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(54) **SYSTEMS, DEVICES, AND/OR METHODS FOR MANAGING FIREARM ASSEMBLY**

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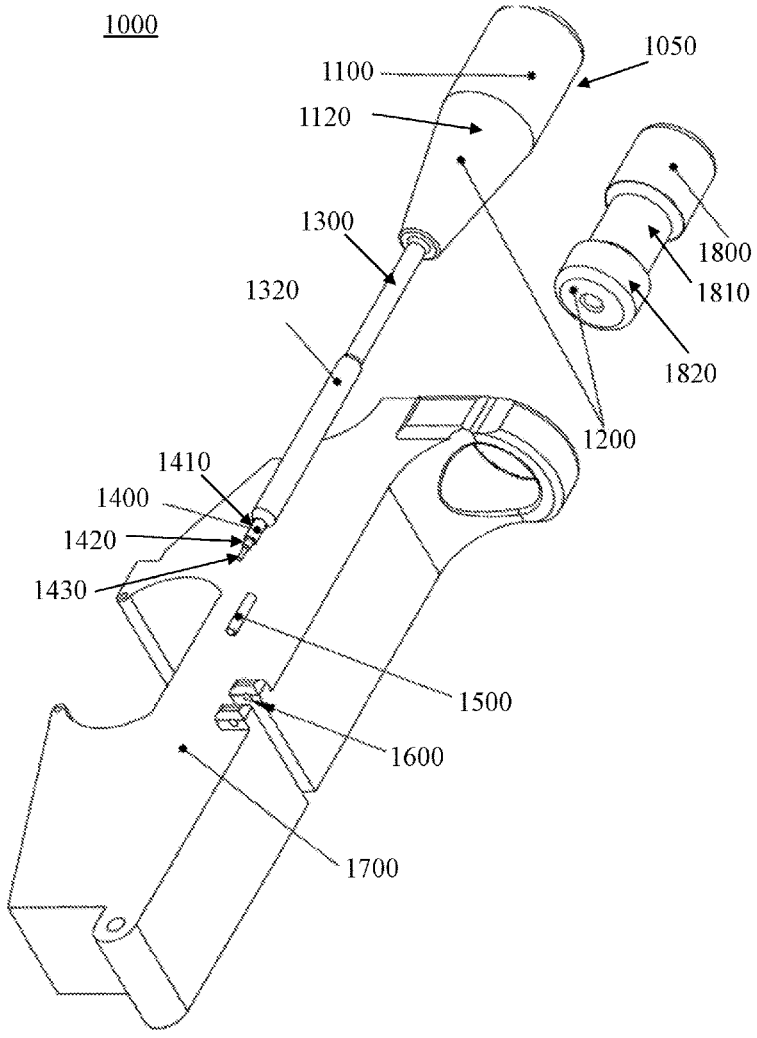
(57) **ABSTRACT**

Certain exemplary embodiments can provide a pin insertion tool. The pin insertion tool can comprise a replaceable handle, a tool shaft coupleable to the replaceable handle, a pin insertion tool holder directly coupleable to the tool shaft, and a spring pin guide. The spring pin guide can comprise a base, a central portion, the central portion directly coupled to the base, and a tip directly coupled to the central portion.



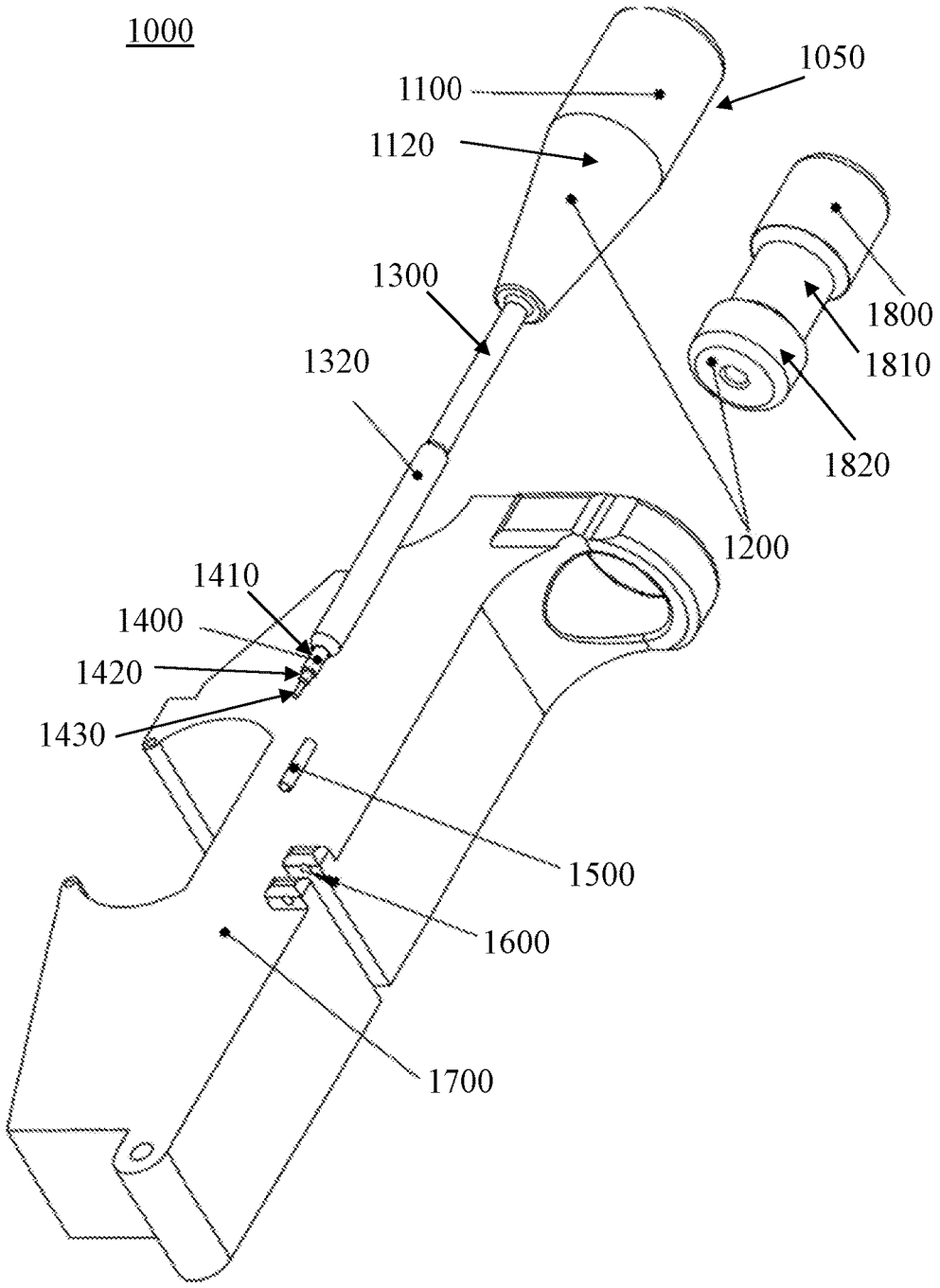

1000
1050
1100
1120
1300
1800
1320
1810
1820
1200
1410
1400
1420
1430
1500
1600
1700

FIG. 1

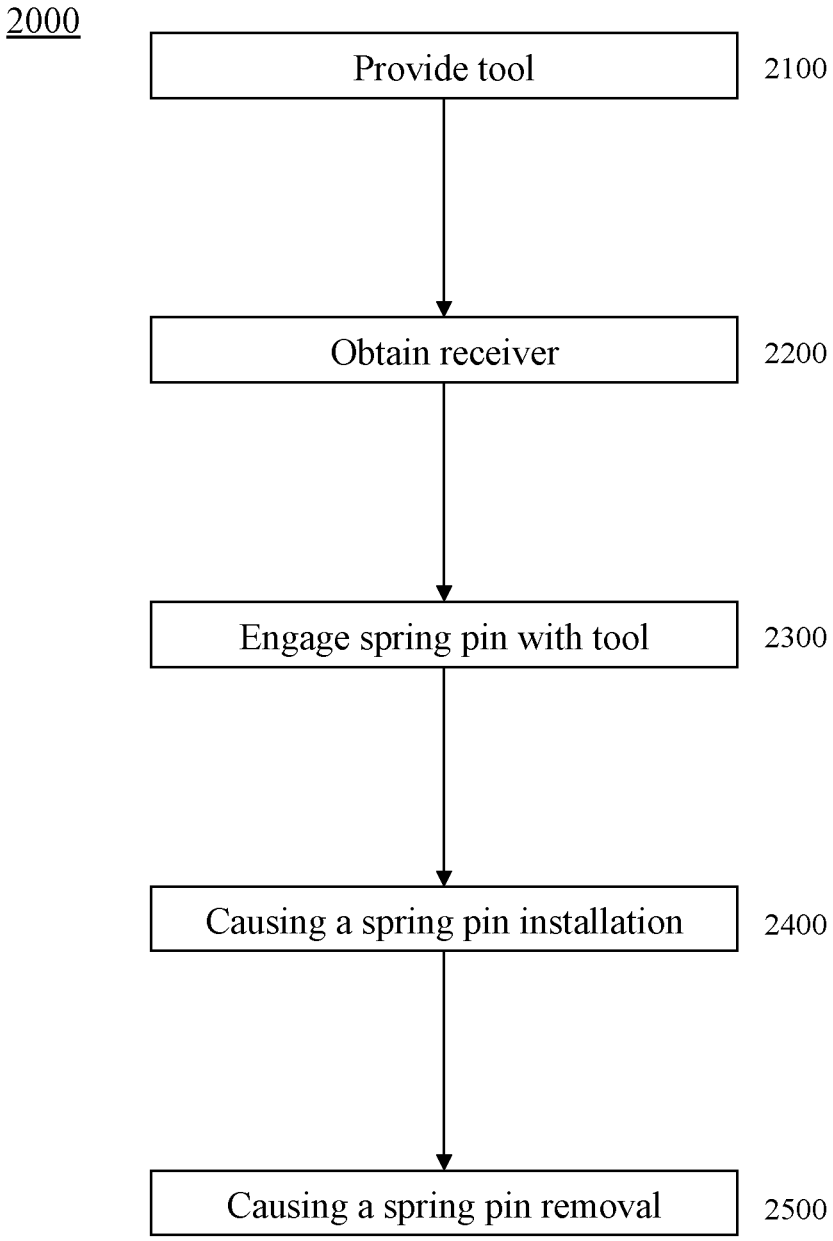

2000
Provide tool
2100
Obtain receiver
2200
Engage spring pin with tool
2300
Causing a spring pin installation
2400
Causing a spring pin removal
2500

FIG. 2

SYSTEMS, DEVICES, AND/OR METHODS FOR MANAGING FIREARM ASSEMBLY

CROSS-REFERENCES TO RELATED APPLICATIONS

[0001] This application claims priority to, and incorporates by reference herein in its entirety, pending U.S. Provisional Patent Application Ser. No. 62/391,664, filed May 9, 2016.

BRIEF DESCRIPTION OF THE DRAWINGS

[0002] A wide variety of potential practical and useful embodiments will be more readily understood through the following detailed description of certain exemplary embodiments, with reference to the accompanying exemplary drawings in which:

[0003] FIG. **1** is a perspective view of an exemplary embodiment of a system **1000**; and

[0004] FIG. **2** is a flowchart of an exemplary embodiment of a method **2000**.

DETAILED DESCRIPTION

[0005] Certain exemplary embodiments can provide a pin insertion tool. The pin insertion tool can comprise a replaceable handle, a tool shaft coupleable to the replaceable handle, a pin insertion tool holder directly coupleable to the tool shaft, and a spring pin guide. The spring pin guide can comprise a base, a central portion, the central portion directly coupled to the base, and a tip directly coupled to the central portion

[0006] Certain exemplary embodiments provide a tool, which was specifically designed, engineered and manufactured for precision installation of parts during firearm construction. Measurements, diameters, radii, angles, weights, geometric designs, binary construction materials and any other form (common or uncommon) of measurement of this device are based on this design. These forms of measurement have been used to develop a tool that utilizes a direct focused force to install coiled or rolled metal material into small dimensional ports designated for retention of said material for firearm operation. Dimensions allow for the tool to be struck with minimal force to achieve desired effect and seating depth of said material. Shaft design is to allow clearance of firearm while installation occurs without residual damage of the firearm.

[0007] The tool is also designed to use proprietary tool inserts for the installation of various size coiled or rolled metal material (e.g., spring/roll pins). Measurements, diameters, radii, angles, weights, geometric designs, binary construction materials and any other form (common or uncommon) of measurement of this device are based solely on this design of proprietary tool insert. The insert secures and stabilizes the coiled or rolled material (e.g., spring/roll pin) allowing for precision installation, reduced damage to firearm, reduced damage to material, and proper alignment prior to install.

[0008] Angles of exemplary embodiments are geometrically designed to concentrate the force of hammer blow directly forward to a predetermined point to allow for precision alignment and minimal concentrated effort of force. This design enhances the safety of the user, the ability to greatly reduce damage to said firearm and installation material.

[0009] The tool handle can be manufactured from a hardened polymer to allow for multiple blows of either metal or plastic construction hammers with minimal deformation. The handle has a length and a circumference to be easily held by an end user for extended duration with precision and less fatigue than certain other tools that might be utilized. The handle can comprise non-marring and/or anti-vibration material.

[0010] The construction of the tool itself lends to ease of use and replacement of parts on an individual basis if they become damaged. The tool insert, which can comprise a metal, can be individually replaced as needed. The tool body, which can comprise a metal, can be replaced if damaged or bent. The tool handle, which can comprise a polymer, can be replaced when damaged or worn beyond safe operation life.

[0011] The unique construction of this tool by way of weight, dimensions, materials, measurements, design purpose and construction uniquely identify it. Certain exemplary embodiments can be unique in appearance, form, and/or function.

[0012] A variety of tools can be utilized for mechanical installation of metal parts of a firearm. In particular, tools such as punches, wrenches, pins and hammers can be utilized. Often times persons working to assemble parts cannot locate a correct tool to complete the task and/or are inefficient because certain tools might not be available and/or difficult to locate. As well, component sizes can vary and a combination of different tools might be sought. For example, to assemble receivers with upper roll pin, a tool that installs the pin correctly without damaging parts is of value.

[0013] Without the correct tool the time to effectively install pins can be relatively long. Certain exemplary embodiments allow for installation of the spring pin with one application. Two tools were often used before the new tool was developed. The overall length of tools used before the new tool was manufactured was relatively short.

[0014] In an exemplary embodiment, a tool is described that allows installation with ease for roll/split pins. The tool configuration allows for clearance around areas on the receiver protruding out from each side. The design of the tool incorporates clearances with the receiver and installation tool for substantially zero interference when using the tool. The tool holder fits within the work area of a firearm receiver for ease of use. At the installation end of tool holder, there is a machined pin that fits inside diameter of the roll pin before collapsing. By using a hammer (e.g., a plastic and/or rubber hammer), pressure can be applied by stroking the handle of the tool holder. As the roll pin moves forward into a hole, the roll pin diameter can decrease in size as pin enters a close clearance aperture. As the outside diameter changes, the inside diameter decreases in size. After the pin is set in a correct position, the tool and holder can be removed from pin. The pin diameter can be sized such that removal is possible with two diameters with substantially zero interference.

[0015] FIG. **1** is a perspective view of an exemplary embodiment of a system **1000**, which comprises a pin insertion tool **1050**. Pin insertion tool **1050** can be utilized in installing spring pins in a receiver **1700** of a firearm. Pin insertion tool **1050** can comprise four portions, which can be separable. Pin insertion tool **1050** can comprise:

[0016] a replaceable handle **1200**;

[0017] a tool shaft **1300**, in the illustrated embodiment, tool shaft **1300** comprises a substantially cylindrical portion, tool shaft **1300** can be directly coupled to replaceable handle **1200**; and

[0018] a pin insertion tool holder **1320**, pin insertion tool holder **1320** can comprise a substantially cylindrical portion (as illustrated), pin insertion tool holder directly coupled to tool shaft **1300** (in other embodiments, tool shaft **1300** and pin insertion tool holder **1320** can be a single unitary component); and

[0019] a spring pin guide **1400**, which can comprise:

[0020] a base **1410**, which can be directly coupled to pin insertion tool holder **1320**, the base can be substantially cylindrical as illustrated;

[0021] a central portion **1420**, which can be directly coupled to base **1410**, central portion **1420** can be substantially cylindrical, central portion **1420** can have an outside diameter that is substantially similar to an inside diameter of a spring pin hole **1600** defined by receiver **1700** of a firearm; and

[0022] a tip **1430**, which can be directly coupled to central portion **1420**, tip **1430** can be substantially cylindrical, tip **1430** can have an outside diameter that is substantially similar to an inside diameter defined by a spring pin **1500**; spring pin **1500** can be constructed to be inserted into spring pin hole **1600**.

[0023] Two exemplary embodiments of replaceable handle **1200** are illustrated. In the embodiment of replaceable handle **1200** coupled to tool shaft **1300**, replaceable handle **1200** comprises a substantially cylindrical section **1100** and a tapered section **1120**. As illustrated, tapered section **1120** has a general shape of a frustum of a cone. In the embodiment of replaceable handle **1200** not coupled to tool shaft **1300**, replaceable handle **1200** comprises a cap section **1800**, a central section **1810**, and a base section **1820**. As illustrated, central section **1810** can have a smaller diameter than cap section **1800** and/or base section **1820**. A smaller diameter of central section **1310** can allow a user an improved grip on replaceable handle **1200**. Surfaces of replaceable handle **1200** can be beveled or rounded for comfort of the user. In certain exemplary embodiments, replaceable handle **1200** can be coupled to tool shaft **1300** via a threaded coupling. In other embodiments, a magnetic liner can be present in replaceable handle **1200**, which allows a magnetic coupling of replaceable handle **1200** to tool shaft **1300**.

[0024] System **1000** can comprise spring pin **1500** and receiver **1700** of the firearm. Receiver **1700** defines spring pin hole **1600**, which is constructed to receive spring pin **1500** as a part of assembly of the firearm for use.

[0025] In certain exemplary embodiments, at least one portion of pin insertion tool **1050** can be magnetic. For example, spring pin guide **1400** can be magnetically coupled to pin insertion tool holder **1320**. As another example, one or more of base **1410**, central portion **1420**, and/or tip **1430** of spring pin guide **1400** can be magnetic such that spring pin **1500** is held magnetically by pin insertion tool **1050** as spring pin **1500** is being installed in receiver **1700**.

[0026] An outside diameter of portions of pin insertion tool **1050** (e.g., base **1410**, central portion **1420**, and/or tip **1430** of spring pin guide **1400**) can facilitate its use in installing and/or removing spring pins.

[0027] FIG. **2** is a flowchart of an exemplary embodiment of a method **2000**. At activity **2100**, a pin insertion tool can be provided. The pin insertion tool can comprise:

[0028] a replaceable handle;

[0029] a tool shaft, which can comprise a substantially cylindrical portion, wherein the tool shaft can be directly coupled to the replaceable handle;

[0030] a pin insertion tool holder, which can comprise a substantially cylindrical portion, wherein the pin insertion tool holder can be directly coupled to the tool shaft; and/or

[0031] a spring pin guide, which can comprise:

[0032] a base, which can be directly coupled to the pin insertion tool holder, wherein the base can be substantially cylindrical;

[0033] a central portion, which can be directly coupled to the base, the central portion can be substantially cylindrical, wherein the central portion can have an outside diameter that is substantially similar to an inside diameter of a spring pin hole defined by a receiver of a firearm; and

[0034] a tip, which can be directly coupled to the central portion, the tip can be substantially cylindrical, wherein the tip can have an outside diameter that is substantially similar to an inside diameter defined by a spring pin, wherein the spring pin can be constructed to be inserted into the spring pin hole.

[0035] At activity **2200**, a receiver of a firearm can be obtained. At activity **2300**, a spring pin can be engaged with the pin insertion tool. At activity **2400**, certain exemplary embodiments can comprise causing the pin insertion tool to be used to insert the spring pin into the spring pin hole. At activity **2500**, certain exemplary embodiments can comprise causing the pin insertion tool to be used to remove the spring pin from the spring pin hole.

Definitions

[0036] When the following terms are used substantively herein, the accompanying definitions apply. These terms and definitions are presented without prejudice, and, consistent with the application, the right to redefine these terms during the prosecution of this application or any application claiming priority hereto is reserved. For the purpose of interpreting a claim of any patent that claims priority hereto, each definition (or redefined term if an original definition was amended during the prosecution of that patent), functions as a clear and unambiguous disavowal of the subject matter outside of that definition.

[0037] a—at least one.

[0038] activity—an action, act, step, and/or process or portion thereof

[0039] adapter—a device used to effect operative compatibility between different parts of one or more pieces of an apparatus or system.

[0040] and/or—either in conjunction with or in alternative to.

[0041] apparatus—an appliance or device for a particular purpose

[0042] associate—to join, connect together, and/or relate.

[0043] base—a supporting portion of something.

[0044] can—is capable of, in at least some embodiments.

[0045] cause—to produce an effect.

[0046] central—a portion of something that is between two other portions.

[0047] comprising—including but not limited to.

[0048] configure—to make suitable or fit for a specific use or situation.

[0049] connect—to join or fasten together.

[0050] constructed to—made to and/or designed to.

[0051] couple—to link in some fashion.

[0052] coupleable—capable of being joined, connected, and/or linked together.

[0053] create—to bring into being.

[0054] cylindrical—having a shape of a surface or solid bounded by two parallel planes and generated by a straight line moving parallel to the given planes and tracing a curve bounded by the planes and lying in a plane perpendicular or oblique to the given planes.

[0055] define—to establish the outline, form, or structure of

[0056] determine—to obtain, calculate, decide, deduce, and/or ascertain.

[0057] device—a machine, manufacture, and/or collection thereof.

[0058] diameter—a width of a circular or cylindrical object.

[0059] directly—substantially without an intervening space.

[0060] firearm—a small arms weapon, as a rifle or pistol, from which a projectile is fired by gunpowder.

[0061] handle—a part of a thing sized and/or shaped specifically to be grasped or held by a hand of a user.

[0062] hole—an aperture defined by something.

[0063] insert—to put or place in.

[0064] inside—of an internal surface.

[0065] install—to connect or set in position and prepare for use.

[0066] magnetic—comprising a material that produces a magnetic field. This magnetic field is invisible but is responsible for the most notable property of a magnet: a force that pulls on ferromagnetic materials, such as iron, and attracts or repels other magnets.

[0067] may—is allowed and/or permitted to, in at least some embodiments.

[0068] method—a process, procedure, and/or collection of related activities for accomplishing something.

[0069] outside—of an external surface.

[0070] pin insertion tool—a device constructed to engage with a spring pin and facilitate insertion of the spring pin into a spring pin hole.

[0071] pin insertion tool holder—a portion of a pin insertion tool that couples a tool shaft to a spring pin guide.

[0072] portion—a part of a whole.

[0073] plurality—the state of being plural and/or more than one.

[0074] predetermined—established in advance.

[0075] provide—to furnish, supply, give, and/or make available.

[0076] receive—to get, take, acquire, and/or obtain.

[0077] receiver—a part of a firearm which provides housing for a hammer, bolt or breechblock, and firing mechanism.

[0078] repeatedly—again and again; repetitively.

[0079] replaceable—capable of being substituted for something else in a substantially non-destructive manner.

[0080] select—to make a choice or selection from alternatives.

[0081] set—a related plurality.

[0082] spring pin—a mechanical fastener that secures the position of two or more parts of a machine and/or firearm relative to each other.

[0083] spring pin guide—a portion of a pin insertion tool that is constructed to engage directly with a spring pin.

[0084] store—to place, hold, and/or retain.

[0085] substantially—to a great extent or degree.

[0086] support—to bear the weight of, especially from below.

[0087] system—a collection of mechanisms, devices, machines, articles of manufacture, processes, data, and/or instructions, the collection designed to perform one or more specific functions.

[0088] tip—an end of a tool that is constructed to engage with a spring pin.

[0089] tool shaft—a portion of an implement coupling a handle of the implement to a working tip of the implement.

[0090] use—to employ for some purpose.

[0091] via—by way of and/or utilizing.

Note

[0092] Still other substantially and specifically practical and useful embodiments will become readily apparent to those skilled in this art from reading the above-recited and/or herein-included detailed description and/or drawings of certain exemplary embodiments. It should be understood that numerous variations, modifications, and additional embodiments are possible, and accordingly, all such variations, modifications, and embodiments are to be regarded as being within the scope of this application.

[0093] Thus, regardless of the content of any portion (e.g., title, field, background, summary, description, abstract, drawing figure, etc.) of this application, unless clearly specified to the contrary, such as via explicit definition, assertion, or argument, with respect to any claim, whether of this application and/or any claim of any application claiming priority hereto, and whether originally presented or otherwise:

[0094] there is no requirement for the inclusion of any particular described or illustrated characteristic, function, activity, or element, any particular sequence of activities, or any particular interrelationship of elements;

[0095] no characteristic, function, activity, or element is "essential";

[0096] any elements can be integrated, segregated, and/or duplicated;

[0097] any activity can be repeated, any activity can be performed by multiple entities, and/or any activity can be performed in multiple jurisdictions; and

[0098] any activity or element can be specifically excluded, the sequence of activities can vary, and/or the interrelationship of elements can vary.

[0099] Moreover, when any number or range is described herein, unless clearly stated otherwise, that number or range is approximate. When any range is described herein, unless

clearly stated otherwise, that range includes all values therein and all subranges therein. For example, if a range of 1 to 10 is described, that range includes all values therebetween, such as for example, 1.1, 2.5, 3.335, 5, 6.179, 8.9999, etc., and includes all subranges therebetween, such as for example, 1 to 3.65, 2.8 to 8.14, 1.93 to 9, etc.

[0100] When any claim element is followed by a drawing element number, that drawing element number is exemplary and non-limiting on claim scope. No claim of this application is intended to invoke paragraph six of 35 USC 112 unless the precise phrase "means for" is followed by a gerund.

[0101] Any information in any material (e.g., a United States patent, United States patent application, book, article, etc.) that has been incorporated by reference herein, is only incorporated by reference to the extent that no conflict exists between such information and the other statements and drawings set forth herein. In the event of such conflict, including a conflict that would render invalid any claim herein or seeking priority hereto, then any such conflicting information in such material is specifically not incorporated by reference herein.

[0102] Accordingly, every portion (e.g., title, field, background, summary, description, abstract, drawing figure, etc.) of this application, other than the claims themselves, is to be regarded as illustrative in nature, and not as restrictive, and the scope of subject matter protected by any patent that issues based on this application is defined only by the claims of that patent.

What is claimed is:

1. A system comprising:

a pin insertion tool, the pin insertion tool comprising:

a replaceable handle;

a tool shaft, the tool shaft comprising a substantially cylindrical portion, the tool shaft directly coupled to the replaceable handle;

a pin insertion tool holder, the pin insertion tool holder comprising a substantially cylindrical portion, the pin insertion tool holder directly coupled to the tool shaft; and

a spring pin guide, the spring pin guide comprising:

a base, the base directly coupled to the pin insertion tool holder, the base substantially cylindrical;

a central portion, the central portion directly coupled to the base, the central portion substantially cylindrical, wherein the central portion has an outside diameter that is substantially similar to an inside diameter of a spring pin hole defined by a receiver of a firearm; and

a tip, the tip directly coupled to the central portion, the tip substantially cylindrical, wherein the tip has an outside diameter that is substantially similar to an inside diameter defined by a spring pin, the spring pin constructed to be inserted into the spring pin hole.

2. The system of claim **1**, further comprising:

the spring pin.

3. The system of claim **1**, further comprising:

the receiver of the firearm, the receiver of the firearm defining a pin hole constructed to receive the spring pin.

4. The system of claim **1**, wherein:

at least one portion of the pin insertion tool is magnetic.

5. A method comprising a plurality of activities, comprising:

providing a pin insertion tool, the pin insertion tool comprising:

a replaceable handle;

a tool shaft, the tool shaft comprising a substantially cylindrical portion, the tool shaft directly coupled to the replaceable handle;

a pin insertion tool holder, the pin insertion tool holder comprising a substantially cylindrical portion, the pin insertion tool holder directly coupled to the tool shaft; and

a spring pin guide, the spring pin guide comprising:

a base, the base directly coupled to the pin insertion tool holder, the base substantially cylindrical;

a central portion, the central portion directly coupled to the base, the central portion substantially cylindrical, wherein the central portion has an outside diameter that is substantially similar to an inside diameter of a spring pin hole defined by a receiver of a firearm; and

a tip, the tip directly coupled to the central portion, the tip substantially cylindrical, wherein the tip has an outside diameter that is substantially similar to an inside diameter defined by a spring pin, the spring pin constructed to be inserted into the spring pin hole

6. The method of claim **5**, further comprising:

causing the pin insertion tool to be used to insert the spring pin into the spring pin hole.

7. The method of claim **5**, wherein:

causing the pin insertion tool to be used to remove the spring pin from the spring pin hole.

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