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(54) **TOOL ADAPTOR FOR USE WITH A
RECIPROCATING SAW**

Related U.S. Application Data

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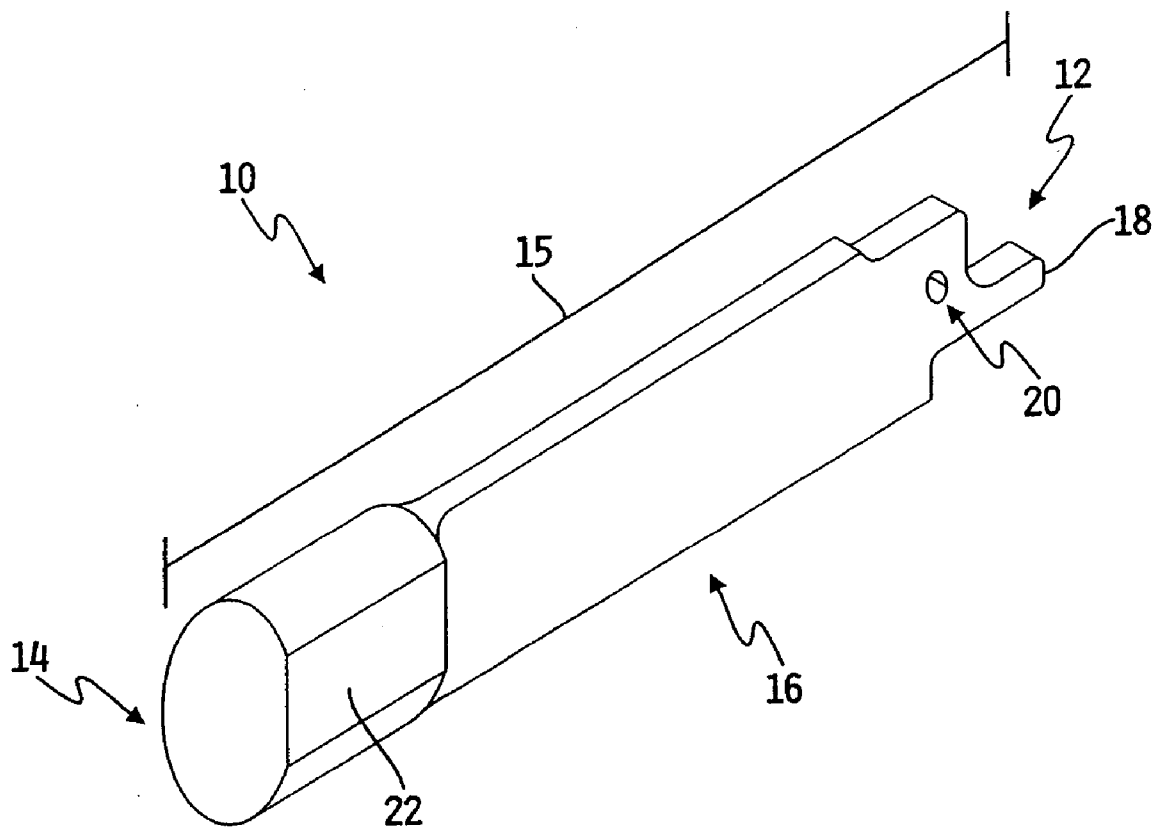
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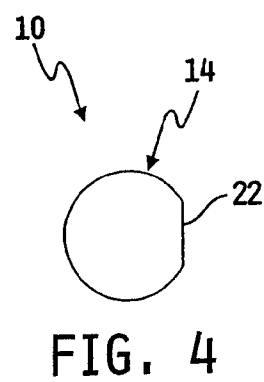
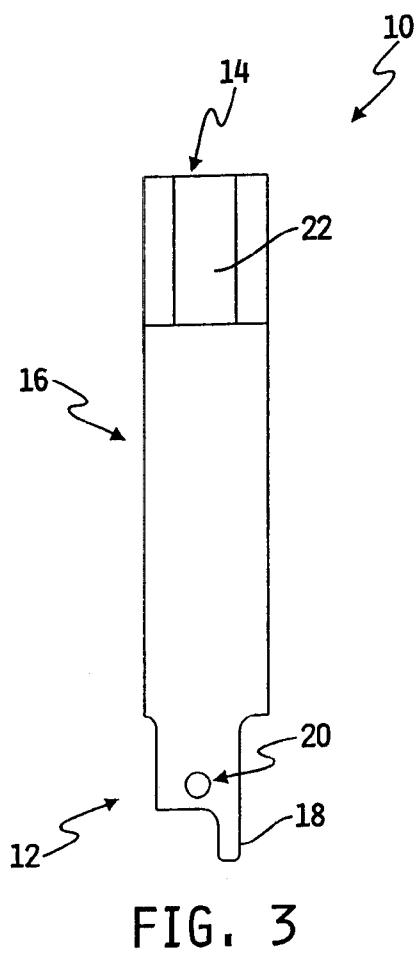
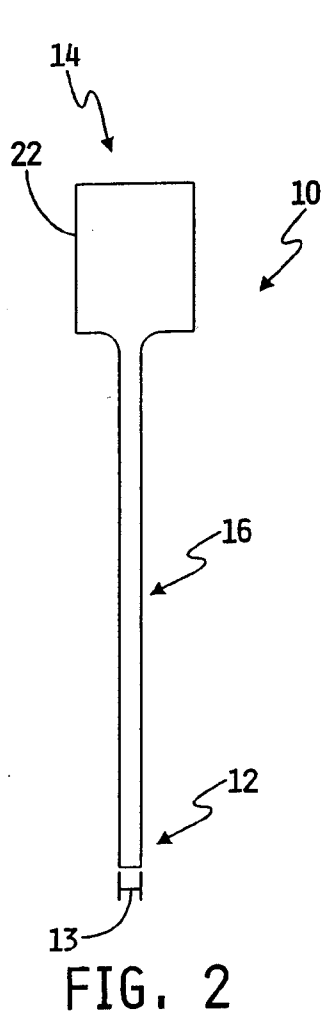
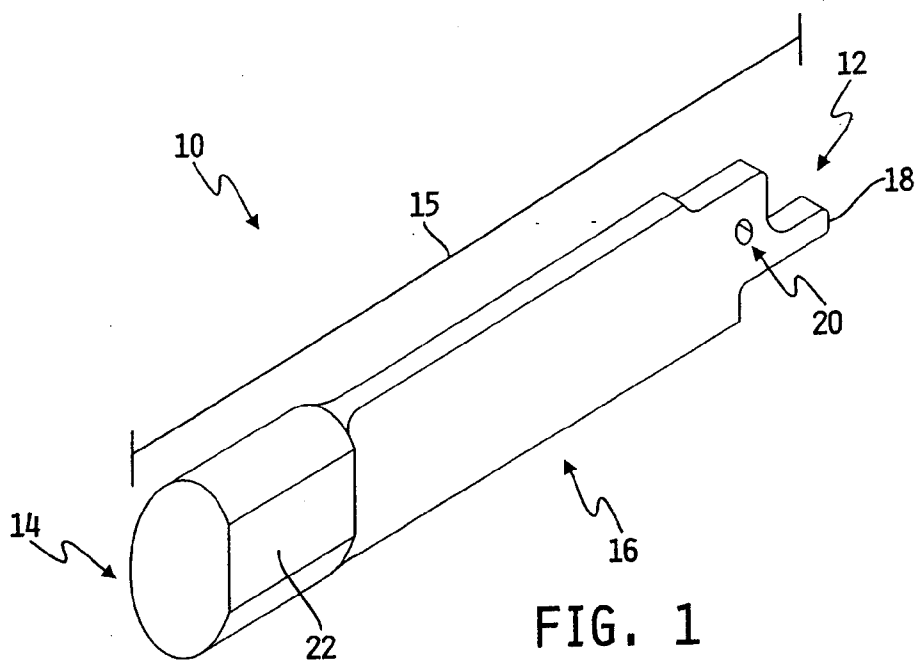
(57) **ABSTRACT**

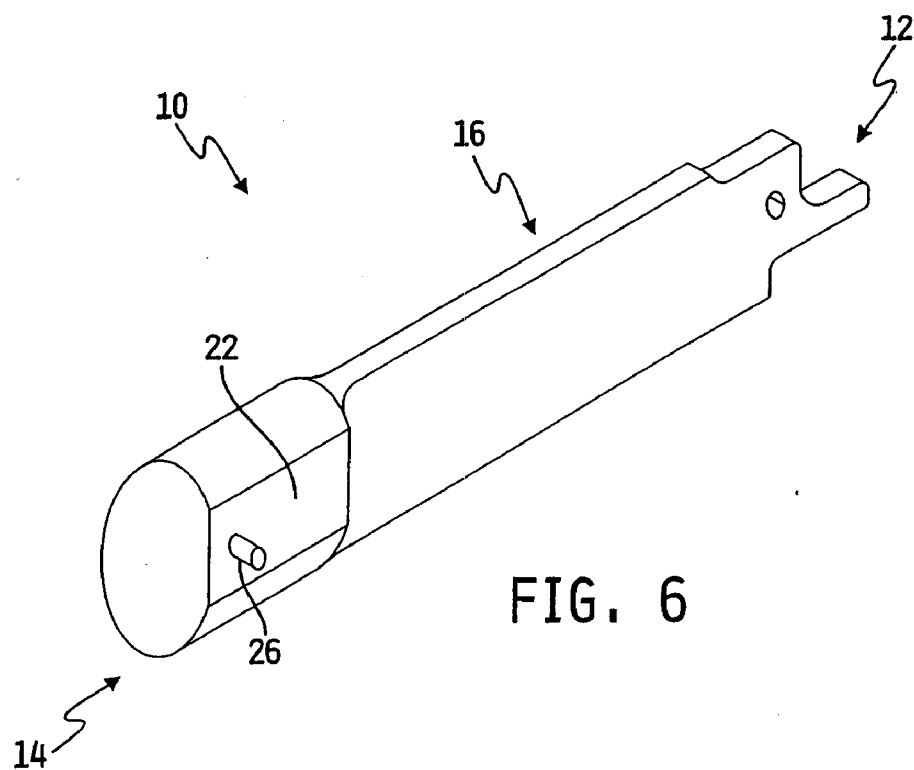
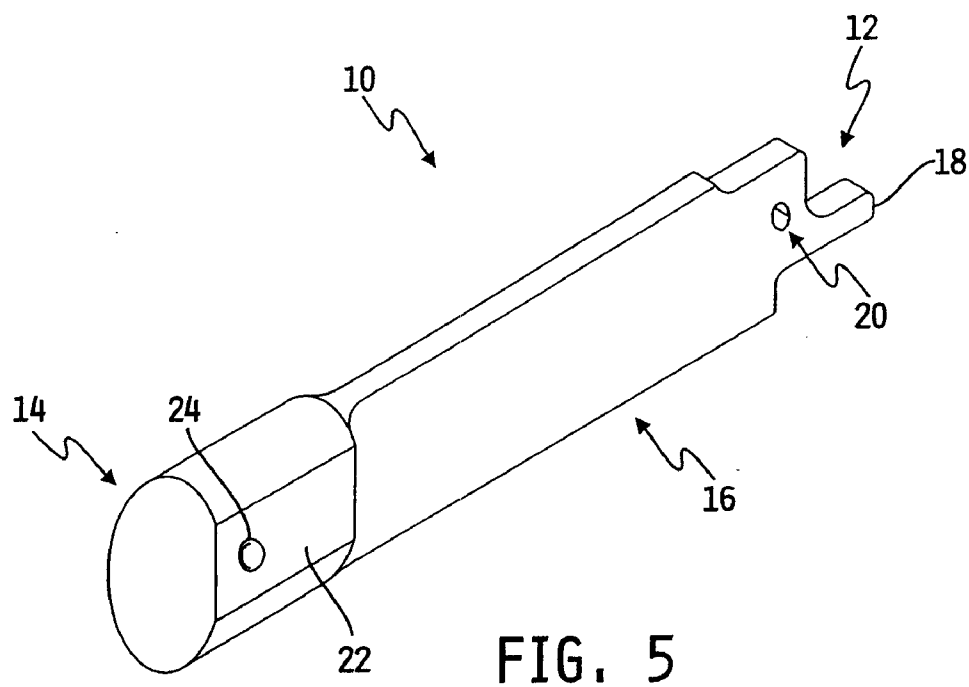
A tool for use with a reciprocating saw includes an adaptor and a scraper tool. The adaptor is configured to be coupled to the reciprocating saw and the scraper tool. The scraper tool may include one or more biasing members configured to bias at least a portion of the scraper tool away from the adaptor.

(21) Appl. No.: **12/360,098**

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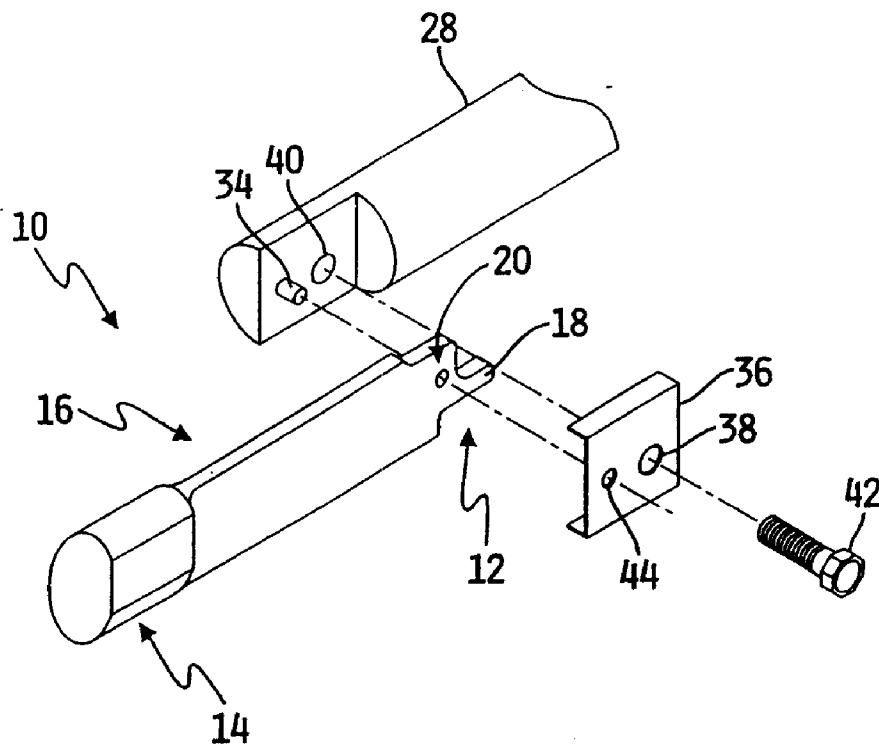


FIG. 7

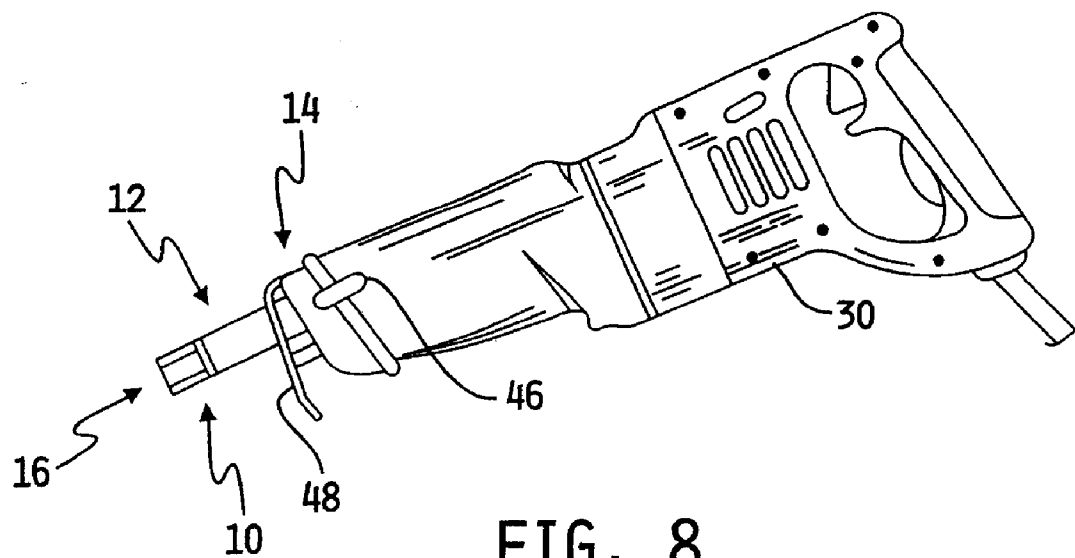
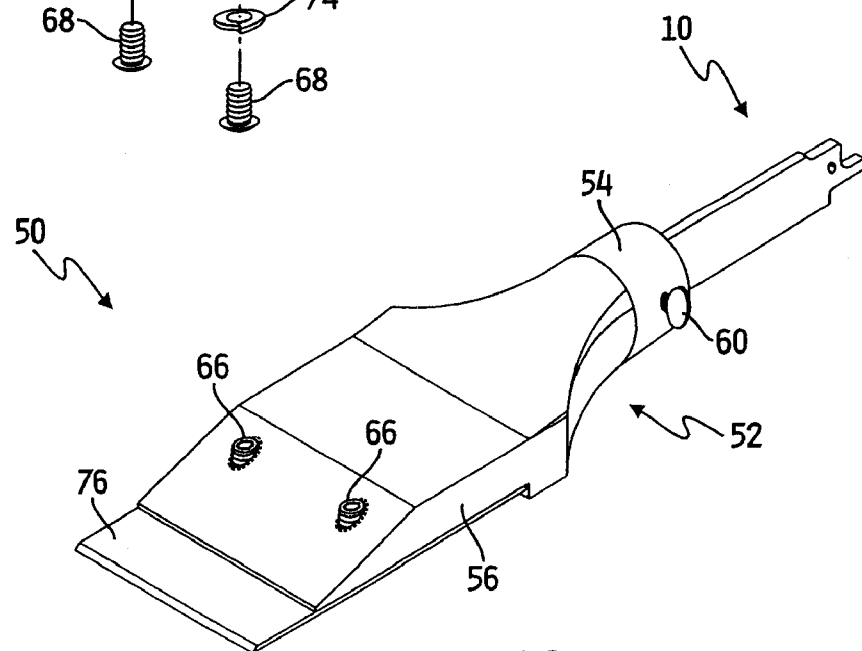
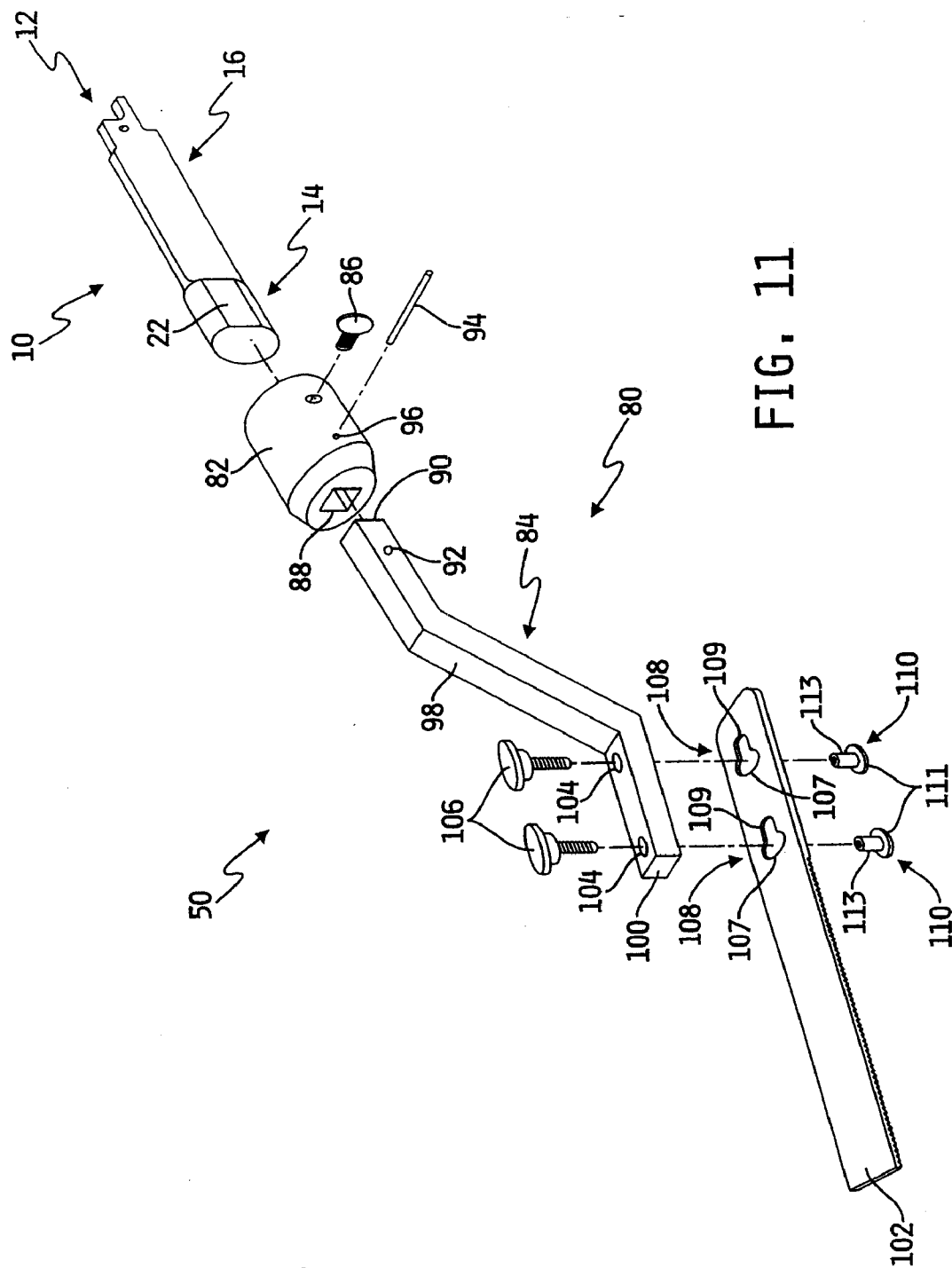


FIG. 8





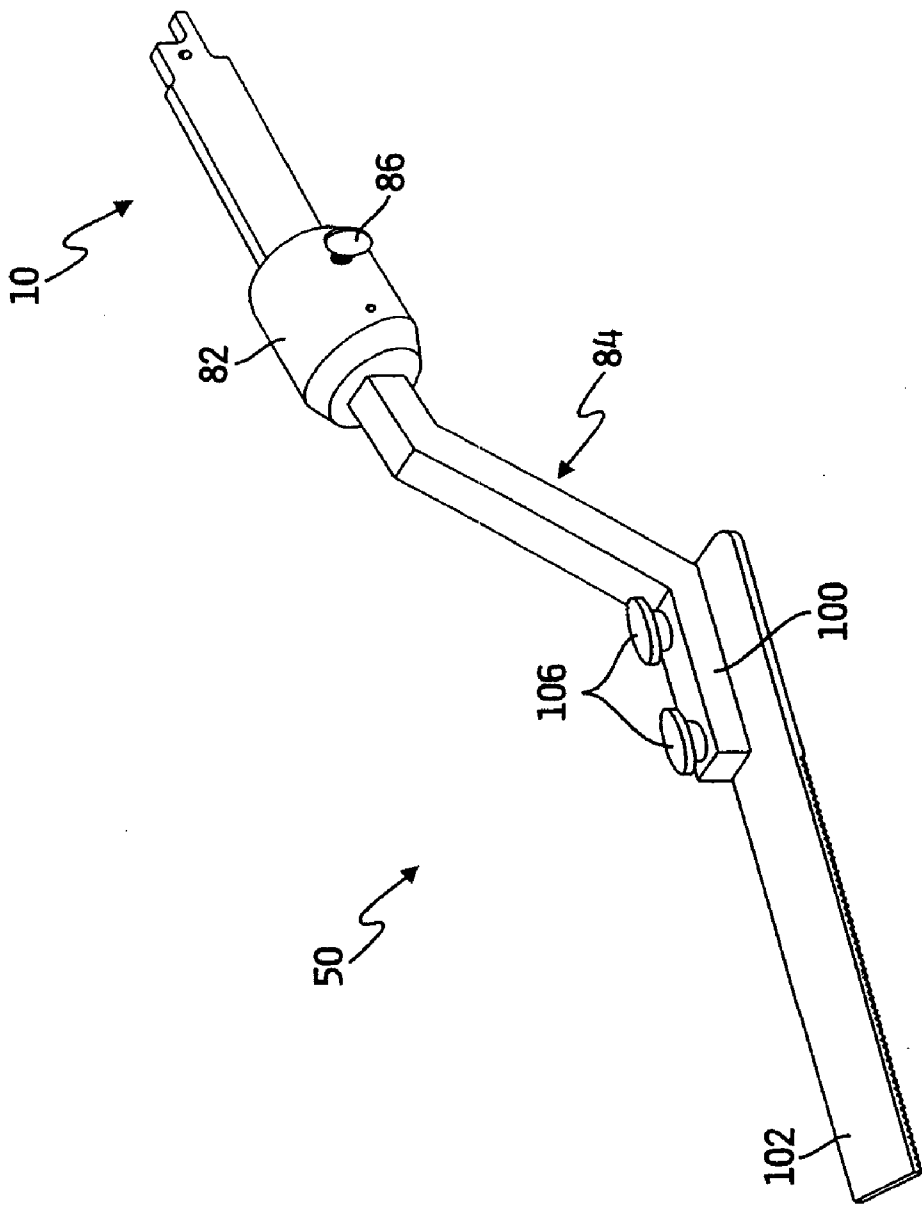
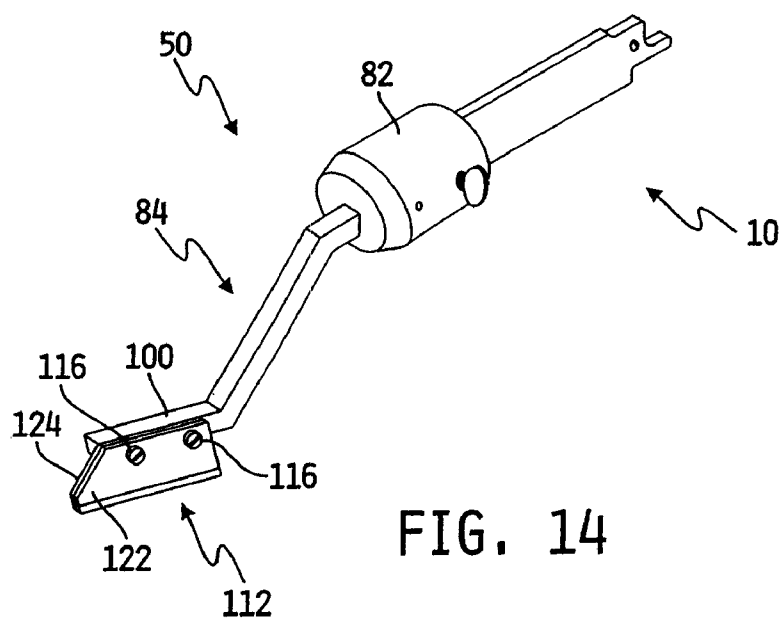
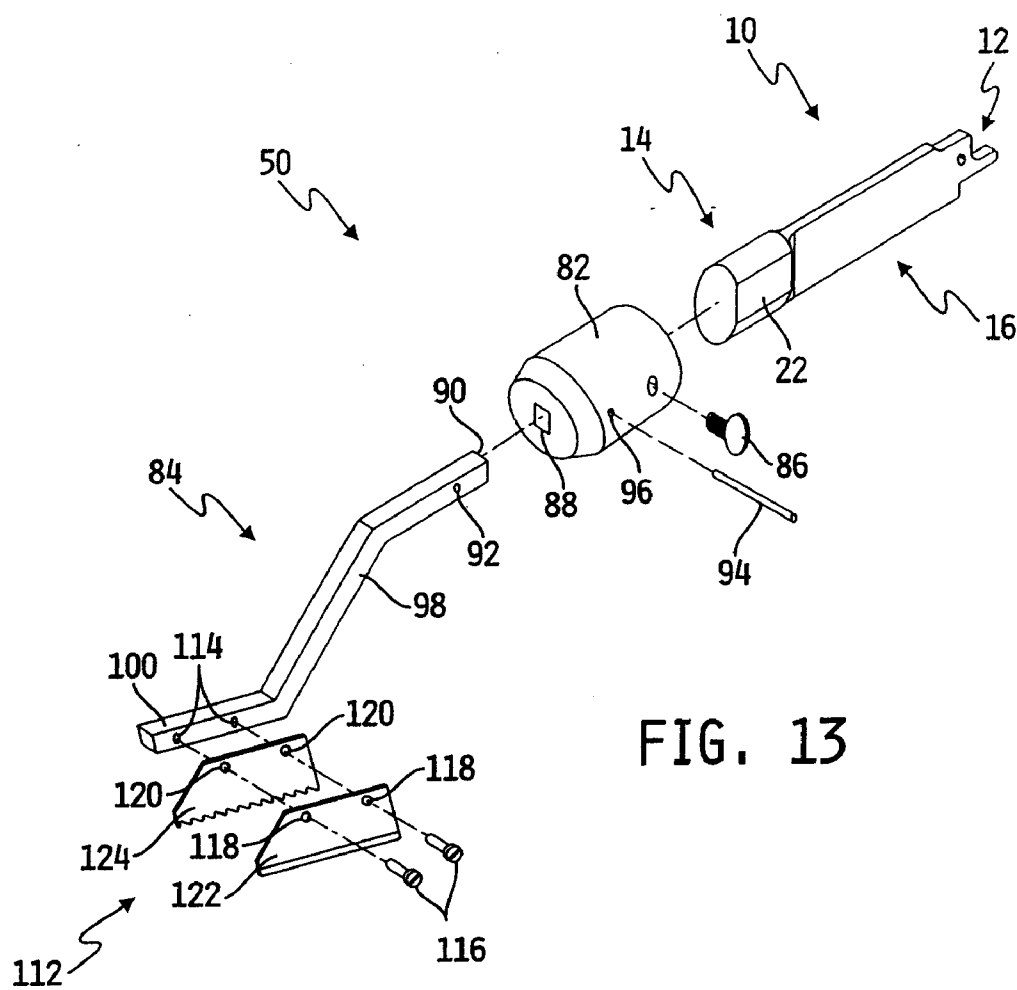


FIG. 12



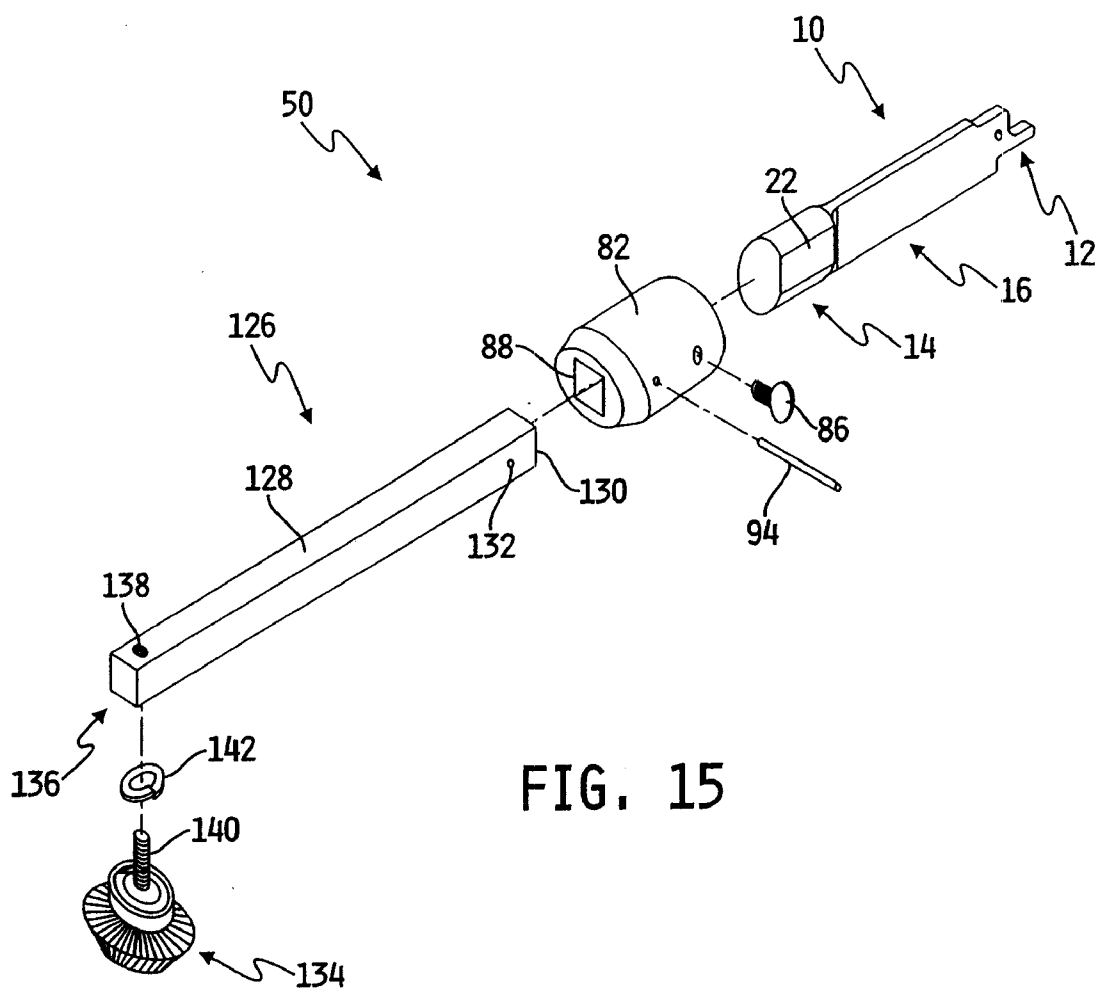


FIG. 15

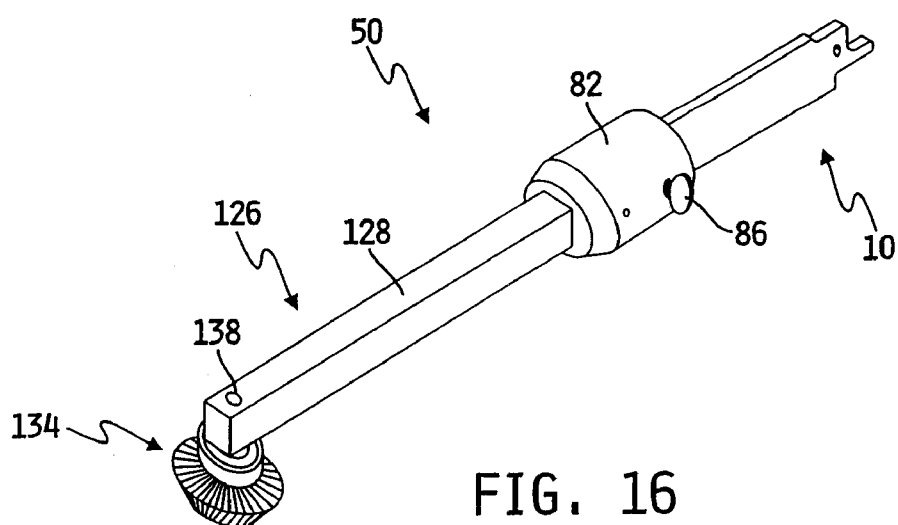
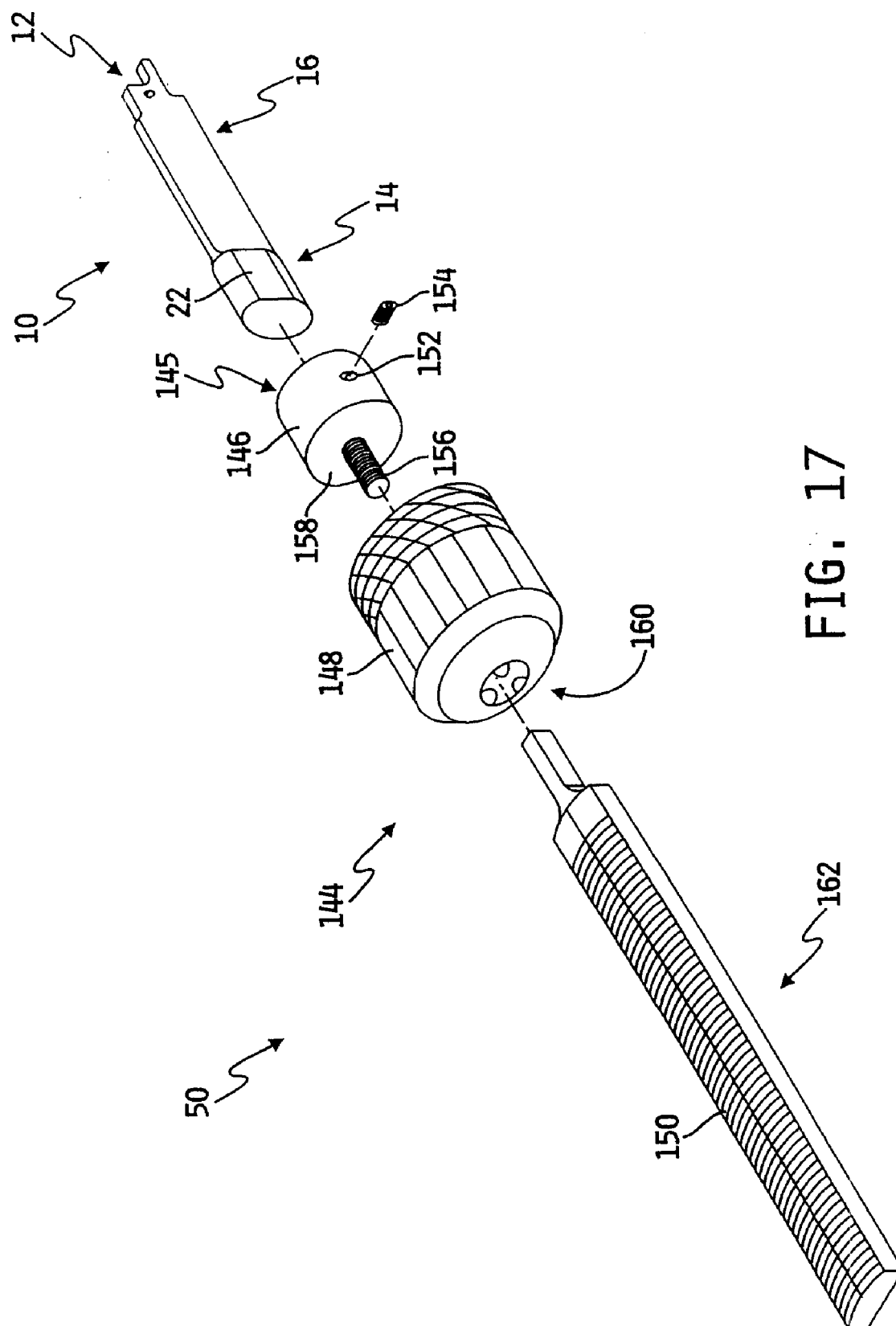
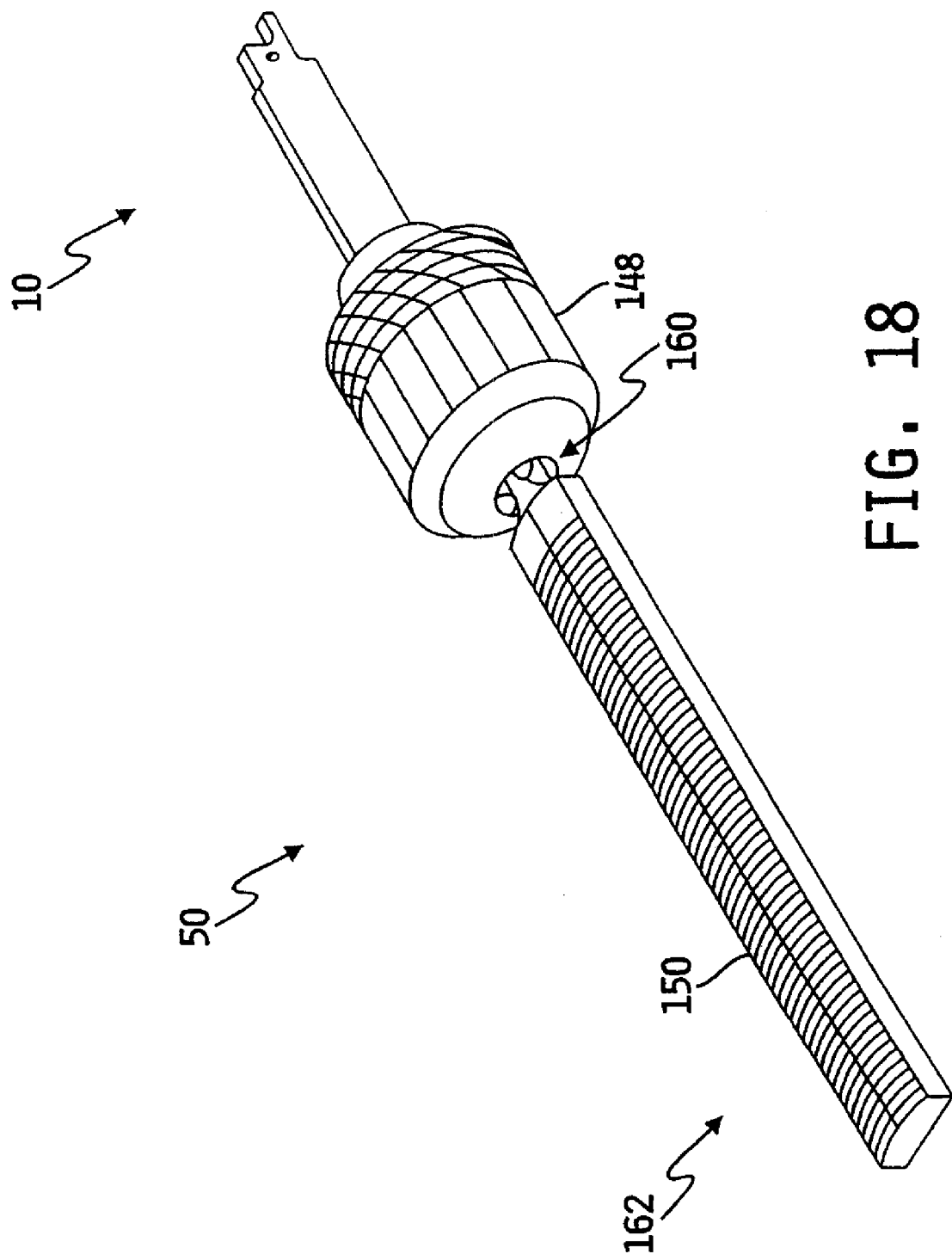


FIG. 16





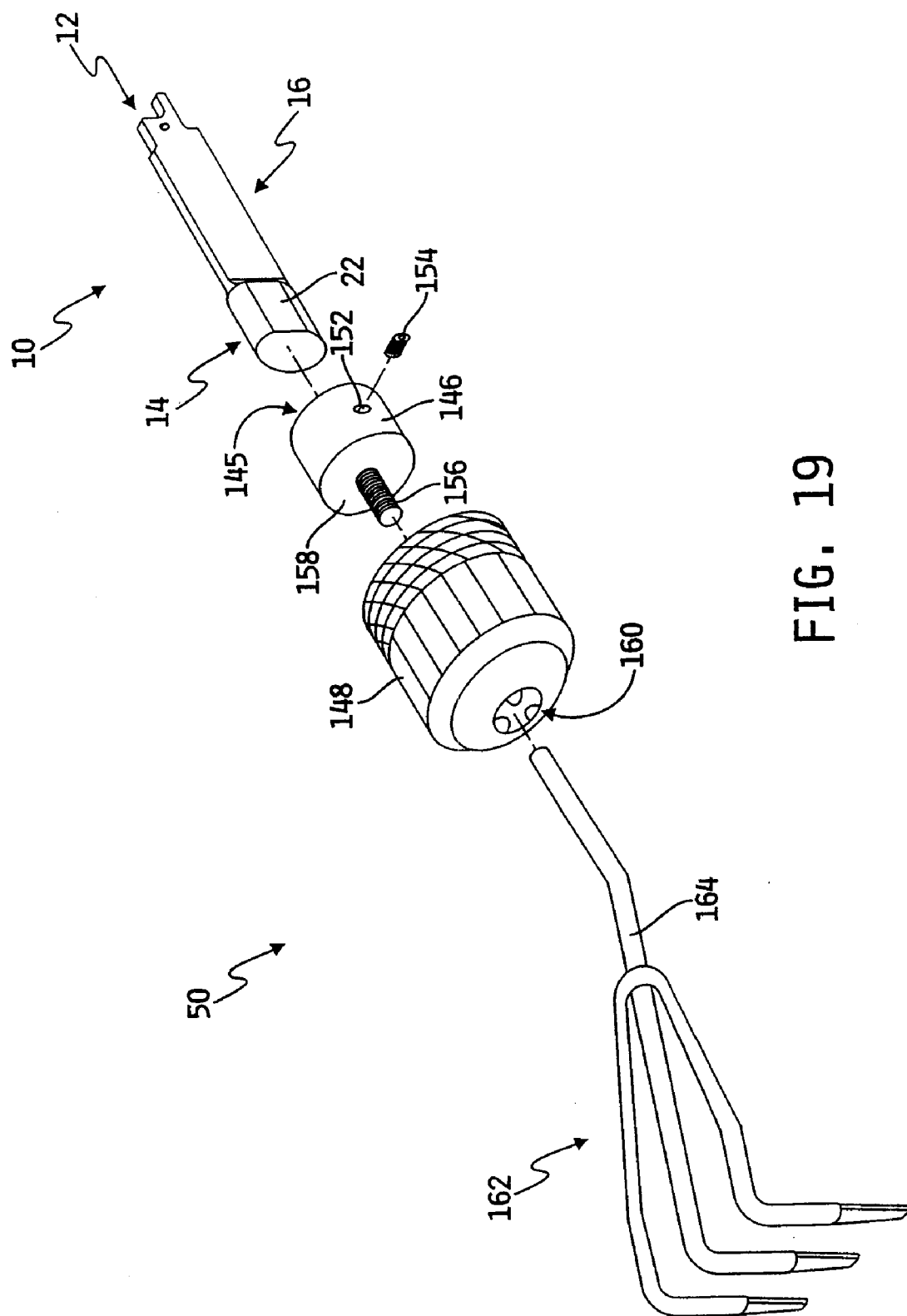


FIG. 19

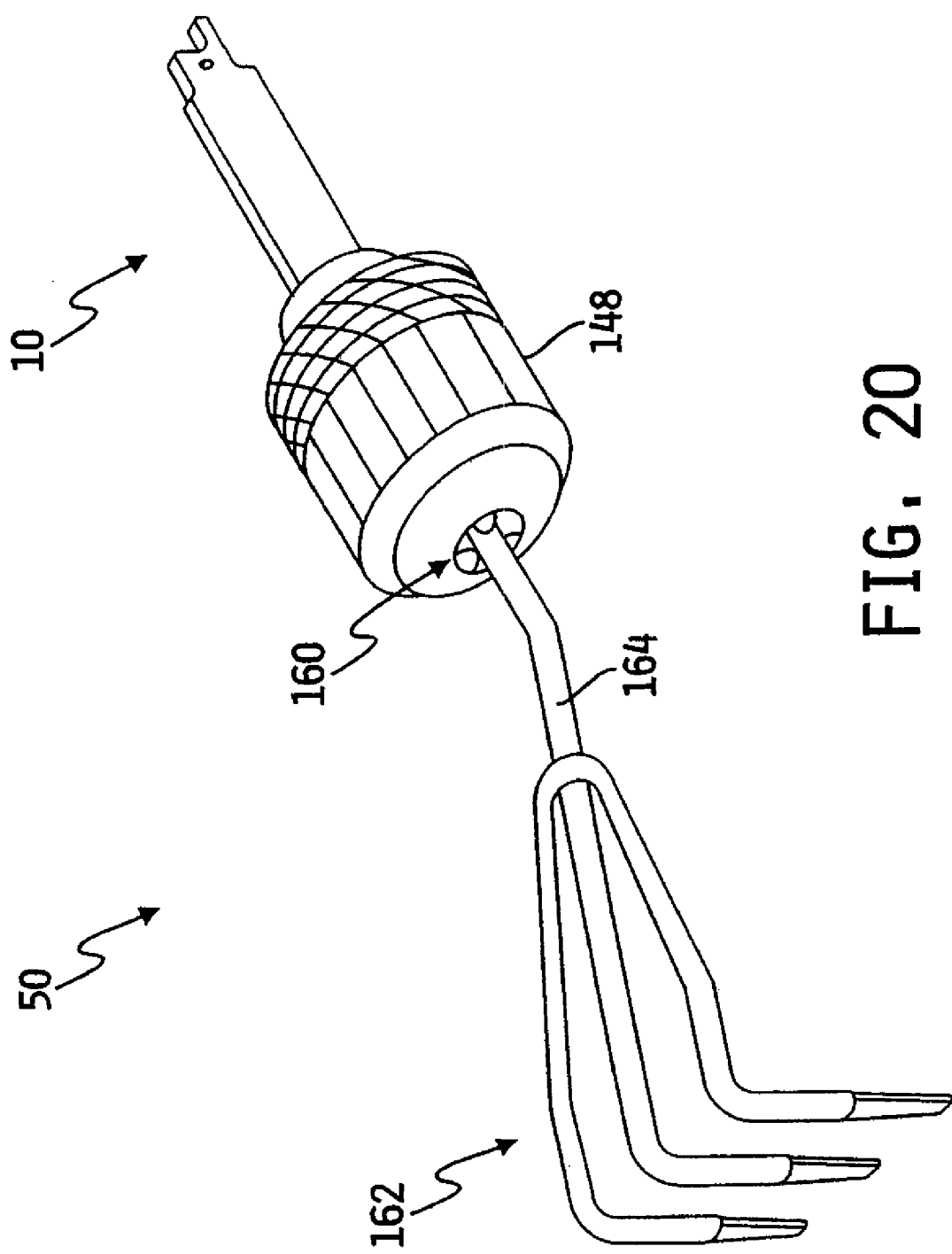


FIG. 20

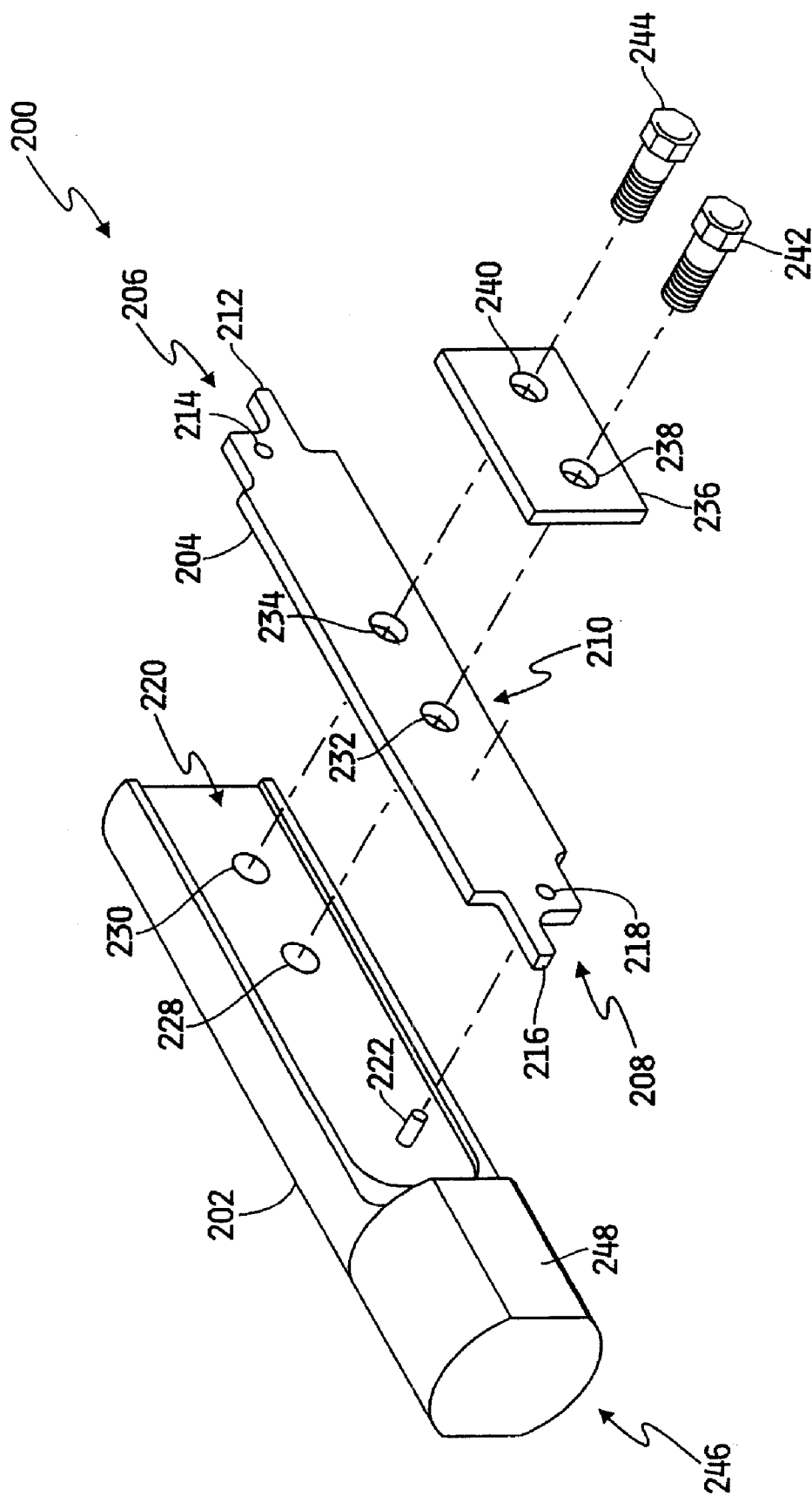


FIG. 21

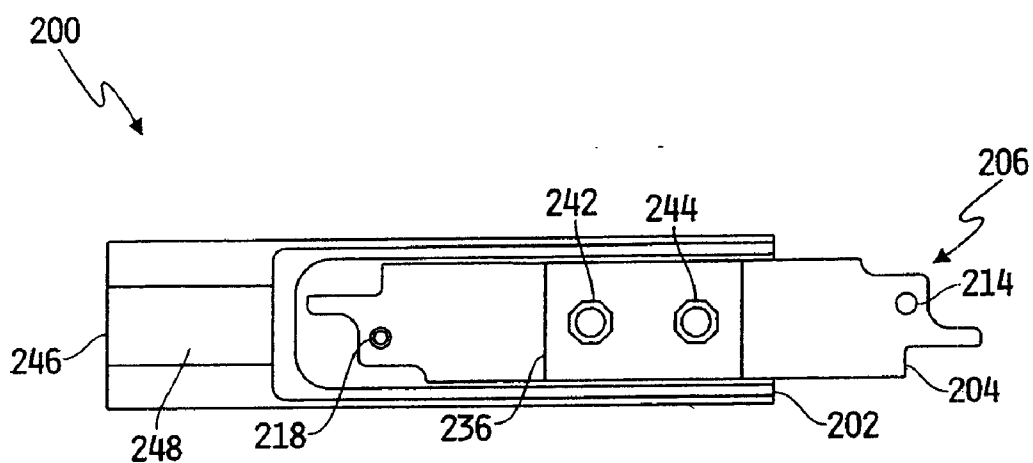


FIG. 22

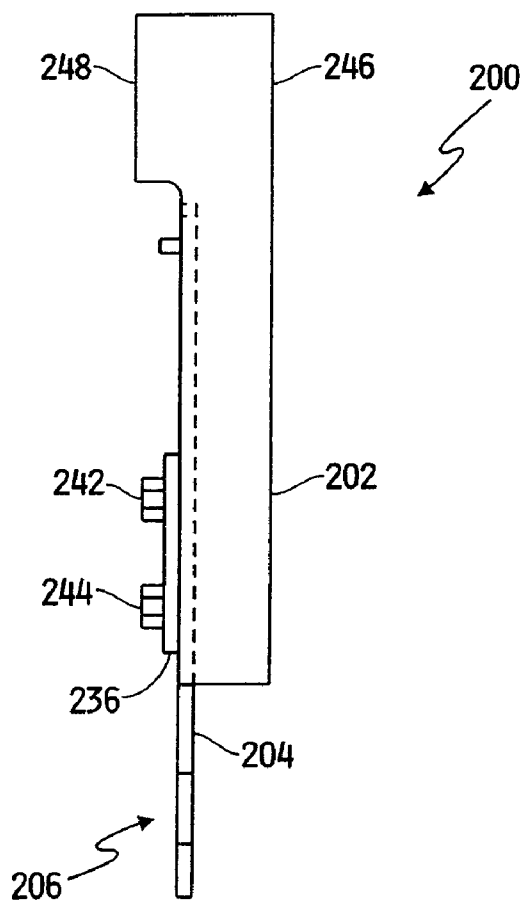


FIG. 23

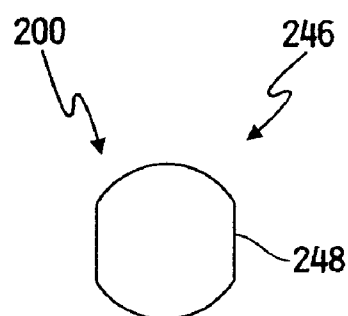
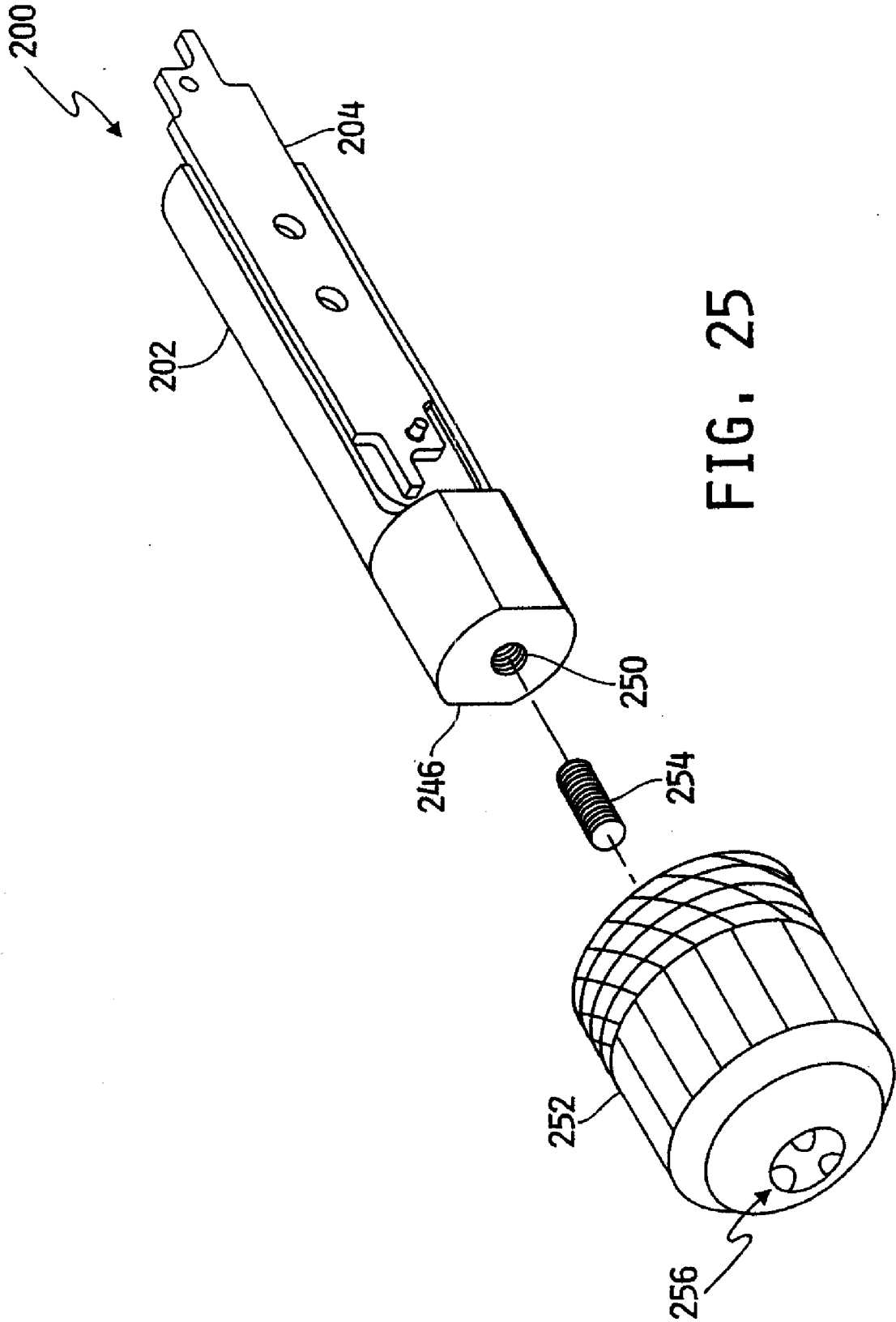


FIG. 24



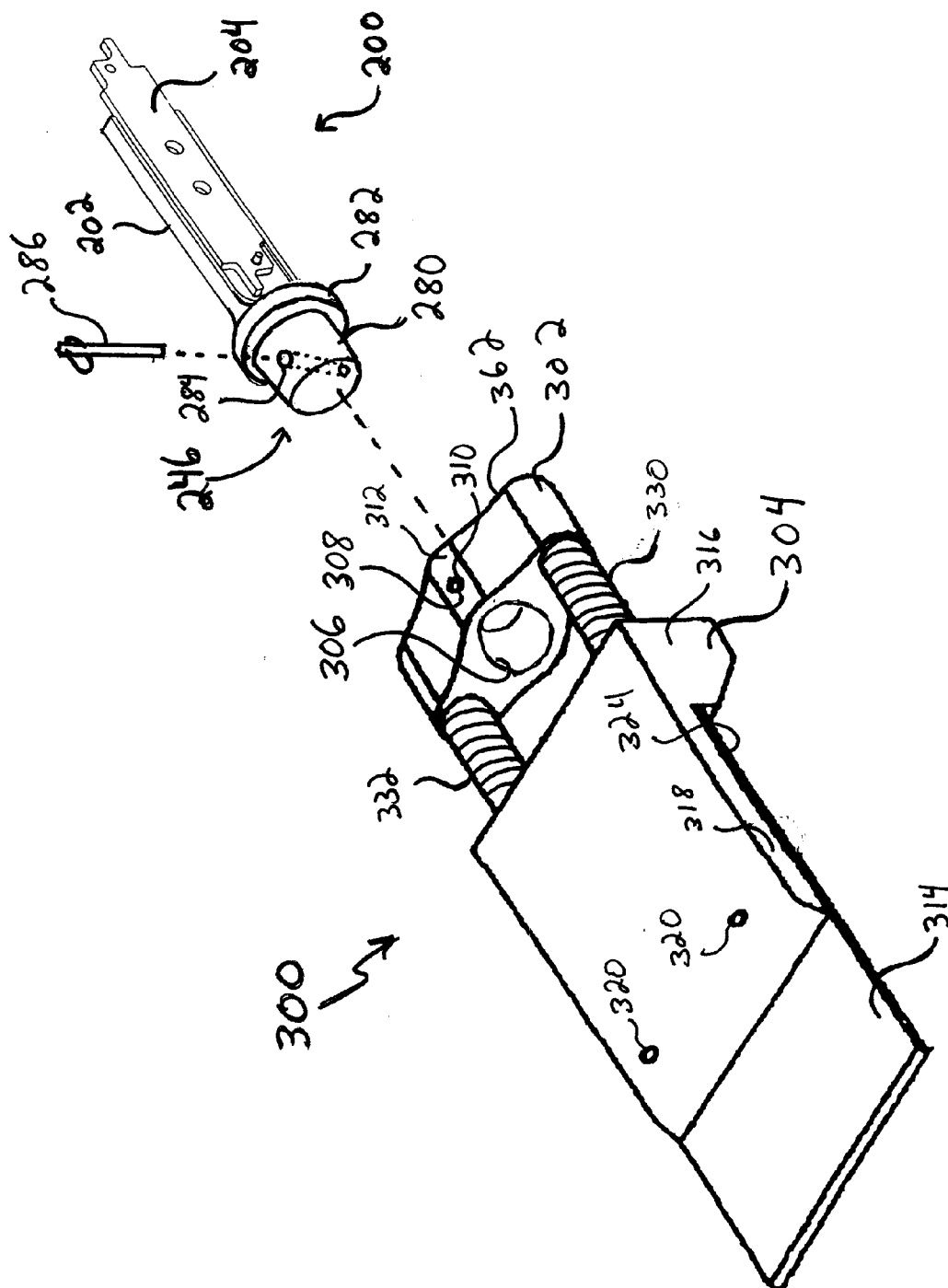


Fig. 26

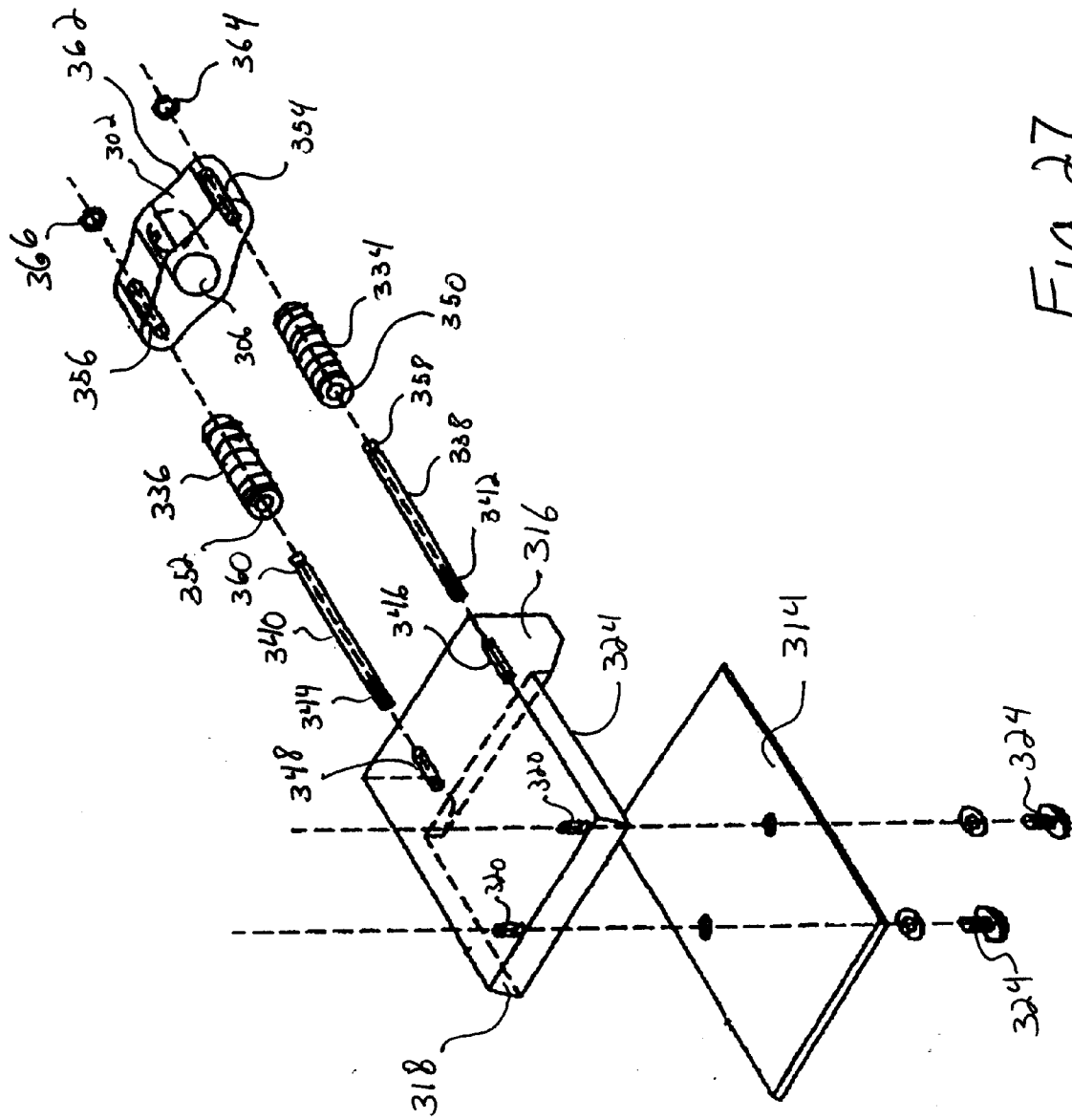


Fig. 27

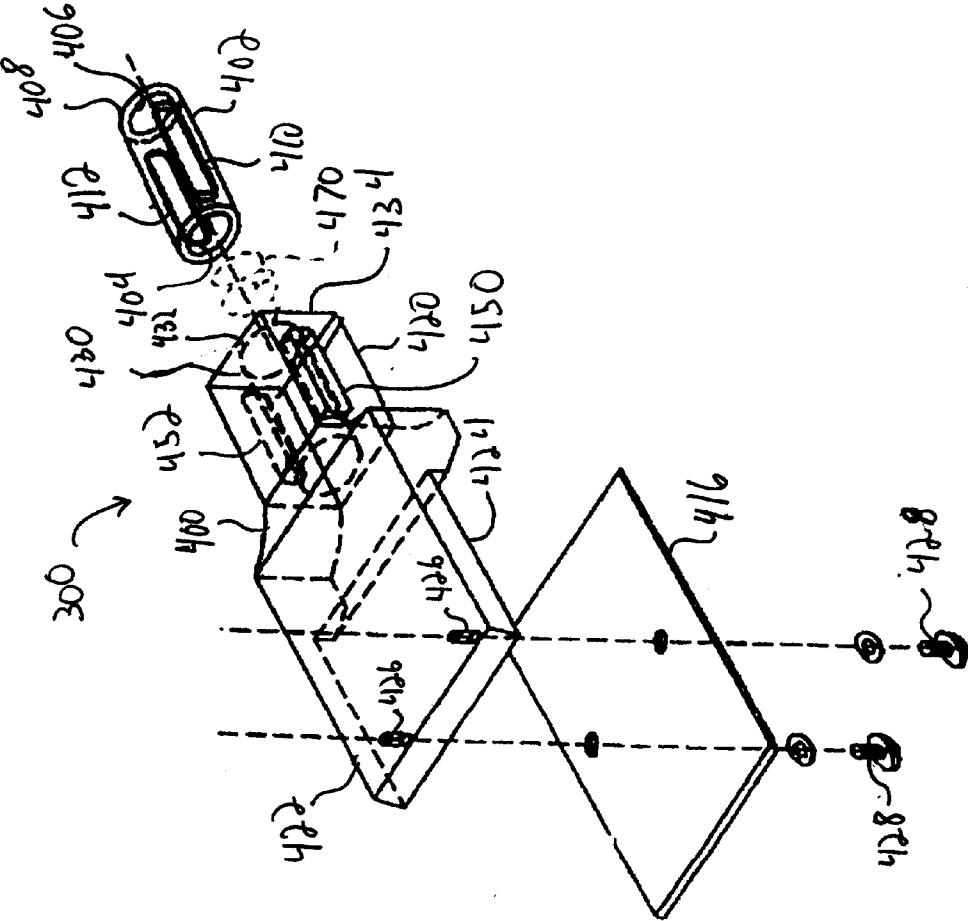


Fig. 28

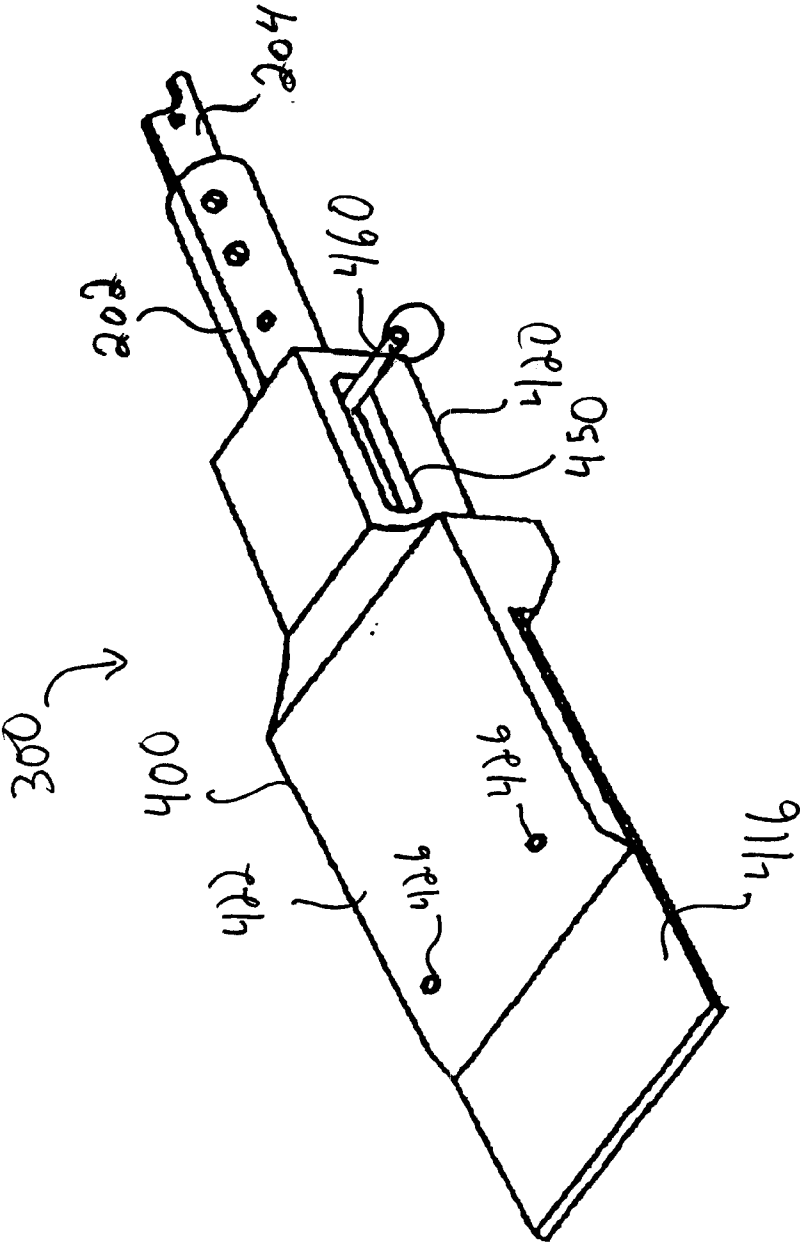


Fig. 29

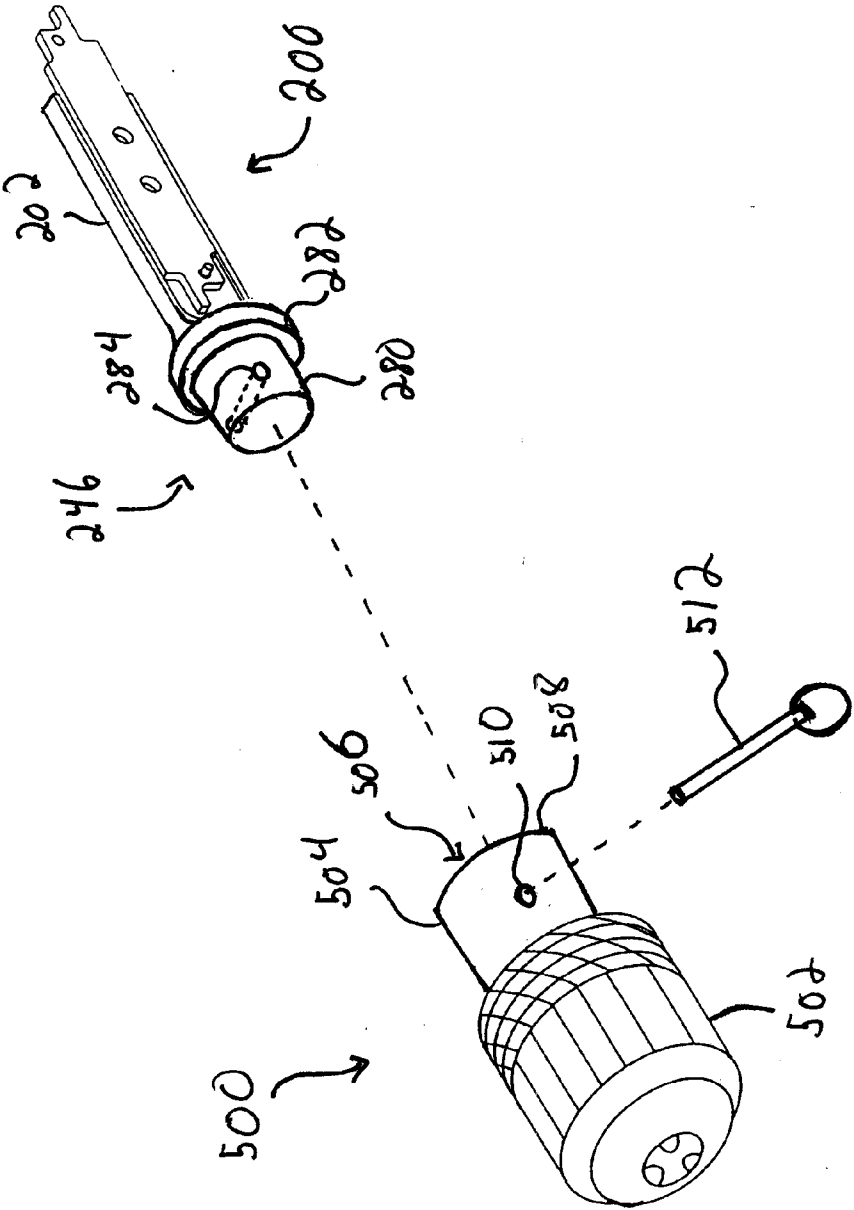


FIG. 30

TOOL ADAPTOR FOR USE WITH A RECIPROCATING SAW

CROSS-REFERENCE TO RELATED U.S. PATENT APPLICATION

[0001] This patent application claims priority to and the benefit of U.S. Provisional Patent Application Ser. No. 61/062,335, entitled "Tool Adaptor for use with a Reciprocating Saw," which was filed on Jan. 25, 2008, by Timothy D. Quinn, the entirety of which is expressly incorporated herein by reference.

[0002] Cross-reference is made to U.S. Utility Patent Application Ser. No. 10/941,345 entitled "Tool Adaptor for use with a Reciprocating Saw," which was filed on Sep. 15, 2004, by Timothy D. Quinn, and to U.S. Utility Patent Application Ser. No. 11/297,731 entitled "Tool Adaptor for use with a Reciprocating Saw," which was filed on Dec. 8, 2005, by Timothy D. Quinn, the entirety of each of which is expressly incorporated herein by reference.

TECHNICAL FIELD

[0003] The present disclosure relates generally to reciprocating saws and, more particularly, to tools for use with reciprocating saws.

BACKGROUND OF THE DISCLOSURE

[0004] Reciprocating saws are used by carpenters, builders, and other users to cut wood, metal, plastic, and other types of materials and structures. The generally elongated design of reciprocating saws allows such saws to be used in areas wherein other types of saws, such as circular saws, may be too cumbersome. In use, a user couples a reciprocating saw blade to a saw blade receiver of the reciprocating saw. The user may operate the reciprocating saw to cause the saw blade to be reciprocated or moved in a back and forth motion. Unlike manual saws, the automated reciprocation of the saw blade causes the saw blade to saw or cut materials with little manual sawing motion from the user.

[0005] Other tools, such as scrapers and files, also use a reciprocating motion to perform their tool function. However, such tools must be manually operated by moving the tool in a back and forth motion. Repetitive operation of such tools may be difficult in some areas and may cause strain on the operator over time.

SUMMARY OF THE DISCLOSURE

[0006] According to one aspect, a tool for use with a reciprocating saw may include a first adaptor member, a second adaptor member, and a scrapper tool. The first adaptor member may include opposing ends. Each opposing end may be configured to couple with the reciprocating saw. In some embodiments, the first adaptor member may include an elongated portion defined between the opposing ends. In such embodiments, the elongated portion may be configured to be reciprocated through a guard of the reciprocating saw while the reciprocating saw is operated by a user. The second adaptor member may be configured to couple with the first adaptor member and may have a first end.

[0007] The scrapper tool may include an adaptor body, a scrapper blade receiver, and at least one biasing member. The adaptor body may be configured to couple with the first end of the second adaptor member. For example, in some embodiments, the adaptor body of the scrapper tool may include an

aperture defined therein sized to receive the first end of the second adaptor member. The scrapper blade receiver may be configured to receive a scrapper blade. The at least one biasing member may be positioned between the adaptor body and the scrapper blade receiver and may bias the scrapper blade receiver away from the adaptor body.

[0008] In some embodiments, the second adaptor member may include a first passageway defined through the first end. Additionally, the adaptor body of the scrapper tool may include a second passageway extending from a top surface of the adaptor body to the aperture. In such embodiments, the first passageway and the second passageway may be in registry with each other when the first end of the second adaptor member is received in the aperture of the adaptor body of the scrapper tool.

[0009] In some embodiments, the scrapper tool may include a first biasing member and a second biasing member. Each of the first and second biasing members may be positioned between the adaptor body and the scrapper blade receiver and may bias the scrapper blade receiver away from the adaptor body. In some embodiments, the first and second biasing members may be embodied as first and second springs. Additionally, in some embodiments, the scrapper tool may include a first bar and a second bar. The first bar may be received in a first internal passageway of the first spring. The second bar may be received in a second internal passageway of the second spring. Each of the first and second bars may be coupled to the adaptor body and scrapper blade receiver. In some embodiments, each of the first and second bars may include a first threaded end received in a corresponding threaded aperture of the scrapper blade receiver and a second end received in a corresponding passageway defined in the adaptor body.

[0010] According to another aspect, a tool for use with a reciprocating saw may include a first adaptor member, a second adaptor member, and a scrapper tool. The first adaptor member may include opposing ends. Each opposing end may be configured to couple with the reciprocating saw. In some embodiments, the first adaptor member may include an elongated portion defined between the opposing ends. In such embodiments, the elongated portion may be configured to be reciprocated through a guard of the reciprocating saw while the reciprocating saw is operated by a user. The second adaptor member may be configured to couple with the first adaptor member and may have a first end.

[0011] The scrapper tool may include a cylindrical adaptor body and a scrapper blade receiver. The cylindrical adaptor body may include a first opening sized to receive the first end of the second adaptor member. The scrapper blade receiver may be configured to receive a scrapper blade. Additionally, the scrapper blade receiver may include an aperture defined therein. The cylindrical adaptor body and the first end of the second adaptor member may be received in the aperture of the scrapper blade receiver.

[0012] In some embodiments, the cylindrical adaptor body of the scrapper tool may include a plurality of first elongated slots defined therein. Additionally, in some embodiments, the scrapper blade receiver includes a plurality of second elongated slots defined therein. The plurality of second elongated slots may be substantially parallel to the plurality of first elongated slots when the cylindrical adaptor body is received in the aperture of the scrapper blade receiver. The second adaptor member may include a passageway defined in the first end in some embodiments. In such embodiments, the pas-

sageway of the second adaptor may be in registry with the plurality of first and second elongated slots when the first end of the second adaptor member is received in the aperture of the scrapper blade receiver.

[0013] In some embodiments, the tool may also include a biasing member. The biasing member may be received in the aperture of the scrapper blade receiver. The biasing member may bias the scrapper blade receiver away from the second adaptor member. In some embodiments, the biasing member may be embodied as a spring.

[0014] According to a further aspect, a scrapper tool for use with a reciprocating saw may include an adaptor body, a scrapper blade receiver, and at least one biasing member. The adaptor body may include an aperture configured to receive an end of an adaptor couplable to the reciprocating saw. The scrapper blade receiver may be configured to receive a scrapper blade. The at least one biasing member may be positioned between the adaptor body and the scrapper blade receiver and may bias the scrapper blade receiver away from the adaptor body.

[0015] In some embodiments, the at least one biasing member may be embodied as a first biasing member and a second biasing member. In such embodiments, each of the first and second biasing members may be positioned between the adaptor body and the scrapper blade receiver. Additionally, each of the first and second biasing members may bias the scrapper blade receiver away from the adaptor body. The first and second biasing members may be embodied as first and second springs in some embodiments.

[0016] Additionally, in some embodiments, the scrapper tool may include a first bar and a second bar. The first bar may be received in a first internal passageway of the first spring. The second bar may be received in a second internal passageway of the second spring. Each of the first and second bars may be coupled to the adaptor body and scrapper blade receiver. Additionally, each of the first and second bars may include a first threaded end received in a corresponding threaded aperture of the scrapper blade receiver and a second end received in a corresponding passageway defined in the adaptor body.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] The detailed description particularly refers to the following figures, in which:

[0018] FIG. 1 is a perspective view of a tool adaptor for use with a reciprocating saw and having a first end configured to be coupled to the saw and a second end configured to be coupled with a tool;

[0019] FIG. 2 is a plan view of the adaptor of FIG. 1;

[0020] FIG. 3 is a side elevation view of the adaptor of FIG. 1;

[0021] FIG. 4 is an end elevation view of the second end of the adaptor of FIG. 1;

[0022] FIG. 5 is a tool adaptor similar to the tool adaptor of FIG. 1 and having a second end including a biased detent;

[0023] FIG. 6 is a tool adaptor similar to the tool adaptor of FIG. 1 and having a second end including a protrusion;

[0024] FIG. 7 is a side elevation view of an illustrative reciprocating saw having the adaptor of FIG. 1 coupled thereto;

[0025] FIG. 8 is an exploded perspective view of the adaptor of FIG. 1 and a reciprocating saw blade receiver of the reciprocating saw of FIG. 7;

[0026] FIG. 9 is an exploded perspective view of the adaptor of FIG. 1 and a scrapper tool configured to be coupled with the adaptor;

[0027] FIG. 10 is a perspective view of the scrapper tool of FIG. 9 coupled with the adaptor of FIG. 1;

[0028] FIG. 11 is an exploded perspective view of the adaptor of FIG. 1 and a saw tool configured to be coupled with the adaptor;

[0029] FIG. 12 is a perspective view of the saw tool of FIG. 11 coupled with the adaptor of FIG. 1;

[0030] FIG. 13 is an exploded perspective view of the adaptor of FIG. 1 and a grout saw tool configured to be coupled with the adaptor;

[0031] FIG. 14 is a perspective view of the grout saw tool of FIG. 13 coupled with the adaptor of FIG. 1;

[0032] FIG. 15 is an exploded perspective view of the adaptor of FIG. 1 and a brush tool configured to be coupled with the adaptor;

[0033] FIG. 16 is a perspective view of the brush tool of FIG. 15 coupled with the adaptor of FIG. 1;

[0034] FIG. 17 is an exploded perspective view of the adaptor of FIG. 1 and a file tool configured to be coupled with the adaptor and having a keyless chuck;

[0035] FIG. 18 is a perspective view of the file tool of FIG. 17 coupled with the adaptor of FIG. 1;

[0036] FIG. 19 is an exploded perspective view of the adaptor of FIG. 1 and a cultivating tool configured to be coupled with the adaptor of FIG. 1 and having a keyless chuck;

[0037] FIG. 20 is a perspective view of the cultivating tool of FIG. 19 coupled with the adaptor of FIG. 1;

[0038] FIG. 21 is an exploded perspective view of another embodiment of a tool adaptor for use with a reciprocating saw;

[0039] FIG. 22 is a side elevation view of the tool adaptor of FIG. 21;

[0040] FIG. 23 is a plan view of the tool adaptor of FIG. 21;

[0041] FIG. 24 is an end elevation view of the tool adaptor of FIG. 21;

[0042] FIG. 25 is an exploded perspective view of a tool adaptor similar to the tool adaptor of FIG. 21;

[0043] FIG. 26 is an exploded perspective view of a tool assembly including a tool adaptor for use with a reciprocating saw and a scraper tool;

[0044] FIG. 27 is an exploded perspective view of the scraper tool of FIG. 26;

[0045] FIG. 28 is an exploded perspective view of another embodiment of a scraper tool of the tool assembly of FIG. 26;

[0046] FIG. 29 is a perspective view of the scraper tool of FIG. 28 and a tool adaptor in an assembled configuration; and

[0047] FIG. 30 is a perspective view of a tool adaptor for use with a reciprocating saw and one embodiment of a keyless chuck tool.

DETAILED DESCRIPTION OF THE DRAWINGS

[0048] While the concepts of the present disclosure are susceptible to various modifications and alternative forms, specific exemplary embodiments thereof have been shown by way of example in the drawings and will herein be described in detail. It should be understood, however, that there is no intent to limit the concepts of the present disclosure to the particular forms disclosed, but on the contrary, the intention is to cover all modifications, equivalents, and alternatives falling within the spirit and scope of the disclosure.

[0049] Referring to FIGS. 1-4, a tool adaptor 10 has a first end 12, a second end 14, and an elongated portion 16 defined between the first end 12 and the second end 14. The first end 12 is configured to be received by a reciprocating saw. For example, the first end 12 may be similar to a mounting end of a typical reciprocating saw blade commonly used with the reciprocating saw. The illustrative first end 12 includes a protrusion 18 that extends longitudinally relative to the elongated portion 12 and an aperture 20 configured to receive a guide pin of the reciprocating saw when the adaptor is coupled to the reciprocating saw as discussed below in regard to FIGS. 7 and 8. However, in other embodiments, the first end 12 may have other configurations and/or elements based on the type, model, and other criteria related to the reciprocating saw to which the adaptor 10 is to be coupled.

[0050] The second end 14 of the adaptor 10 is configured to couple with a tool such as a scraper, file, saw, brush, cultivator, or any other type of tool generally operated with a reciprocating motion and configured to be coupled with the second end 14. The illustrative second end 14 has a substantially elliptical cross-section as illustrated in FIG. 4. In one particular embodiment, the second end 16 has a substantially circular cross-section. However, in other embodiments, the second end 16 may have any other cross-sectional shape including, but not limited to, an ovate, square, round, triangular, diamond, polygonal, and any other geometrical or other shape allowing the adaptor to be coupled with the tool. The second end 14 of the adaptor 10 illustrated in FIG. 1 includes a securing surface 22 extending longitudinally relative to the elongated portion 12. The securing surface 22 is configured to be contacted by a securing device, such as a screw, bolt, or other type of securing device, of the tool to secure the tool to the adaptor 10.

[0051] In other embodiments, the second end 14 may include other elements, configurations, or devices for coupling the adaptor 10 with the tool. For example, in some alternative embodiments, the second end 14 may include a receiving aperture for receiving a portion of the tool and securing devices to secure the adaptor to the tool. In one particular alternative embodiment illustrated in FIG. 5, the second end 14 includes a detent 24 located on the surface 22. The detent 24 may be biased, such as by a spring or other biasing member, to an outward position. In such embodiments, tools for use with the adaptor 10 include an aperture or indentation for receiving a portion of the detent 24 when the adaptor 10 is coupled with the tool. The detent 24 allows the tool to be quickly coupled and decoupled with the adaptor 10. To couple the tool to the adaptor 10, the second end 14 of the adaptor 10 is positioned into a coupler of the tool. The detent 24 is pushed or biased inward until the detent 24 and the aperture of the tool cooperate to couple the tool with the adaptor.

[0052] Alternatively, in another embodiment illustrated in FIG. 6, the adaptor 10 includes a protrusion 26 located on the surface 22. The protrusion 26 extends from the surface 22 at a substantially right angle, but in other embodiments, may extend at any other angle from the surface 22. Tools for use with the adaptor 10 illustrated in FIG. 6 include a slot configured to receive the protrusion 26. To couple the tool to the adaptor 10, the second end 14 of the adaptor 10 is positioned into a coupler of the tool by aligning the protrusion 26 with the slot of the tool. Once the tool is coupled to the adaptor 10, the tool may be turned or rotated to lock or otherwise secure the tool to the adaptor 10. When the tool is rotated, the

protrusion cooperates with a locking slot of the tool to inhibit the decoupling of the tool from the adaptor 10 without the rotation of the tool. The tools for use with the adaptor 10 illustrated in FIGS. 5 and 6, may also include other securing devices, such as a screw, bolt, or the like, to secure the tool with the adaptor after the tool has been coupled to the adaptor as discussed above in regard to FIG. 1.

[0053] In use, the adaptor 10 is coupled with a reciprocating shaft 28 of a reciprocating saw 30 as illustrated in FIGS. 7 and 8. The adaptor 10 is coupled to the shaft 28 using a mounting method similar to the mounting method used to couple a reciprocating saw blade to the shaft 28. To do so, the first end 12 of adaptor 10 is coupled with a reciprocating saw blade receiver 32 of the shaft 28. The aperture 20 of the first end 12 receives a guide pin 34 of the receiver 32. To secure the first end of the adaptor 10 to the shaft 28, a clamp 36 is positioned over the first end 12 of the adaptor 20 and secured to the receiver 32. The clamp 36 includes an aperture 38 that is aligned with a threaded aperture 40 of the receiver 32 when the clamp 36 is so positioned. To secure the clamp 36 to the receiver 32, a securing device 42 such as a bolt, screw, or other type of securing device is screwed or otherwise mounted through the aperture 38 of the clamp 36 and into the aperture 40 of the receiver 32. The securing device 42 may be accessed through a window 46 of the saw 30. The clamp 36 may also include an aperture 38 for receiving a portion of the guide pin 32 when the clamp 36 is secured to the receiver 32. It should be understood, however, that the shaft 28, receiver 32, clamp 36 and securing device 42 are merely illustrative and that, in other embodiments, alternative configurations, devices, and methods may be used to couple the adaptor 10 to the reciprocating saw 30 depending on, for example, the make and model of the saw 30.

[0054] In some embodiments, the saw 30 may include a guard 48 as illustrated in FIG. 8. The guard 48 provides a stabilizing guide when the saw 30 is operated. When the adaptor 10 is coupled with the saw 30, the elongated portion 12 of the adaptor 10 traverses through the guard 48. Accordingly, the elongated portion 12 is configured to be able to be moved back and forth through the guard 48 when the saw 30 is used. The illustrative portion 12 has a substantially rectangular cross-section to allow the portion 12 to be reciprocated through the guard 48. However, the elongated portion 12 may have other cross-sectional shapes including, but not limited to, elliptical, triangular, diamond, polygonal, or any other shape or configuration allowing the portion 12 to be reciprocated through the guard 48. In some applications, the guard 48 may be removed from the saw 30. In such applications, the elongated portion 12 may have any geometrically shaped cross-section and may be of any size suitable for the saw 30.

[0055] In the illustrative embodiment, the first end 12, second end 14, and elongated portion 16 form a unitary construction. However, in other embodiments, one or both of the ends 12, 14 may be coupled or otherwise secured to the elongated portion 16 using, for example, securing devices such as screws, bolts, adhesives, and the like. The adaptor 10 may be made from any material being strong enough to be coupled with a tool and be reciprocated back and forth by the saw 30. Illustratively, the adaptor 10 is made from a metallic material. Additionally, the adaptor 10 may be of any size usable by the saw 30. Illustratively, the adaptor 10 has a length 15 of about four inches as illustrated in FIG. 1 and the elongated portion 16 has a width 13 of about 0.125 inches. However, the adaptor 10 may have any length and width that allows the adaptor 10

to be coupled with the saw 30 and to provide enough stability for a tool coupled to the adaptor during use of the saw 30.

[0056] Referring now to FIGS. 9-20, various embodiments of a tool 50 for use with the adaptor 10 and the saw 30 will be described. The tool 50 is configured to be coupled with the adaptor 10 to allow the tool 50 to be operated via the saw 30. Each tool 50 includes a coupler configured to couple with the adaptor 10. The tool 50 may also include a keyless chuck, support arm, bracket, and/or other structures and elements. Each tool 50 also includes a tool device such as, for example, a scrapping blade, a saw blade, a file, a cultivator, and/or other tool device. Accordingly, as used herein, the term “tool device” is intended to refer to any device capable of being used to perform a tool function such as, for example, cutting, sawing, filing, drilling, scrapping, cultivating, molding, sanding, smoothing, routing, rounding, trimming, or any other function generally associated with a tool. However, the various embodiments of the tool 50 so described are merely illustrative and it is contemplated that other types of tools having other elements, structures, configuration, and/or tool devices may be used. Additionally, although the tool 50 is generally illustrated and described as being a separate piece from the adaptor 10, it is contemplated that in alternative embodiments the tool 50 and the adaptor 10 may form a unitary construction, be secured together, or otherwise form a single adaptor tool for use with a reciprocating saw.

[0057] Referring now to FIGS. 9 and 8, in one embodiment, the tool 50 is embodied as a scrapper 52. The scrapper 52 includes a coupler 54 and a scrapper body 56. The coupler 54 is configured to couple with the second end 14 of the adaptor 10. In the illustrative embodiment, the coupler 54 includes an aperture (not shown) configured to receive the second end 14. For example, the aperture (not shown) may have an elliptical shape substantially similar to the cross-section of the second end 14. However, the aperture (not shown) of the coupler 54 may have any shape that is capable of receiving the second end 14. Alternatively, in embodiments in which the second end 14 includes a receiving aperture, the coupler 54 may include a corresponding protrusion configured to be received by the aperture of the second end 14. Regardless, the second end 14 of the adaptor 10 and the coupler 54 of the scrapper 52 are configured to be coupled together.

[0058] The coupler 54 also includes an threaded aperture 58 for receiving a securing device 60. Illustratively, the securing device 60 is a thumb screw. However, the securing device 60 may be any type of securing device capable of being received by the aperture 58 such as a set screw, bolt, or the like. The securing device 60 is used to secure the coupler 54 to the first end 14 of the adaptor 10. To do so, the securing device 60 is threaded into the aperture 58 until an end of the device 60 contacts the surface 22 of the first end 14 and applies adequate pressure to the surface 22 to secure the coupler 58 with the adaptor 10. To separate the scrapper 52 from the adaptor 10, the securing device 60 is unthreaded from the aperture 58. In other embodiments, the coupler 54 may include other devices and configurations for coupling the scrapper 52 (i.e. the tool 50) to the adaptor 10. For example, the coupler 54 may include an internal aperture configured to receive a detent 24 located on the first end 14 of the adaptor 10 as illustrated in FIG. 5. Alternatively, the coupler 54 may include one or more slots configured to receive a protrusion 26 located on the first end 14 as illustrated in FIG. 6.

[0059] The scrapper body 56 is attached to the coupler 54. The scrapper body 56 may be attached using any suitable

securing devices such as adhesives, a number of welds, screws, bolt and nuts, and the like. Alternatively, the scrapper body 56 and the coupler 54 may form a unitary construction. The scrapper body 56 includes a mount portion 62 configured to receive a scrapper blade 64. The blade 64 is substantially flat and has a substantially rectangular top profile. Additionally, the blade 64 includes at least one sharpened edge 76 and a number of apertures 72. The blade 64 may be coupled to the portion 62 via cooperation of threaded inserts 66 and bolts 68. To do so, the threaded inserts 66 are threaded into a number of threaded apertures 70 of the scrapper body 56. The threaded inserts 66 include internal threads for receiving the bolts 68. The blade 64 is positioned on the mount portion 62 so that the apertures 72 are aligned with the apertures 70 of the scrapper body 56 and so that one of the edges 76 is positioned outward. The bolts 68 are subsequently threaded through the apertures 72 of the blade 64 and into the threaded inserts 66 to secure the blade 64 to the scrapper body 56. Additionally, a set of washers 74 may be used. After repeated use, the edge 76 of the blade 64 being used may become dull. The blade 64 may be replaced with a new blade 64 or, if the blade 64 includes additional sharpened edges 76, the blade 64 may be removed from and re-coupled to the scrapper portion in a position in which a new sharpened edge 76 is positioned outward.

[0060] The coupler 54, scrapper body 56, and blade 64 may be made from any material having enough strength to withstand the operation of the scrapper 52 by the saw 30. Illustratively, the coupler 54, scrapper body 56, and blade 64 are made of a metallic material. In some embodiments, the blade 64 may have other configurations. For example, the edges 76 of the blade 64 may curve downwardly. Additionally, the blade 64 may be coupled to the scrapper body 56 using alternative methods and devices. For example, the scrapper body 56 may include threaded posts that are received through the apertures 72 of the blade 64 when the blade is mounted on the mount portion 62. A set of wing nuts or the like may then be used to secure the blade 64 to the scrapper body 56. Alternatively, the apertures 70 of the scrapper body may be threaded.

[0061] Referring now to FIGS. 11 and 12, in another embodiment, the tool 50 is embodied as a saw 80. The saw 80 includes a coupler 82 and a bracket 84. The coupler 82 is substantially similar to the coupler 54 illustrated and described in regard to FIGS. 9 and 10. Accordingly, the description of the features of the coupler 54 are applicable to the coupler 82. For example, the coupler 82 includes a securing device 86 that is substantially similar to the securing device 60 and is usable to secure the saw 80 to the adaptor 10 as described above in regard to FIGS. 9 and 10.

[0062] The bracket 84 is attached to the coupler 82. The bracket 84 and coupler 82 may be attached using any suitable securing device such as glue, welds, screws, bolt and nuts, and the like. For example, the illustrative coupler 82 includes an aperture 88 configured to receive an end 90 of the bracket 84. The aperture 88 is shaped similar to the cross-section of the bracket. In the embodiment illustrated in FIGS. 11 and 12, the bracket 84 has a rectangular cross-section. However, in other embodiments, the bracket 84 may have any geometrical cross-section including, for example, elliptical, round, and polygonal cross-sections. Once the bracket 84 is received by the coupler 82, a pin 94 is inserted through a pin receiving aperture 96 of the coupler 82 and a pin receiving aperture 92

of the bracket **84** to secure the bracket **84** to the coupler **82**. In alternative embodiments, the bracket **84** and coupler **82** may form a unitary construction.

[0063] The bracket **84** includes a middle elongated portion **98** that extends at an angle from the coupler **82** to provide clearance for the saw **80** to cut or otherwise be operated on a substantially level plane apart from a plane defined by the saw **30**. The portion **98** may extend at any angle allowing the saw **80** to be operated by the saw **30**. In particular, the portion **98** may extend at any angle between about 0 degrees to about 90 degrees. In one particular embodiment, the portion **98** extends at about a 45 degree angle from a longitudinal axis defined by the coupler **82** and the adaptor **10**. However, in other embodiments, The bracket **84** includes a mount portion **100** to which a tool device is mounted. For example, a saw blade **102** may be mounted to the mount portion **100**. As illustrated in FIG. **11**, the bracket **84** may include apertures **104** vertically defined in the mount portion **100** for securing the saw blade **102** to the mount portion **100**.

[0064] To do so, bolts **106**, illustratively knob screws, are inserted through the apertures **104**. Nuts **110**, illustratively tee nuts, are threaded onto the portions of the bolts **106** that extend through the apertures **104** to a non-tightened position. The saw blade **102** includes a number of keyhole slots **108** having a circular portion **107** and an elongated portion **109**. The circular portions **107** of the slots **108** are configured to allow the slots **108** to slip over a head portion **111** of the nuts **110** while the nuts **110** are loosely coupled to the bolts **106**. The saw blade **102** may then be slid or otherwise moved to a forward position. In doing so, portions of elongated shafts **113** of the nuts **110** are positioned in the elongated portions **119** of the slots **108**. Once the saw blade **102** is so positioned, the bolts **106** and nuts **110** may be tightened to secure the saw blade **102** to the bracket **84**. Although the bolts **106** and nuts **110** are illustrated as knob screws and tee nuts, respectively, other types of bolts and nuts may be used. Additionally, the bolts **106** and nuts **110** may be embodied as any type of securing devices configured to cooperate to secure the saw blade **102** to the bracket **84**. Further, the saw blade **102** may be secured to the bracket **84** using other types of securing devices such as screws, clamps, ties, and the like.

[0065] In alternative embodiments, the bracket **84** may include a number of threaded posts to receive the saw blade **102** and configured to cooperate with a number of nuts to secure the blade **102** to the bracket. The saw blade **102** may be any type of saw blade including, but not limited to, a wood saw blade, a metal saw blade, or a combination saw blade. The saw blade **102** may be sharpened on one or more sides to facilitate sawing in both the left and right directions and/or to extend the use life of the saw blade **102**. Further, in other alternative embodiments, the saw blade **102** and the bracket **84** form a unitary construction.

[0066] In an additional embodiment, a grout saw **112** may be mounted to the mount portion **100** of the bracket **84**. For example, as illustrated in FIGS. **13** and **14**, the bracket **84** may include threaded apertures **114** horizontally defined in the mount portion **100** for securing the grout saw **112** to the mount portion **100**. To do so, securing devices **116**, such as screws, bolts, thumb screws or the like, are inserted through mounting apertures **118** and **120** of grout saw blades **122**, **124**, respectively, and threaded into the apertures **114**. The securing devices **116** may be embodied as any type of securing devices capable of securing the blades **122**, **124** to the mount portion **100**. Additionally, other methods and devices may be

used to secure the blades **112**, **124** to the mount portion **100** such as clamps, ties, wing nuts, and the like. Alternatively, the grout saw **112** and the bracket **112** may form a unitary construction. Additionally, other types of saw blades may be used, such as wood and/or metal blades, that are configured to be mounted to the mount portion **100**.

[0067] Referring now to FIGS. **15** and **16**, in a further embodiment, the tool **50** may be embodied as a brush **126**. The brush **126** includes a bracket **128** attached to a coupler **82**. The coupler **82** is similar to the coupler **82** described above in regard to FIGS. **11-14** and like illustration numbers are used. Additionally, the bracket **128** is attached to the coupler **82** in a manner similar to the bracket **84** described above in regard to FIGS. **11-14**. For example, an end **130** of the bracket **82** is received by the aperture **88** of the coupler **82**. The pin **94** is inserted through the aperture **96** of the coupler **82** and a pin receiving aperture **132** of the bracket **128** to secure the bracket **128** to the coupler **82**. However, other attachment methods and devices may be used. For example, the bracket **128** and coupler **82** may be attached via a number of welds, nuts and bolts, screws, clamps, adhesives, or the like. Alternatively, the bracket **128** and coupler **82** may form a unitary construction.

[0068] A brush head **134** is mounted to a mount portion **136** of the bracket **128**. The mount portion **136** includes a threaded aperture **138**. The brush head **134** includes a bolt **140** which is threaded into the aperture **138** to secure the brush head **134** to the bracket **128**. A washer **140** may also be used. In other embodiments, other methods and devices may be used to mount the brush head **134** to the bracket **128**. For example, the brush head **134** may be mounted to the bracket using nuts and bolts, screws, clamps, or other securing devices capable of securing the brush head **134** to the bracket **128**. Alternatively, the brush head **134** and the bracket **128** may form a unitary construction. The brush head **134** may be any type of brush including, but not limited to, a wire brush, a stiff bristle cleaning brush, or the like. Additionally, the brush head **134** may be formed from a solid brush head such as a sanding head or the like. The bracket **128** may be substantially straight as illustrated in FIGS. **15** and **16** or may extend from the coupler **82** at an angle of about 0 degrees to about 90 degrees similar to the bracket **84** illustrated and described above in regard to FIGS. **11-14**.

[0069] Referring now to FIGS. **17** and **18**, in a further embodiment, the tool **50** is a file **144**. The file **144** includes a coupler **146**, a keyless chuck **148**, and a file **150**. The coupler **146** is configured to couple with the second end **14** of the adaptor **10**. The coupler **146** is similar to the coupler **84** and the description of the coupler **84** above in regard to FIGS. **11-16** is applicable to coupler **146**. The illustrative coupler **146** has an aperture (not shown) on a first side **145**. The aperture (not shown) is configured to receive the second end **14** of the adaptor **10**. The coupler **146** also has a threaded aperture **152** for receiving a securing device **154**. Illustratively, the securing device **154** is a set screw, but other types of securing devices may be used such as thumb screws, bolts, and the like may be used. The securing device **154** is used to secure the coupler **146** to the first end **14** in a manner similar to the coupler **84** and securing device **154** described above in regard to FIGS. **11** and **12**. For example, the securing device **154** is threaded into the aperture **152** until an end of the device **86** contacts the surface **22** of the first end **14** of the adaptor **10** and applies adequate pressure to the surface **22** to secure the coupler **146** to the adaptor **10**. In alternative embodiments, other devices and configurations may be used to couple the

coupler **146** to the adaptor **10**. For example, the coupler **146** may be coupled to the adaptor **10** via adhesives, pressure fitting, clamps, or the like. Additionally, in some embodiments, the coupler **146** and the adaptor **10** may form a unitary construction.

[0070] A threaded post **156** extends from a side **158** opposite the side **145** of the coupler **146**. The keyless chuck **148** includes coupling devices (not shown) to allow the chuck **148** to be threaded onto the post **156**. Once the chuck **148** is coupled to the coupler **146**, the chuck **148** may be operated in a normal manner to cause a clamp **160** of the chuck **148** to open or close. While in the open position, a tool device **162** may be inserted into the clamp **160**. The chuck **148** may then be operated in a normal manner to close the clamp **160** and secure the tool device **162** to the chuck **148** and adaptor **10**. The tool device **162** may be any type of tool device having a mounting portion capable of being inserted into the clamp **160** and subsequently secured by the clamp **160**. The mounting portion of the tool device may have a round, square, polygonal, or other cross-sectional shape. In one particular embodiment, the tool device is a file **150** as illustrated in FIGS. **17** and **18**. In another embodiment, the tool device is a cultivator **164** as illustrated in FIGS. **19** and **20**. However, it is contemplated that any tool or tool device may be coupled with the keyless chuck **148** including, but not limited to, a file, a cultivator, a saw, a scrapper, a brush, a drill bit, a router bit, or any other tool or tool device having a portion capable of being coupled with the clamp **160** of the keyless chuck **148**.

[0071] In use, the adaptor **10** is coupled with the saw **30** as described above in regard to FIGS. **7** and **8**. The coupler **146** is coupled with the adaptor **10** and the keyless chuck **148** is threaded or otherwise coupled with the coupler **146**. The tool device **162** is subsequently inserted into the clamp **160** of the chuck **148** and the chuck **148** is operated to cause the clamp **160** to close and couple the device **162** to chuck **148** and adaptor **10**. Once the device **162** is secured to the adaptor **10**, the saw **30** may be operated to cause the tool device **162** to be reciprocated in a back and forth motion as described above in regard to FIGS. **7** and **8**.

[0072] The tool **50** may be made from any suitable material that is capable of being reciprocated back and forth during operation of the saw **30**. For example, the couplers **54**, **82**, **146**, scrapper body **56**, and brackets **84**, **128** may be made from a metallic or plastic material.

[0073] Referring now to FIGS. **21-24**, in another embodiment, an adaptor **200** includes a replaceable adaptor member or tang **204** and a tool adaptor member **202**. The replaceable tang **204** includes opposing ends **206** and **208**, and an elongated portion **210** defined between the opposing ends **206** and **208**. Similar to the first end **12** of the tool adaptor **10** described above and illustrated in FIGS. **1-4**, the opposing first and second ends **206**, **208** of the adaptor **200** are configured to be received by a reciprocating saw. For example, the opposing first and second ends **206**, **208** may be similar to a mounting end of a typical reciprocating saw blade commonly used with the reciprocating saw. It will be appreciated that the opposing ends **206**, **208** may also be configured for use with other suitable non-reciprocating tools. The illustrative first opposing end **206** includes a protrusion **212** that extends longitudinally relative to the elongated portion **210** and an aperture **214** configured to receive a guide pin of the reciprocating saw when the adaptor is coupled to the reciprocating saw. Similarly, the illustrative opposing second end **208** includes a protrusion **216** that extends longitudinally relative to the elon-

gated portion **210** and an aperture **218** configured to receive a guide pin of the reciprocating saw when the adaptor is coupled to the reciprocating saw. As such, it should be appreciated that the configuration of the first and second opposing ends may but need not be substantially identical and interchangeable and that either of the first and second opposing ends **206**, **208** may be coupled with a reciprocating saw receiver. As such, in other embodiments, the first and second ends **206**, **208** may have other configurations and/or elements based on the type, model, and other criteria related to the reciprocating saw, or other suitable tool, to which the adaptor **200** is to be coupled. It will further be appreciated that the opposing ends **206**, **208** may be identical in shape, but mirror images in orientation.

[0074] The replaceable tang **204** is configured to be coupled with the tool adaptor **202**. To do so, the tool adaptor **202** includes a recessed area **220** configured to receive a portion of the tang **204**. The tool adaptor **202** includes a guide pin **222** extending outwardly from the recessed area **220**. The aperture **214**, **218** of the tang **204** are configured to receive the guide pin **222** while the respective end **206**, **208** of the tang **204** is coupled to the adaptor **202**. That is, the replaceable tang **204** may be coupled to the adaptor with the first end **206** extending outwardly from the adaptor **202** or with the second end **208** extending outwardly from the adaptor **202**. When the tang **204** is coupled to the adaptor **202** such that the first end **206** extends outwardly from the adaptor **202**, the guide pin **222** is received by the aperture **218** of the second end **208**. Conversely, when the tang **204** is coupled to the adaptor **202** such that the second end **208** extends outwardly from the adaptor **202**, the guide pin **222** is received by the aperture **214** of the first end **206**.

[0075] The replaceable tang **204** may be secured to the tool adaptor **202** via the use of screws **242**, **244**. To do so, the tool adaptor **202** includes threaded apertures **228**, **230**. The replaceable tang **204** includes apertures **232**, **234**, which are aligned with the apertures **228**, **230** when the tang **204** is to be coupled to the tool adaptor **202**. Additionally, a clamp **236** may be used to secure the tang **204** to the tool adaptor **202**. The clamp **236** includes apertures **238**, **240**, which are aligned with apertures **232**, **234** and apertures **228**, **230** when the tang **204** is to be coupled to the tool adaptor. The screws **242**, **244** are used to couple and secure the clamp **236**, tang **204**, and tool adaptor **202** by inserting the screws **242**, **244** through the apertures **238**, **240** of the clamp **236**, through the apertures **232**, **234**, and threading the screws **242**, **244** into the apertures **228**, **230**. In some embodiments, the screws **242**, **244** may be quick release screws such as, for example, for example, thumb screws or the like.

[0076] The tool adaptor **202** includes a mounting end **246**, which is similar to the second end **14** of the adaptor **10** described above in regard to FIGS. **1-4**. For example, the mounting end **246** is configured to couple with a tool such as a scraper, file, saw, brush, cultivator, or any other type of tool generally operated with a reciprocating motion and configured to be coupled with the mounting end **246**. The illustrative mounting end **246** has a substantially elliptical cross-section as illustrated in FIG. **24**. In one particular embodiment, the mounting end **246** has a substantially circular cross-section. However, in other embodiments, the mounting end **246** may have any other cross-sectional shape including, but not limited to, an oval, square, round, triangular, diamond, polygonal, and any other geometrical or other shape allowing the adaptor to be coupled with the tool. The mounting end **246** of

the tool adaptor **202** illustrated in FIGS. **21-24** includes a securing surface **248**. The securing surface **248** is configured to be contacted by a coupling or securing device, such as a screw, bolt, or other type of securing device, of the tool to secure the tool to the adaptor **200** (i.e., to the tool adaptor **202**). In other embodiments, the mounting end **246** may include other elements, configurations, or devices for coupling or securing together the tool adaptor **202** and the tool. For example, in some embodiments, the mounting end **246** may include a receiving aperture for receiving a portion of the tool and securing devices to secure or couple together the adaptor and the tool, a biased detent, a protrusion or guide pin, or other securing or coupling device as discussed above in regard to FIGS. **5** and **6**.

[0077] In use, the replaceable tang **204** is coupled together with the tool adaptor **202** via the clamp **236** and/or screws **242**, **244**. The tang **204** may be coupled together with the tool adaptor **202** in any orientation. That is, the tang may be coupled together with the tool adaptor **202** with first opposing end **206** or second opposing end **208** extending from the tool adaptor **202**. The opposing end **206**, **208** extending from the tool adaptor **202** may then be coupled together with a reciprocating shaft of a reciprocating saw, or other suitable tool, in a manner similar to the tool adaptor **10** illustrated in and described above in regard to FIGS. **7** and **8**. In this way, the adaptor **200** is coupled with a reciprocating saw. A tool, such as a scraper, file, saw, brush, cultivator, or other tool, may then be coupled with the mounting end **246** of the tool adaptor **202**. During use of the reciprocating saw and adaptor **200**, the tang **204** may become damaged or break due to stress, operator error, wear-and-tear or the like. If the tang **204** does break during use, the adaptor **200** may be decoupled from the reciprocating saw and the tang **204** may be decoupled from the tool adaptor **202**. The tang **204** may then be reversed and remounted to the tool adaptor such that the opposite end **206**, **208** is extending from the tool adaptor **202**. The adaptor **200** may then be recoupled together with the reciprocating saw. In the event that the opposing ends **206**, **208** are substantially similar, the life of the tang is extended. In the event that the opposing ends **206**, **208** are of different size, shape or configuration, one opposing end may be used with one tool and the other opposing end with a different tool.

[0078] Referring now to FIG. **25**, in some embodiments, the mounting end **246** of the tool adaptor **202** may be configured to be coupled to a keyless chuck **252**. In such embodiments, the mounting end **246** may include a threaded aperture **250**. A threaded stud **254** may be threaded into the aperture **250** such that a portion of the threaded stud **254** extends from the mounting end **246**. The keyless chuck **252** may then be threaded onto the extending portion of the threaded stud **254** in a manner similar to the keyless chuck **148** described above in regard to and illustrated in FIGS. **17** and **18**. For example, the keyless chuck **252** includes a clamp **256** for securing a tool device to the keyless check **252** and adaptor **200**. The keyless chuck **252** may then be operated in a normal manner to close the clamp **256** and secure the tool device to the chuck **252**. The tool device may be any type of tool device having a mounting portion capable of being inserted into the clamp **256** and subsequently secured by the clamp **256**. The mounting portion of the tool device may have a round, square, polygonal, or other cross-sectional shape. In one particular embodiment, the tool device is a file similar to file **150** illustrated in FIGS. **17** and **18**. In another embodiment, the tool device is a cultivator similar to the cultivator **164** as illustrated in FIGS. **19**

and **20**. However, it is contemplated that any tool or tool device may be coupled with the keyless chuck **256** including, but not limited to, a file, a cultivator, a saw, a scrapper, a brush, a drill bit, a router bit, or any other tool or tool device having a portion capable of being coupled with the clamp **256** of the keyless chuck **252**.

[0079] Referring now to FIGS. **26** and **27**, in some embodiments, the mounting end **246** of the tool adaptor **202** may be configured to be coupled to a scraper tool **300**. For example, in the illustrative embodiment, the mounting end **246** includes a substantially cylindrical head or protrusion **280** and a shoulder or rim **282** defined at the base of the cylindrical head **280**. As illustrated in FIG. **26**, the rim **282** has an outer diameter greater than the outer diameter of the cylindrical head **280**. The cylindrical head **280** includes a passageway **284** defined therethrough. The passageway **284** is shaped and sized to receive a quick-release pin **286** to thereby secure the tool adaptor **202** to the scraper tool **300** as discussed in more detail below.

[0080] The scraper tool **300** includes an adaptor body **302** and a scraper blade receiver **304**. The adaptor body **302** includes an aperture **306**, which is sized to receive the cylindrical head **280** of the mounting end **246** of the tool adaptor **202**. In one particular embodiment, the aperture **306** is sized so as to have a diameter slightly greater than the outer diameter of the cylindrical head **280** but less than the outer diameter of the rim **282**. In such embodiments, the rim **282** contacts or abuts an outer side of the adaptor body **302** when then cylindrical head **280** is received in the aperture **306**. The adaptor body **302** also includes a passageway **308** having an opening **310** defined in an upper surface **312** of the adaptor body **302**. The passageway **308** extends through a portion of the adaptor body **302** and is in communication with the aperture **306**. Similar to the passageway **284** of the tool adaptor **202**, the passageway **308** is shaped and sized to receive the quick-release pin **286** to thereby secure the adaptor body **302** to the tool adaptor **202**. That is, when the cylindrical head **280** of the tool adaptor **202** is received in the aperture **306** of the adaptor body **302** of the scraper tool **300**, the head **280** and adaptor **202** may be positioned such that the passageways **284**, **308** are in registry with each other. When so positioned, the quick-release pin **286** may be inserted into the passageways **284**, **308** to secure the scraper tool **300** to the tool adaptor **202**.

[0081] The scraper blade receiver **304** is configured to receive a scraper blade **314**. The scraper blade **314** may be embodied as any type of scraper blade capable of being secured to the scraper blade receiver **304** in the manner discussed below. For example, the scraper blade **314** may be substantially planar and include one or two sharpened ends as is illustrated in FIGS. **26** and **27**. Alternatively, the scraper blade **314** may include a curved, sharpened end in some embodiments. The scraper blade receiver **304** includes a base **316** and a platform **318** extending outwardly from the base **316**. The platform **318** includes a substantially planar surface **322** configured to receive the scraper blade **314**. In the illustrative embodiment, the platform **318** includes a pair of threaded apertures **320** defined therein and configured to receive corresponding screws or other securing devices **324** (see FIG. **27**) to secure the scraper blade **314** to the scraper blade receiver **304**.

[0082] The adaptor body **302** is coupled to the scraper blade receiver **304** via a pair of biasing members **330**, **332**. The biasing members **330**, **332** are positioned between the adaptor

body 302 and the scraper blade receiver 304 and are configured to bias the scraper blade receiver 304 away from the adaptor body 302 (and the adaptor tool 202). In the illustrative embodiment, the biasing members 330, 332 are embodied as a pair of springs 334, 336 and corresponding bars 338, 340. However, in other embodiments, the biasing members 330, 332 may be embodied as other devices capable of biasing the scraper blade receiver away from the adaptor body 302 in the manner described herein.

[0083] Each of the bars 338, 340 includes a threaded end 342, 344, which is received in corresponding threaded apertures 346, 348 defined in the base 316 of the scraper blade receiver 304. The bars 338, 340 extend through corresponding inner passageways 350, 352 of the springs 334, 336 and inner passageways 354, 356 of the adaptor body 302. Additionally, each of the bars 338, 340 includes an opposite end 358, 360 extending out the passageways 354, 356 on the rear side 362 of the adaptor body 302. A locking cap 364, 366 is secured to the opposite end 358, 360 of each bar 338, 340 to secure the adaptor body 302.

[0084] During use, the scraper blade receiver 304 may be pushed toward the adaptor body 302 via compression of the springs 334, 336. As such, when the scraper blade 314 contacts a resistant structure, such as a nail head, the scraper blade receiver 304 is moved toward the adaptor body 302 and the springs 334, 336 are compressed. Additionally, the bars 338, 340 are moved through the passageways 354, 356 of the adaptor body 302 and extend from the rear side 362.

[0085] Referring now to FIGS. 28 and 29, in some embodiments, the scraper tool 300 may include a scraper blade receiver 400 and a cylindrical adaptor body 402. The cylindrical adaptor body 402 includes an internal passageway 404 having an opening 406 defined at an end 408 of the adaptor body 402 and sized to receive the cylindrical head 280 of the mounting end 246 of the tool adaptor 202. In one particular embodiment, the opening 406 is sized so as to have a diameter slightly greater than the outer diameter of the cylindrical head 280 but less than the outer diameter of the rim 282. In such embodiments, the rim 282 contacts or abuts the end 408 of the adaptor body 402 when the cylindrical head 280 is received in the opening 406 and passageway 404. The cylindrical adaptor body 402 also includes a pair of elongated slots 410, 412 defined opposite each other. The elongated slots 410, 412 extend longitudinally in the adaptor body 402.

[0086] The scraper blade receiver 400 is configured to receive a scraper blade 416. The scraper blade 416 may be embodied as any type of scraper blade capable of being secured to the scraper blade receiver 400 in the manner discussed below. For example, the scraper blade 416 may be substantially planar and include one or two sharpened ends as is illustrated in FIGS. 28 and 9. Alternatively, the scraper blade 416 may include a curved, sharpened end in some embodiments. The scraper blade receiver 400 includes a base 420 and a platform 422 extending outwardly from the base 400. The platform 422 includes a substantially planar surface 424 configured to receive the scraper blade 416. In the illustrative embodiment, the platform 424 includes a pair of threaded apertures 426 defined therein and configured to receive corresponding screws or other securing devices 428 to secure the scraper blade 416 to the scraper blade receiver 400.

[0087] The base 420 of the scraper blade receiver 400 includes a passageway 430 having an opening 432 defined on a rear side 434 of the base 420. The passageway 430 and

opening 432 are sized to receive the adaptor body 402 and mounting end 246 of the tool adaptor 202. The base 420 also includes a pair of elongated slots 450, 452 defined on corresponding sides 454, 456 of the base 420. The adaptor body 402 and the scraper blade receiver 400 may be positioned such that the elongated slots 410, 412 of the adaptor body 402 and the elongated slots 450, 452 of the base 420 are parallel and fully or partially in registry with each other when the adaptor body 402 is received in the passageway 430. As such, the scraper blade receiver 400 may be secured to the tool adaptor 202 via a quick-release pin 460 inserted through the elongated slots 410, 412, 450, 452 and into the passageway 284 of the head 280 of the tool adaptor 202.

[0088] In some embodiments, the scraper tool 300 may also include a biasing member 470 received in the passageway 430 of the base 420 of the scraper blade receiver 400. The biasing member 470 may be configured to bias the scraper blade receiver 400 away from the tool adaptor 202 (and the adaptor body 402 in some embodiments). In one particular embodiment, the biasing member 470 is embodied as a spring, but may be embodied as other types of biasing members in other embodiments.

[0089] Referring now to FIG. 30, in some embodiments, the mounting end 246 of the tool adaptor 202 may be configured to be coupled to a keyless chuck tool 500. The keyless chuck tool 500 includes a keyless chuck 502 and a collar base 504 coupled to the keyless chuck 502. The collar base 504 includes a passageway 506 defined in an end 508 opposite the keyless chuck 502. The passageway 506 is sized to receive the cylindrical head 280 of the mounting end 246 of the tool adaptor 202. In one particular embodiment, the passageway 506 is sized so as to have a diameter slightly greater than the outer diameter of the cylindrical head 280 but less than the outer diameter of the rim 282. In such embodiments, the rim 282 contacts or abuts the end 508 of the collar base 504 when the cylindrical head 280 is received in the passageway 506.

[0090] The collar base 504 also includes a passageway 510 lateral to and in communication with the passageway 506. The passageway 510 is sized to receive a quick-release pin 512 to secure the keyless chuck tool 500 to the adaptor tool 202. To do so, head 280 of the mounting end 246 of the tool adaptor 202 is inserted into the passageway 506 of the collar base 504 of the keyless chuck tool 500. The keyless chuck tool 500 and the tool adaptor 202 are oriented such that the passageway 510 of the collar base 504 of the keyless chuck tool 500 is in registry with the passageway 284 defined in the head 280 of the mounting end 246 of the tool adaptor 202. The quick-release pin 512 may be subsequently inserted into the passageways 284, 510 to secure the keyless chuck tool 500 to the tool adaptor 202.

[0091] While the disclosure has been illustrated and described in detail in the drawings and foregoing description, such an illustration and description is to be considered as exemplary and not restrictive in character, it being understood that only illustrative embodiments have been shown and described and that all changes and modifications that come within the spirit of the disclosure are desired to be protected.

[0092] There are a plurality of advantages of the present disclosure arising from the various features of the tool adaptor and/or tool described herein. It will be noted that alternative embodiments of the tool adaptor and/or tool of the present disclosure may not include all of the features described yet still benefit from at least some of the advantages of such features. Those of ordinary skill in the art may readily devise

their own implementations of the tool adaptor and/or tool that incorporate one or more of the features of the present invention and fall within the spirit and scope of the present disclosure as defined by the appended claims.

1. A tool for use with a reciprocating saw, the tool comprising:

- a first adaptor member having opposing ends, each opposing end configured to couple with the reciprocating saw;
- a second adaptor member configured to couple with the first adaptor member and having a first end; and
- a scrapper tool including (i) an adaptor body configured to couple with the first end of the second adaptor member, (ii) a scrapper blade receiver configured to receive a scrapper blade, and (iii) at least one biasing member positioned between the adaptor body and the scrapper blade receiver, the at least one biasing member biasing the scrapper blade receiver away from the adaptor body.

2. The tool of claim 1, wherein the adaptor body of the scrapper tool includes an aperture defined therein sized to receive the first end of the second adaptor member.

3. The tool of claim 2, wherein:

- the second adaptor member includes a first passageway defined through the first end, and
- the adaptor body of the scrapper tool includes a second passageway extending from a top surface of the adaptor body to the aperture.

4. The tool of claim 3, wherein the first passageway and the second passageway are in registry with each other when the first end of the second adaptor member is received in the aperture of the adaptor body of the scrapper tool.

5. The tool of claim 1, wherein the scrapper tool includes a first biasing member and a second biasing member, each of the first and second biasing members being positioned between the adaptor body and the scrapper blade receiver, the first and second biasing members biasing the scrapper blade receiver away from the adaptor body.

6. The tool of claim 5, wherein the first and second biasing members comprise first and second springs.

7. The tool of claim 6, wherein the scrapper tool comprises a first bar and a second bar, the first bar being received in a first internal passageway of the first spring and the second bar being received in a second internal passageway of the second spring, each of the first and second bars being coupled to the adaptor body and scrapper blade receiver.

8. The tool of claim 7, wherein each of the first and second bars includes a first threaded end received in a corresponding threaded aperture of the scrapper blade receiver and a second end received in a corresponding passageway defined in the adaptor body.

9. The tool of claim 1, wherein the first adaptor member includes an elongated portion defined between the opposing ends, the elongated portion being configured to be reciprocated through a guard of the reciprocating saw while the reciprocating saw is operated by a user.

10. A tool for use with a reciprocating saw, the tool comprising:

- a first adaptor member having opposing ends, each opposing end configured to couple with the reciprocating saw;
- a second adaptor member configured to couple with the first adaptor member and having a first end; and

a scrapper tool including (i) a cylindrical adaptor body having a first opening sized to receive the first end of the second adaptor member and (ii) a scrapper blade receiver configured to receive a scrapper blade, the scrapper blade receiver including an aperture defined therein, the cylindrical adaptor body and the first end of the second adaptor member being received in the aperture of the scrapper blade receiver.

11. The tool of claim 10, wherein the cylindrical adaptor body of the scrapper tool includes a plurality of first elongated slots defined therein.

12. The tool of claim 11, wherein the scrapper blade receiver includes a plurality of second elongated slots defined therein, the plurality of second elongated slots being substantially parallel to the plurality of first elongated slots when the cylindrical adaptor body is received in the aperture of the scrapper blade receiver.

13. The tool of claim 12, wherein the second adaptor member includes a passageway defined in the first end, the passageway being in registry with the plurality of first and second elongated slots when the first end of the second adaptor member is received in the aperture of the scrapper blade receiver.

14. The tool of claim 10, further comprising a biasing member received in the aperture of the scrapper blade receiver, the biasing member biasing the scrapper blade receiver away from the second adaptor member.

15. The tool of claim 14, wherein the biasing member comprises a spring.

16. A scrapper tool for use with a reciprocating saw, the scrapper tool comprising:

- an adaptor body having an aperture configured to receive an end of an adaptor couplable to the reciprocating saw;
- a scrapper blade receiver configured to receive a scrapper blade, and
- at least one biasing member positioned between the adaptor body and the scrapper blade receiver, the at least one biasing member biasing the scrapper blade receiver away from the adaptor body.

17. The scrapper tool of claim 16, wherein the at least one biasing member comprises a first biasing member and a second biasing member, each of the first and second biasing members being positioned between the adaptor body and the scrapper blade receiver, the first and second biasing members biasing the scrapper blade receiver away from the adaptor body.

18. The scrapper tool of claim 17, wherein the first and second biasing members comprise first and second springs.

19. The scrapper tool of claim 18, further comprising a first bar and a second bar, the first bar being received in a first internal passageway of the first spring and the second bar being received in a second internal passageway of the second spring, each of the first and second bars being coupled to the adaptor body and scrapper blade receiver.

20. The scrapper tool of claim 19, wherein each of the first and second bars includes a first threaded end received in a corresponding threaded aperture of the scrapper blade receiver and a second end received in a corresponding passageway defined in the adaptor body.

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