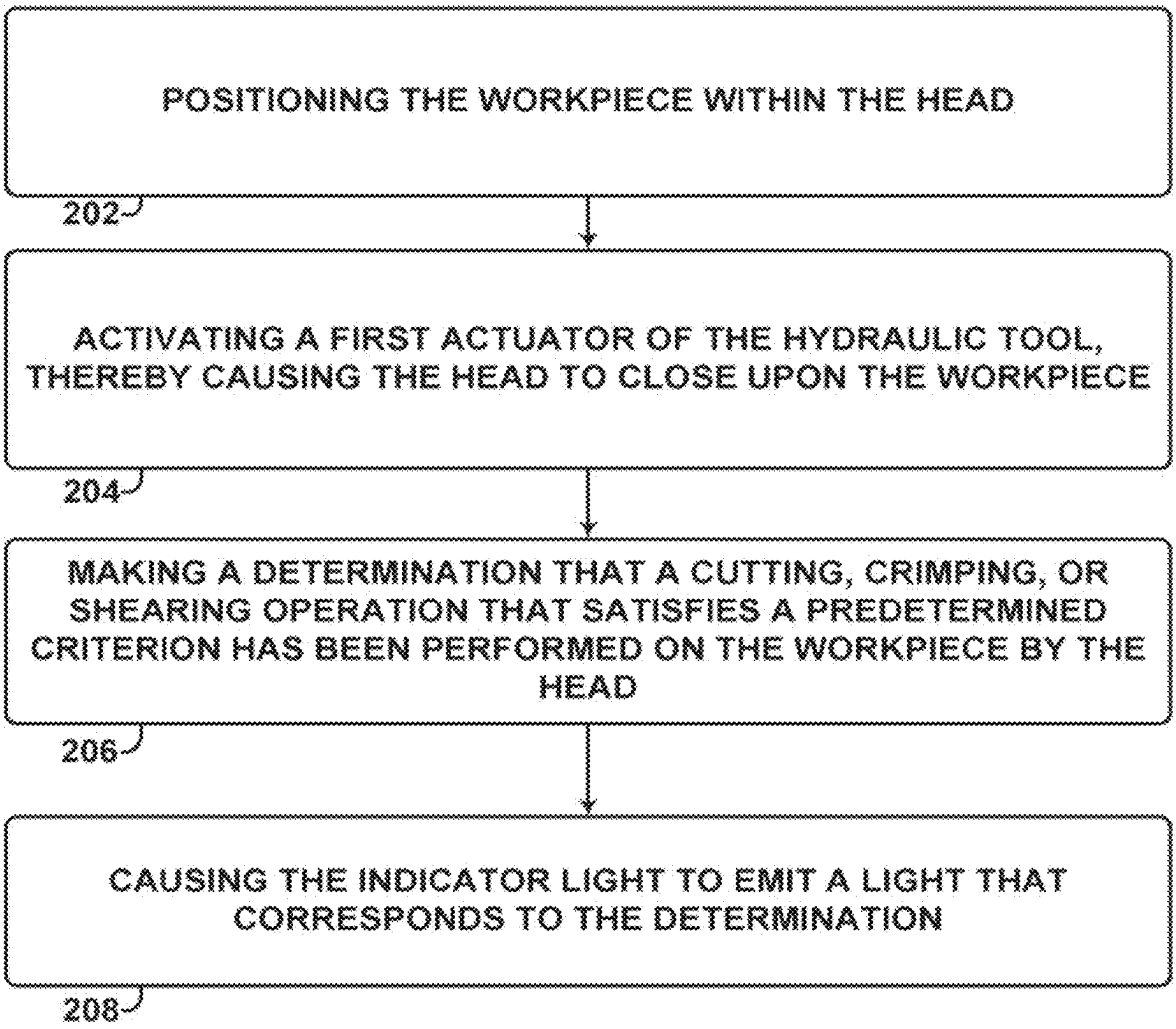
POSITIONING THE WORKPIECE WITHIN THE HEAD
202
ACTIVATING A FIRST ACTUATOR OF THE HYDRAULIC TOOL, THEREBY CAUSING THE HEAD TO CLOSE UPON THE WORKPIECE
204
MAKING A DETERMINATION THAT A CUTTING, CRIMPING, OR SHEARING OPERATION THAT SATISFIES A PREDETERMINED CRITERION HAS BEEN PERFORMED ON THE WORKPIECE BY THE HEAD
206
CAUSING THE INDICATOR LIGHT TO EMIT A LIGHT THAT CORRESPONDS TO THE DETERMINATION
208
200

FIG. 20

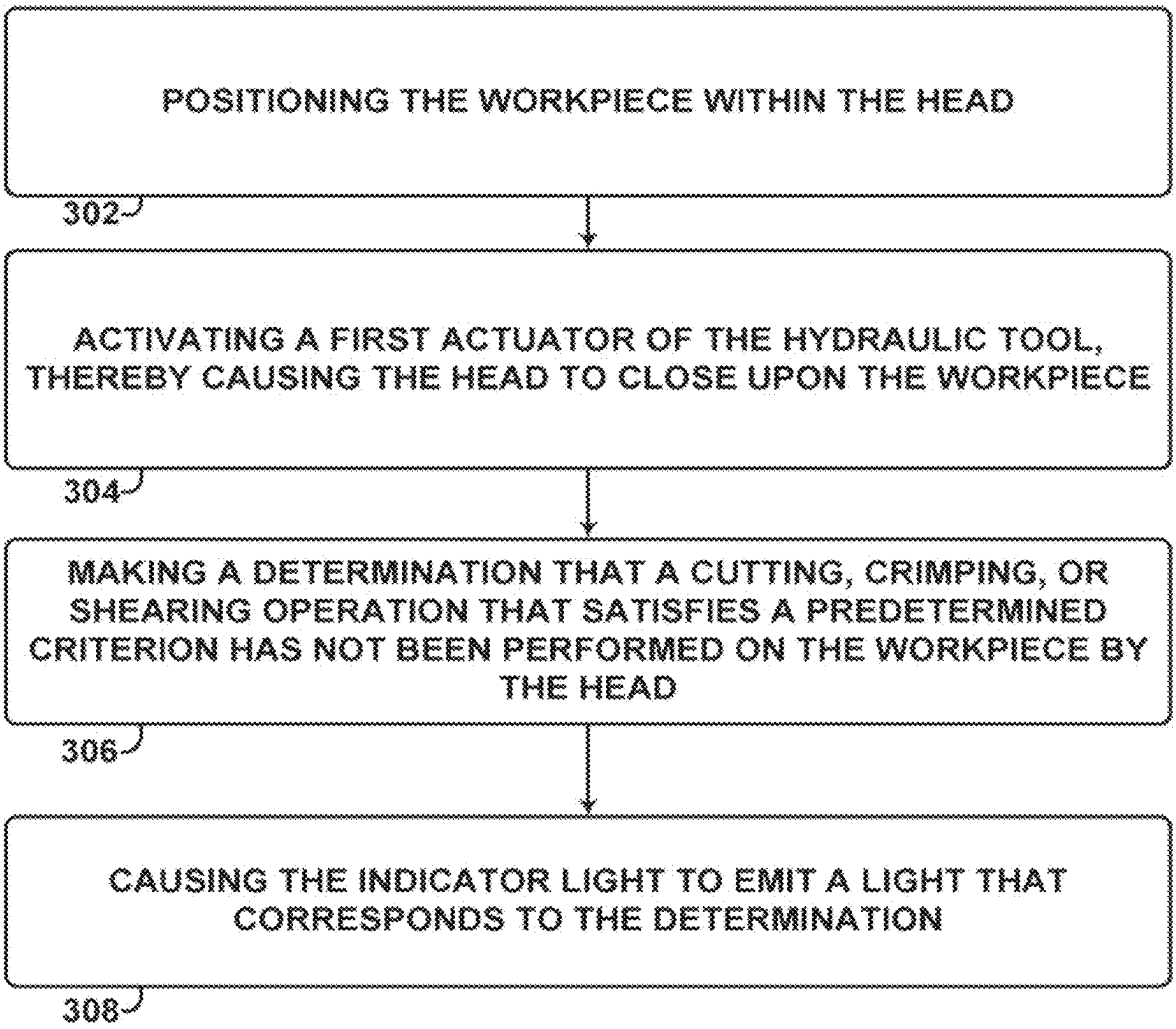
POSITIONING THE WORKPIECE WITHIN THE HEAD
302
ACTIVATING A FIRST ACTUATOR OF THE HYDRAULIC TOOL, THEREBY CAUSING THE HEAD TO CLOSE UPON THE WORKPIECE
304
MAKING A DETERMINATION THAT A CUTTING, CRIMPING, OR SHEARING OPERATION THAT SATISFIES A PREDETERMINED CRITERION HAS NOT BEEN PERFORMED ON THE WORKPIECE BY THE HEAD
306
CAUSING THE INDICATOR LIGHT TO EMIT A LIGHT THAT CORRESPONDS TO THE DETERMINATION
308
300

FIG. 21

HYDRAULIC TOOL WITH INDICATOR LIGHT

RELATED APPLICATIONS

This application is a continuation of U.S. Ser. No. 17/235,540, filed Apr. 20, 2021 and claims priority to U.S. Provisional Patent Application No. 63/012,506, titled "Hydraulic Tool" and filed Apr. 20, 2020, the entirety of which is incorporated herein by reference.

FIELD

The present disclosure relates generally to power tools. More particularly, the present disclosure relates to a hydraulic power tool.

BACKGROUND

A hydraulic tool can be used to crimp, shear, or cut a work piece, among other examples. In such tools, a hydraulic pump is typically utilized for actuating the tool. The force exerted by the pump can be used for closing jaws of the tool to perform a crimping, cutting, or shearing action on the work piece at a desired location. In some circumstances, it can be difficult for a user to determine whether the tool has performed a proper crimp, shear, or cut of the work piece. For example, deviations from acceptable tolerance ranges for some crimping, shearing, or cutting actions can be hard to detect by visual inspection. Additionally, work site conditions such as the work piece being suspended high above the ground can add difficulty. Therefore, there is a need for a tool with improved user feedback regarding whether a proper cut, shear, or crimp has been performed on a work piece.

SUMMARY

One aspect of the disclosure provides a hydraulic tool that includes a head at a first end of the hydraulic tool, wherein the head is configured to apply a mechanical force to a work piece; a body comprising a first surface; a back portion comprising: a second surface at a second end of the hydraulic tool that is opposite the first end; a third surface that is between the first surface and the second surface, wherein the third surface is inclined with respect to the first surface and the second surface; an indicator light; and a window positioned on the third surface, wherein the window covers the indicator light; and a grip that extends from the body away from the first surface.

Another aspect of the disclosure provides a method of operating a hydraulic tool, the method including: positioning a work piece within a head; activating a first actuator of the hydraulic tool, thereby causing the head to close upon the work piece; making a determination that a cutting, crimping, or shearing operation that satisfies a predetermined criterion has been performed on the work piece by the head; and causing an indicator light to emit a light that corresponds to the determination.

Yet another aspect of the disclosure provides a method of operating a hydraulic tool, the method including: positioning a work piece within a head; activating a first actuator of the hydraulic tool, thereby causing the head to close upon the work piece; making a determination that a cutting, crimping, or shearing operation that satisfies a predetermined criterion has not been performed on the work piece by the head; and causing an indicator light to emit a light that corresponds to the determination.

By the term "about" or "substantially" with reference to amounts or measurement values described herein, it is meant that the recited characteristic, parameter, or value need not be achieved exactly, but that deviations or variations, including for example, tolerances, measurement error, measurement accuracy limitations and other factors known to those of skill in the art, may occur in amounts that do not preclude the effect the characteristic was intended to provide.

The features, functions, and advantages can be achieved independently in various embodiments of the present disclosure or may be combined in yet other embodiments in which further details can be seen with reference to the following description and drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

The novel features believed characteristic of the illustrative embodiments are set forth in the appended claims. The illustrative embodiments, however, as well as a preferred mode of use, further objectives and descriptions thereof, will best be understood by reference to the following detailed description of an illustrative embodiment of the present disclosure when read in conjunction with the accompanying drawings, wherein:

FIG. **1** is a perspective view of a hydraulic tool from the back and left according to one embodiment of the invention;

FIG. **2** is a close up view of the hydraulic tool of FIG. **1** from the back and left;

FIG. **3** is a front end view of the hydraulic tool of FIG. **1**;

FIG. **4** is a back end view of the hydraulic tool of FIG. **1**;

FIG. **5** is a right side view of the hydraulic tool of FIG. **1**;

FIG. **6** is a left side view of the hydraulic tool of FIG. **1**;

FIG. **7** is a top end view of the hydraulic tool of FIG. **1**;

FIG. **8** is a bottom end view of the hydraulic tool of FIG. **1**;

FIG. **9** is a perspective view of a hydraulic tool from the back and left according to another embodiment of the invention;

FIG. **10** is a close up view of the hydraulic tool of FIG. **9** from the back and left;

FIG. **11** is a front end view of the hydraulic tool of FIG. **9**;

FIG. **12** is a back end view of the hydraulic tool of FIG. **9**;

FIG. **13** is a right side view of the hydraulic tool of FIG. **9**;

FIG. **14** is a left side view of the hydraulic tool of FIG. **9**;

FIG. **15** is a top end view of the hydraulic tool of FIG. **9**;

FIG. **16** is a bottom end view of the hydraulic tool of FIG. **9**;

FIG. **17** is a left side view of a hydraulic tool showing an attachment loop in an extended position according to one embodiment of the invention;

FIG. **18** is a left side view of the hydraulic tool of FIG. **17** showing the attachment loop in an upright position;

FIG. **19** is a close up perspective view of the hydraulic tool of FIG. **17** showing the attachment loop the an extended position;

FIG. **20** is a block diagram of a method according to one embodiment of the invention; and

FIG. **21** is a block diagram of a method according to another embodiment of the invention.

DETAILED DESCRIPTION

The following discussion is presented to enable a person skilled in the art to make and use embodiments of the

invention. Various modifications to the illustrated embodiments will be readily apparent to those skilled in the art, and the generic principles herein can be applied to other embodiments and applications without departing from embodiments of the invention. Thus, embodiments of the invention are not intended to be limited to embodiments shown, but are to be accorded the widest scope consistent with the principles and features disclosed herein. The following detailed description is to be read with reference to the figures, in which like elements in different figures have like reference numerals. The figures, which are not necessarily to scale, depict selected embodiments and are not intended to limit the scope of embodiments of the invention. Skilled artisans will recognize the examples provided herein have many useful alternatives and fall within the scope of embodiments of the invention.

As used herein, unless specified or limited otherwise, the terms "mounted," "connected," "supported," and "coupled" and variations thereof are used broadly and encompass both direct and indirect mountings, connections, supports, and couplings. Further, "connected" and "coupled" are not restricted to physical or mechanical connections or couplings.

Hydraulic crimpers and cutters are types of hydraulic power tools for performing crimping and cutting work on a work piece. Hydraulic tools often include a hydraulic pump for pressurizing hydraulic fluid and transferring the fluid to a cylinder in the power tool. The cylinder includes a piston that can extend toward a cutting head of the power tool. The piston exerts a force on the cutting head, which may typically include opposed jaws with certain cutting features depending on the particular configuration of the power tool. The force exerted by the piston may be used for closing the jaws to perform cutting on a work piece, such as a wire, at a targeted cutting location.

Certain hydraulic cutting tools include a cutting tool head with jaws that pivot at a pivot point. Each of the jaws can include a cutting surface and a respective ear or extension. A portion of the cutting surface can be integral with or mounted to the car, and a pivot pin can extend through each car to form the pivot point. In some hydraulic cutting tools, when the jaws are in a closed position, the cutting surfaces adjacent to the ear can pass by each other. In use, the overlap of the cutting surfaces can prevent the jaws from fully cutting the work piece. For example, the jaws may jam or bind before the work piece is fully cut. In some hydraulic tools that include a cutting surface at least partially mounted to or formed with an car, a cutting motion can cause jaws to flex or be pushed laterally away from the work piece.

A cutter is effective when the cutting tool can make a full cut on a work piece and avoid binding. Effective cutters also reduce or eliminate undesired flex and force on the jaws and blades during a cutting action. In general, a cutting tool configured to provide a full, controllable cut while limiting the force that urges jaws of the cutting tool laterally away from a work piece during a cutting action may be useful.

As noted above, there is a need for a hydraulic tool with improved user feedback regarding whether a proper cut, shear, crimp, or other operation has been performed on a work piece. In some situations, a user reaches above the user's head to put the tool in position to operate on the work piece. In other situations, the user holds the hydraulic tool well below the user's eyes (e.g., at waist level) to put the tool in position to operate on the work piece. Within examples, a hydraulic tool can provide a feedback mechanism that is convenient in both situations. For example, the hydraulic tool can include an indicator light that indicates whether the hydraulic tool has successfully or unsuccessfully operated on the work piece. The indicator light is positioned such that it is convenient for the user to view whether the tool is raised above the user's head or at waist level, for example.

Disclosed embodiments will now be described more fully hereinafter with reference to the accompanying drawings, in which some, but not all of the disclosed embodiments are shown. Indeed, several different embodiments may be provided and should not be construed as limited to the embodiments set forth herein. Rather, these embodiments are provided so that this disclosure will be thorough and complete and will fully convey the scope of the disclosure to those skilled in the art.

FIGS. **1-8** illustrate a hydraulic tool **100** according to one embodiment of the invention. With reference to FIG. **1**, the hydraulic tool **100** includes a head **102** at a first end **104** of the hydraulic tool **100**. The head **102** is configured to apply a mechanical force to a work piece. As shown, the head **102** takes the form of a crimping or cutting head comprising opposing jaws **103**. However, in some embodiments, a head could be configured for shearing or another mechanical operation. The head **102** is hydraulically actuated and can be used to crimp an electrical connector to one or more conductors, cut conductors or structural cables, and/or to shear conductors or structural cables. Other examples are possible.

The hydraulic tool **100** also includes a body **106** that includes a first surface **108** (e.g., a lower surface). The body **106** can house various hydraulic and/or mechanical components that are configured to actuate the head **102** to operate on the work piece. The first surface **108** is parallel to a longitudinal axis **124** of the hydraulic tool **100**. The longitudinal axis **124** can be within a plane of symmetry of the head **102** that bisects the head **102**, for example. The body **106** extends longitudinally from the head **102** along the longitudinal axis **124**.

The hydraulic tool **100** also includes a back portion **110** that includes a second surface **112** at a second end **114** of the hydraulic tool **100** that is opposite the first end **104**. The back portion **110** also includes a third surface **116** that is between the first surface **108** and the second surface **112**. The third surface **116** is inclined with respect to the first surface **108** and the second surface **112** and defines a plane that is skewed relative to the longitudinal axis **124** (e.g., plane is non-parallel to the longitudinal axis **124**). In some embodiments, the plane defined by the third surface **116** is not perpendicular to the axis **124**. The second surface **112** is perpendicular to the longitudinal axis **124**. The third surface **116** includes a first portion **126** that abuts the second surface **112** and a second portion **128** that abuts the first surface **108**. In the illustrated embodiment, a first edge **115** is formed where the first portion **126** abuts the second surface **112** (see, for example, FIG. **2**). Similarly, a second edge **117** is formed where the second portion **128** abuts the first surface **108** (see, for example, FIG. **2**). Each of the first and second edges **115**, **117** can be configured as rounded exterior, obtuse corners.

The hydraulic tool **100** also includes an indicator light **118** and a window **120** positioned on the third surface **116**. The window **120** (e.g., a snap on plastic window) overlaps the first portion **126** and the second portion **128** and covers and protects the indicator light **118** (e.g., a multi-color light emitting diode (LED) array, a discrete LED, or a light bulb). In the illustrated embodiment, the window **120** is disposed proximate to the first edge **115**.

The hydraulic tool **100** includes a grip **122** that extends from the body **106** away from the first surface **108**. The grip **122** extends generally away from the body **106** perpendicularly to the longitudinal axis **124**. As shown, the grip **122**

takes a form of a pistol grip, but other examples are possible. The grip **122** includes a first actuator **130** (e.g., a trigger) that, when activated, causes the head **102** to close (e.g., upon the work piece). The grip **122** includes a second actuator **132** that, when activated, causes the head **102** to open (e.g., away from the work piece). In some examples, the positions of the first actuator **130** and the second actuator **132** can be reversed. In some embodiments, the first and second actuators **130**, **132** can be disposed along the grip **122** at an overlapping position.

The hydraulic tool **100** is configured (e.g., via a control system) to make a first determination that a cutting, crimping, or shearing operation (or another type of operation) that satisfies a predetermined criterion has been performed on the work piece by the head **102** and configured to cause the indicator light **118** to emit a first light that corresponds to the first determination. For example, the indicator light **118** emitting a green light could indicate that the operation performed by the head **102** on the work piece satisfies the predetermined criterion. Such predetermined criteria for evaluating an operation performed by the hydraulic tool **100** are discussed in more detail below.

The hydraulic tool **100** is also configured to make a second determination that a cutting, crimping, or shearing operation that satisfies a predetermined criterion has not (e.g., yet) been performed on the work piece by the head and configured to cause the indicator light to emit a second light that corresponds to the second determination. For example, the indicator light **118** emitting a red light could indicate that the operation performed by the head **102** on the work piece does not (e.g., yet) satisfy the predetermined criterion. Such predetermined criteria for evaluating an operation performed by the hydraulic tool **100** are discussed in more detail below.

FIG. **2** is a close up view of the hydraulic tool from the back and left. That is, FIG. **2** is a close up view of the back portion **110**. As shown in FIG. **2**, the first portion **126** is separated from the second portion **128** by a boundary **129** (e.g., a seam). In a sense, the boundary **129** bisects the window **120** along a longitudinal axis of the window **120**. The longitudinal axis of the window **120** is formed below the longitudinal axis **124** and extends perpendicular to the longitudinal axis **124**. In another aspect, the window **120** is elongated in a direction substantially parallel to the boundary **129** that separates the first portion **126** from the second portion **128**. The window **120** is rounded such that it conforms to the first portion **126** and the second portion **128** so that the window **120** extends into each of the first portion **126** and the second portion **128**.

FIG. **3** is a front end view of the hydraulic tool **100**. Each of the first and second actuators **130**, **132** extend laterally across the grip **122**. In the illustrated embodiment, the first actuator **130** is separated from the second actuator **132** by a portion of the grip **122**.

FIG. **4** is a back end view of the hydraulic tool **100** including the window **120**. The window **120** extends between a first end **131** and a second end **133** across a perpendicular bisector **134**. The perpendicular bisector **134** perpendicularly intersections the longitudinal axis **124**. The longitudinal sides of the window **120** form a curve between the first end **131** and the second end **133** so that the first end **131** and the second end **133** are disposed closer to the longitudinal axis **124** than the portion of the window proximate to the perpendicular bisector **134**.

FIGS. **5-8** illustrate additional views of the hydraulic tool **100** according to embodiments of the invention. In particular, FIG. **5** is a right side view of the hydraulic tool **100**, FIG. **6** is a left side view of the hydraulic tool **100**, FIG. **7** is a top end view of the hydraulic tool **100**, and FIG. **8** is a bottom end view of the hydraulic tool **100**.

FIGS. **9-16** illustrate the hydraulic tool **100** according to another embodiment of the invention. With reference to FIGS. **9** and **10**, another example window **120** defines a shape that is different from the window **120** shown in FIGS. **1-8**.

Referring to FIG. **10**, the window **120** is elongated in a direction that is substantially perpendicular to the boundary **129** that separates the first portion **126** from the second portion **128**. As such, the window **120** is rounded such that it conforms to the second surface **112**, the first portion **126**, and the second portion **128** so that the window **120** extends into each of the first portion **126** and the second portion **128**.

FIGS. **11-16** illustrate additional view of the hydraulic tool **100** according to embodiments of the invention. In particular, FIG. **11** is a front end view of the hydraulic tool **100** shown in FIGS. **9** and **10**, FIG. **12** is a back end view of the hydraulic tool **100** shown in FIGS. **9-11**, FIG. **13** is a right side view of the hydraulic tool **100** shown in FIGS. **9-12**. FIG. **14** is a left side view of the hydraulic tool **100** shown in FIGS. **9-13**, FIG. **15** is a top end view of the hydraulic tool **100** shown in FIGS. **9-14**, and FIG. **16** is a bottom end view of the hydraulic tool **100** shown in FIGS. **9-15**.

FIGS. **17-19** illustrate the hydraulic tool **100** according to another embodiment of the invention. In the embodiment shown in FIGS. **17-19**, the hydraulic tool **100** includes an attachment loop **121**. The attachment loop **121** can be used in a variety of hydraulic tools, including the embodiments of the hydraulic tool **100** shown in each of FIGS. **1-8** and FIG. **9-16**.

FIGS. **17** and **19** illustrate the hydraulic tool **100** with the attachment loop **121** in an extended position and FIG. **18** illustrates the hydraulic tool **100** with the attachment loops **121** in an upright position.

As shown in FIGS. **17-19**, the attachment loop **121** is attached to the back portion **110**. In the retracted position as shown, for example, in FIGS. **1-16**, the adjustable loop **121** is between the head **102** and the second surface **112**. In the extended position shown in FIG. **17**, the adjustable loop **121** extends beyond the second surface **112**. In the upright position shown in FIG. **18**, the adjustable loop **121** is between the head **102** and the second surface **112** (e.g., as projected onto the longitudinal axis of the hydraulic tool **100**). In some embodiments, the adjustable loop **121** is can be used for hanging the hydraulic tool **100** on a hook or a belt loop, for example.

FIG. **20** is a block diagram of a method **200** of operating a hydraulic tool, such as the hydraulic tool **100** (e.g., any embodiment of the hydraulic tool **100** described herein). By way of example, the method **200** will be described below with reference to the hydraulic tool **100**. At block **202**, the method **200** includes positioning the work piece within the head **102**. For example, a user could place a work piece between the jaws **103**. At block **204**, the method **200** includes activating the first actuator **130** of the hydraulic tool **100**, thereby causing the head **102** (e.g., the jaws **103**) to close upon the work piece.

At block **206**, the method **200** includes making a determination that a cutting, crimping, or shearing operation that satisfies a predetermined criterion has been performed on the work piece by the head **102**. For example, making the determination can include a control system of the hydraulic tool **100** determining that a pressure that has been applied by the head **102** upon the work piece exceeds a threshold

pressure (for example, the pressure threshold can be between approximately 5,000 psi and approximately 10,000 psi, or, for example, approximately 7,200 psi). Additionally or alternatively, making the determination can include the control system determining that a distance **210** (see FIG. **1**) between jaws **103** of the head **102** is less than a threshold distance. Such threshold distance can correspond to a completion of an action performed on a work piece. For example, an approximately zero inch distance (i.e., the jaws are touching) can correspond to a completed cut of the work piece. In another example, a particular non-zero distance can correspond to a completed crimp of the work piece. At block **208**, the method **200** includes causing the indicator light **118** to emit a light (e.g., a green light) that corresponds to the determination.

FIG. **21** is a block diagram of a method **300** of operating a hydraulic tool, such as the hydraulic tool **100**. By way of example, the method **300** will be described below with reference to the hydraulic tool **100**. At block **302**, the method **300** includes positioning the work piece within the head **102**. For example, a user could place a work piece between the jaws **103**. At block **304**, the method **300** includes activating the first actuator **130** of the hydraulic tool **100**, thereby causing the head **102** (e.g., the jaws **103**) to close upon the work piece.

At block **306**, the method **300** includes making a determination that a cutting, crimping, or shearing operation that satisfies a predetermined criterion has not (e.g., yet) been performed on the work piece by the head **102**. For example, making the determination can include a control system of the hydraulic tool **100** determining that a pressure that has been applied by the head **102** upon the work piece has not exceeded a threshold pressure (for example, the pressure threshold can be between approximately 5,000 psi and approximately 10,000, or, for example, approximately 7,200 psi). Additionally or alternatively, making the determination can include the control system determining that a distance **210** (see FIG. **1**) between jaws **103** of the head **102** is greater than a threshold distance, as described above with respect to method **200**. Furthermore, making the determination can include the control system determining that the first actuator **130** has been activated for at least a threshold duration. At block **308**, the method **300** includes causing the indicator light **118** to emit a light (e.g., a red light) that corresponds to the determination.

The description of the different advantageous embodiments has been presented for purposes of illustration and description, and is not intended to be exhaustive or limited to the embodiments in the form disclosed. Many modifications and variations will be apparent to those of ordinary skill in the art. Further, different advantageous embodiments may provide different advantages as compared to other advantageous embodiments. The embodiment or embodiments selected are chosen and described in order to best explain the principles of the embodiments, the practical application, and to enable others of ordinary skill in the art to understand the disclosure for various embodiments with various modifications as are suited to the particular use contemplated.

The invention claimed is:

1. A power tool comprising:
- a head at a first end of the power tool;
- a body including a first surface; and
- a back portion including a second surface and a third surface,
  - the second surface at a second end of the power tool opposite the first end,
  - the third surface including a first portion that directly abuts the second surface, the third surface including a second portion that directly abuts the first surface; and
- an indicator light on the third surface.

2. The power tool of claim **1**, wherein the back portion includes a window; and wherein at least a portion of the window overlaps the first portion and the second portion.

3. The power tool of claim **2**, wherein the window at least partially covers the indicator light.

4. The power tool of claim **2**, wherein the window is rounded with respect to at least one of the second surface, the first portion, or the second portion.

5. The power tool of claim **2**, wherein the window is elongated in a direction that is substantially parallel to a boundary that separates the first portion from the second portion.

6. The power tool of claim **1**, wherein the first surface is parallel to a longitudinal axis of the power tool.

7. The power tool of claim **1**, wherein the second surface is perpendicular to a longitudinal axis of the power tool.

8. The power tool of claim **1**, wherein the third surface is inclined with respect to the first surface and the second surface.

9. A power tool comprising:
- a head at a first end of the power tool;
- a body including a first surface; and
- a back portion including a second surface at a second end of the power tool, the back portion including a third surface directly between the first surface and the second surface;
- an indicator light on the third surface; and
- a window covering at least a portion of the indicator light.

10. The power tool of claim **9**, wherein the back portion includes a grip extending from the body away from the first surface.

11. The power tool of claim **10**, wherein the grip includes a first actuator that causes the head to close upon a work-piece when activated.

12. The power tool of claim **10**, wherein the grip further comprises a second actuator that causes the head to open away from a work piece when activated.

13. The power tool of claim **9**, and further comprising an adjustable loop coupled to the back portion.

14. The power tool of claim **13**, wherein the adjustable loop is between the head and the second surface in a retracted position.

15. The power tool of claim **13**, wherein the adjustable loop extends beyond the second surface in an extended position.

16. The power tool of claim **13**, wherein the adjustable loop is between the head and the second surface in an upright position.

17. A method of operating a power tool on a work piece, the method comprising:
- activating a first actuator to perform an operation to cause a head to close upon the work piece;
- determining a predetermined criterion is satisfied indicating the operation has been performed successfully, the predetermined criterion including comparing a distance between jaws of the head with a threshold distance;
- causing an indicator light to emit a first light corresponding to the predetermined criterion being satisfied;
- determining the predetermined criterion has not been satisfied indicating the operation has not been performed successfully; and

causing the indicator light to emit a second light corresponding to the predetermined criterion not being satisfied, the second light being a different color than the first light.

18. The method of claim **17**, and further comprising actuating a second actuator of the power tool, causing the head to open away from the work piece.

19. The method of claim **17**, wherein determining the predetermined criterion further comprises determining a pressure applied by the head upon the work piece exceeds a threshold pressure.

20. The method of claim **17**, wherein determining the predetermined criterion further comprises determining that the first actuator has been activated for at least a threshold duration.

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