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(54) **MODULAR FIREARM SYSTEM WITH INTERCHANGEABLE GRIP AND SLIDE ASSEMBLIES AND AN IMPROVED FIRING PIN SAFETY FOR FIREARM**

(76) Inventors: **Adrian J. O. Thomele**, Eckernforde (DE); **Thomas U. Metzger**, Eckernforde (DE); **Ethan M. Lessard**, East Kingston, NH (US)

Correspondence Address:
SCOTT C. RAND, ESQ.
MCLANE, GRAF, RAULERSON & MIDDLETON, PA
900 ELM STREET, P.O. BOX 326
MANCHESTER, NH 03105-0326 (US)

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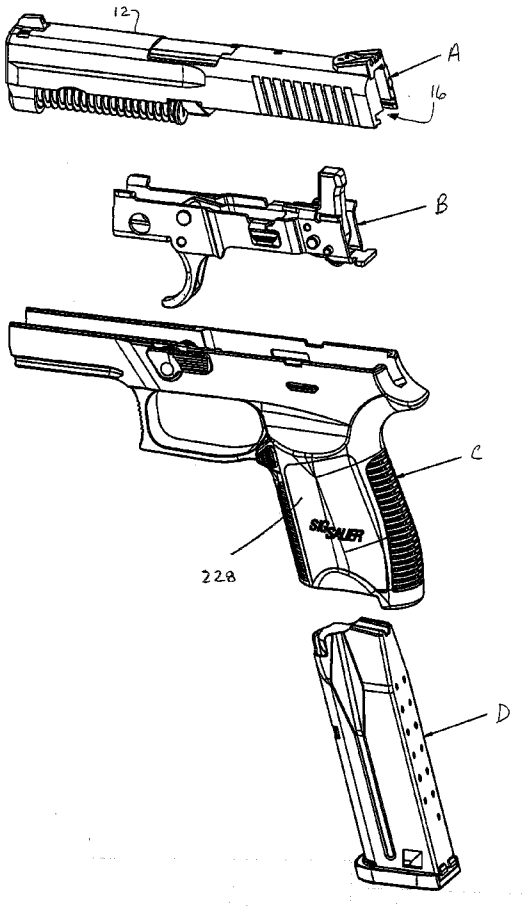
(52) **U.S. Cl.** **42/1.01**; 42/71.01; 42/14; 42/70.08; 42/111

(57) **ABSTRACT**

In one aspect, a firearm system allows multiple modular firearm configurations, thereby providing significant customizability of the firearm by the user. All of the components necessary to fire the weapon are carried on a common receiver assembly. Interchangeable slide assemblies and handgrip modules can be detachably connected to the common receiver to substitute one firearm size, handgrip circumference, and/or munitions caliber for another. For example, the handgrip module can be substituted so as to change the size of the firearm and/or the slide assembly can be changed for purposes of changing the caliber of the firearm. In another aspect, an improved firing pin safety, which is capable of use in a one-piece machined slide, and which is additionally capable of being manufactured as a stamped sheet metal part, is provided.



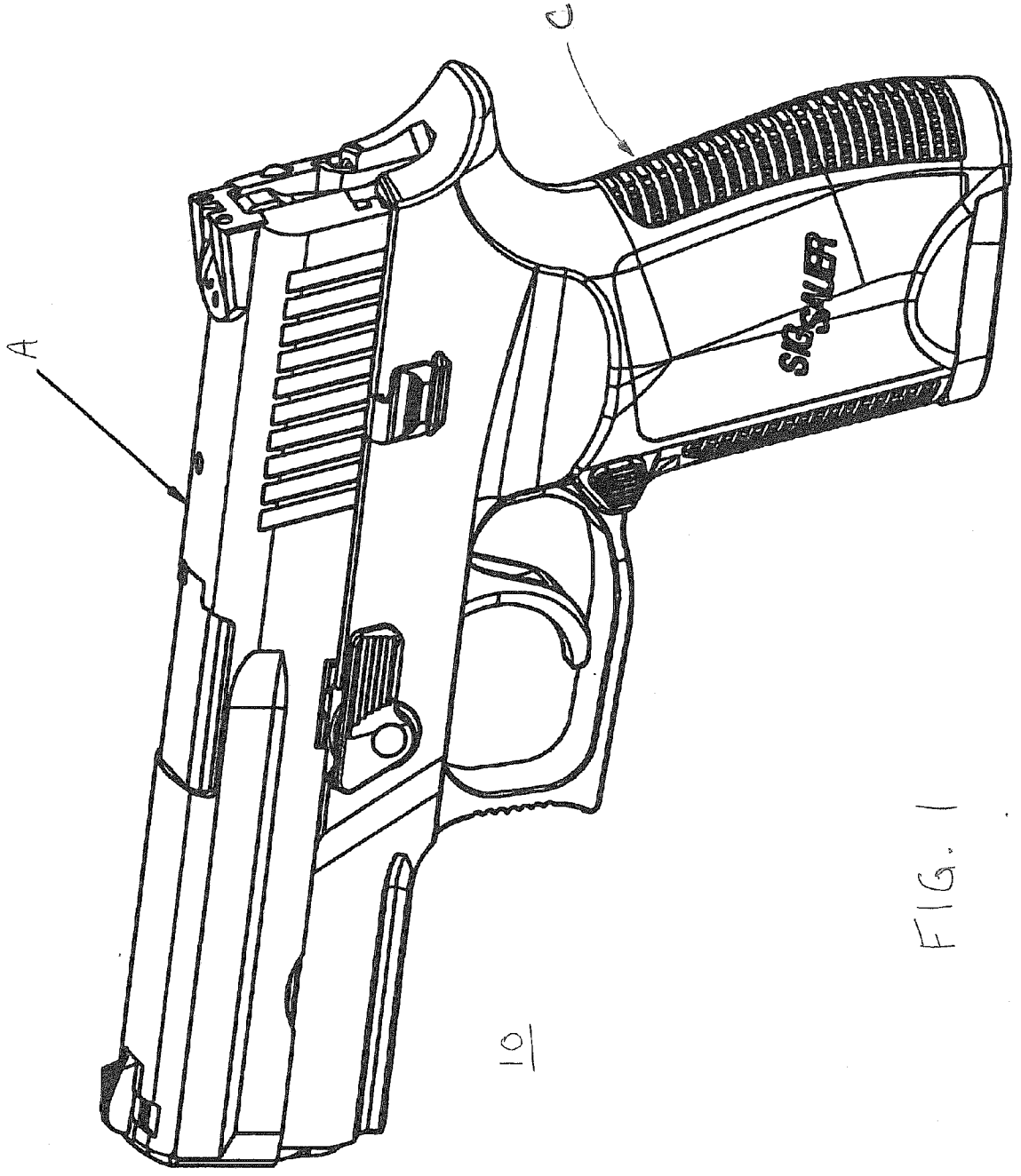


FIG. 1

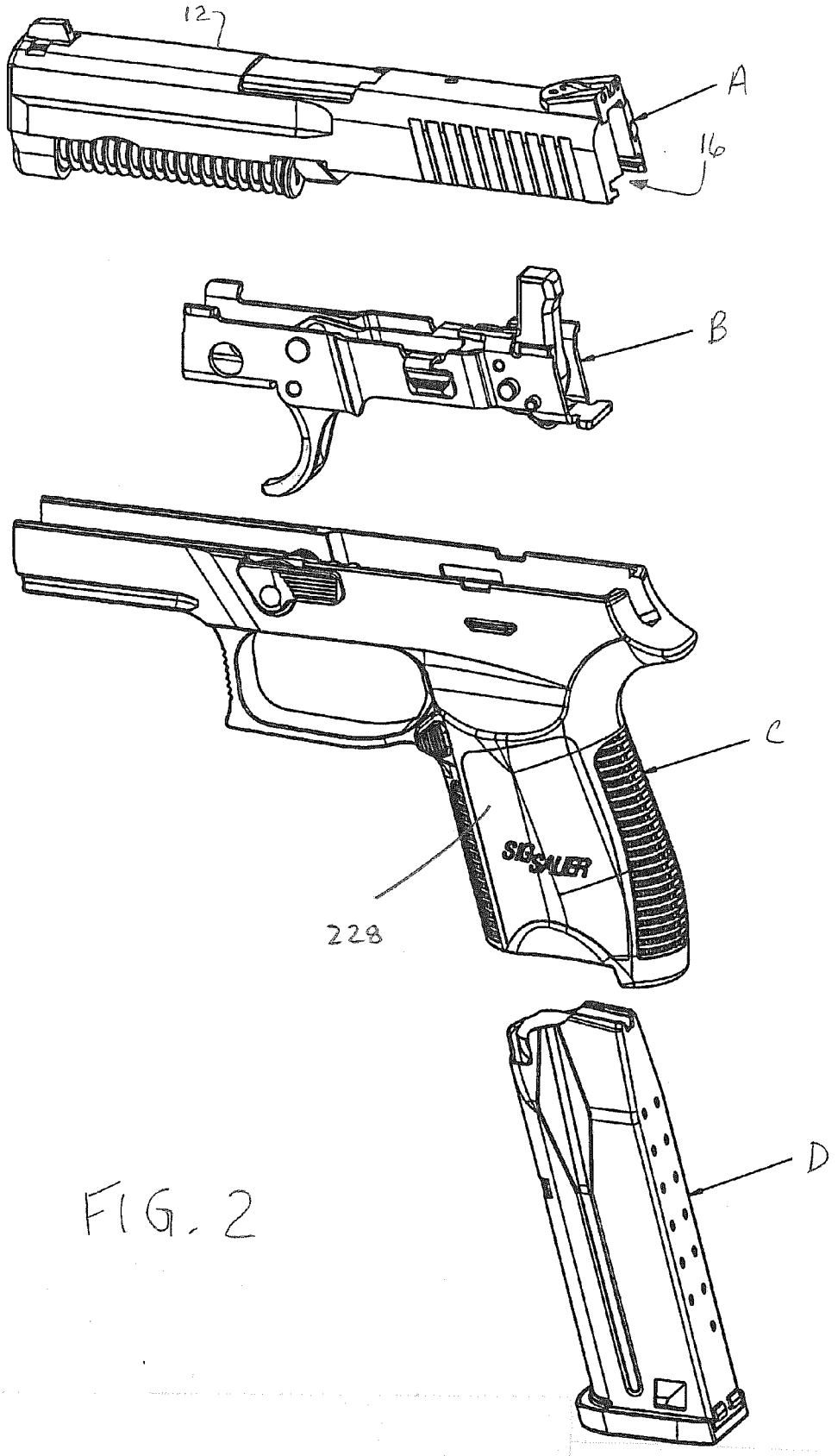


FIG. 2

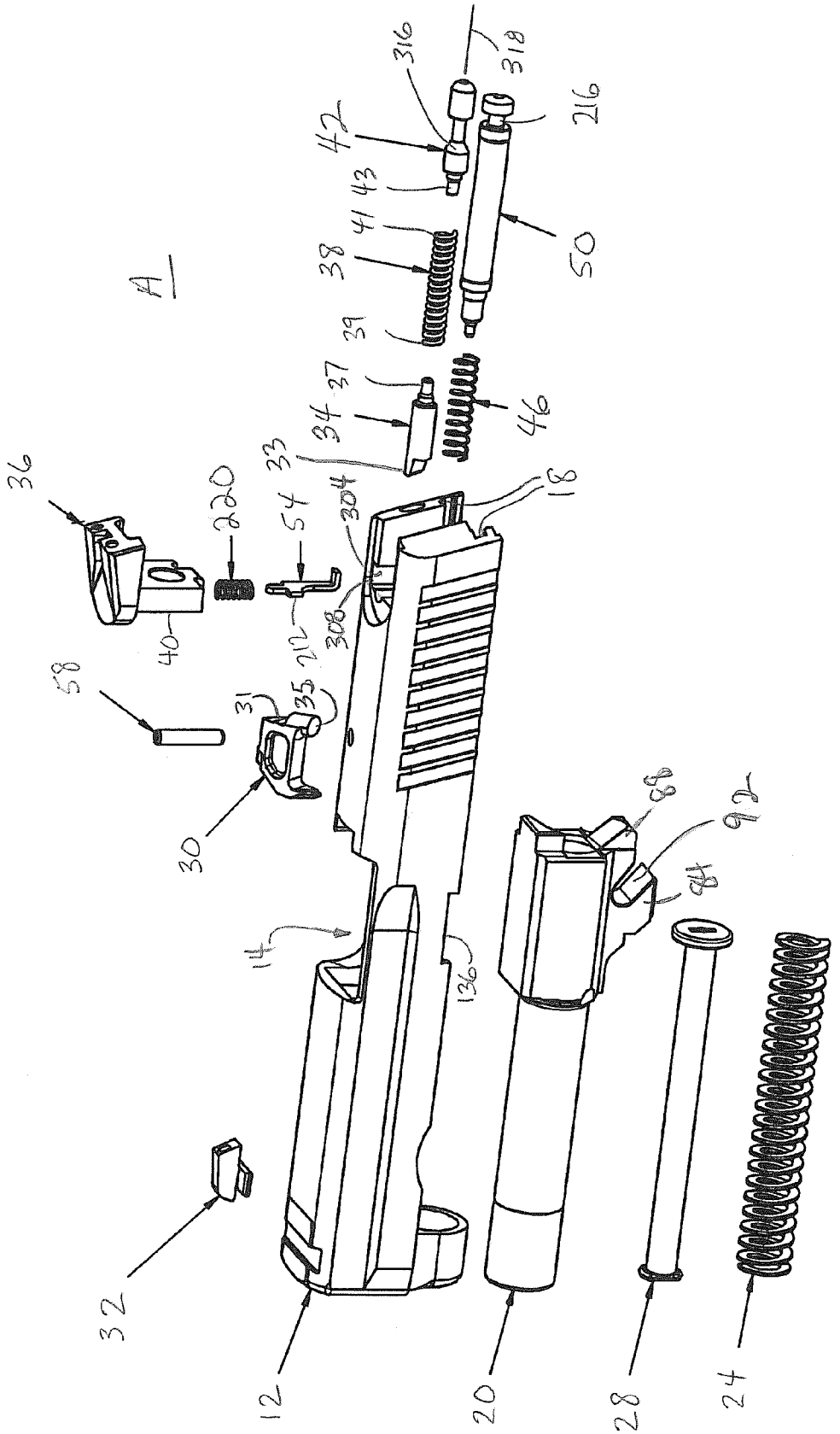

A
316
318
216
42
43
41
38
39
50
37
34
33
46
36
220
54
304
18
40
212
308
58
31
35
30
68
92
94
14
136
32
12
20
28
24

FIG. 3

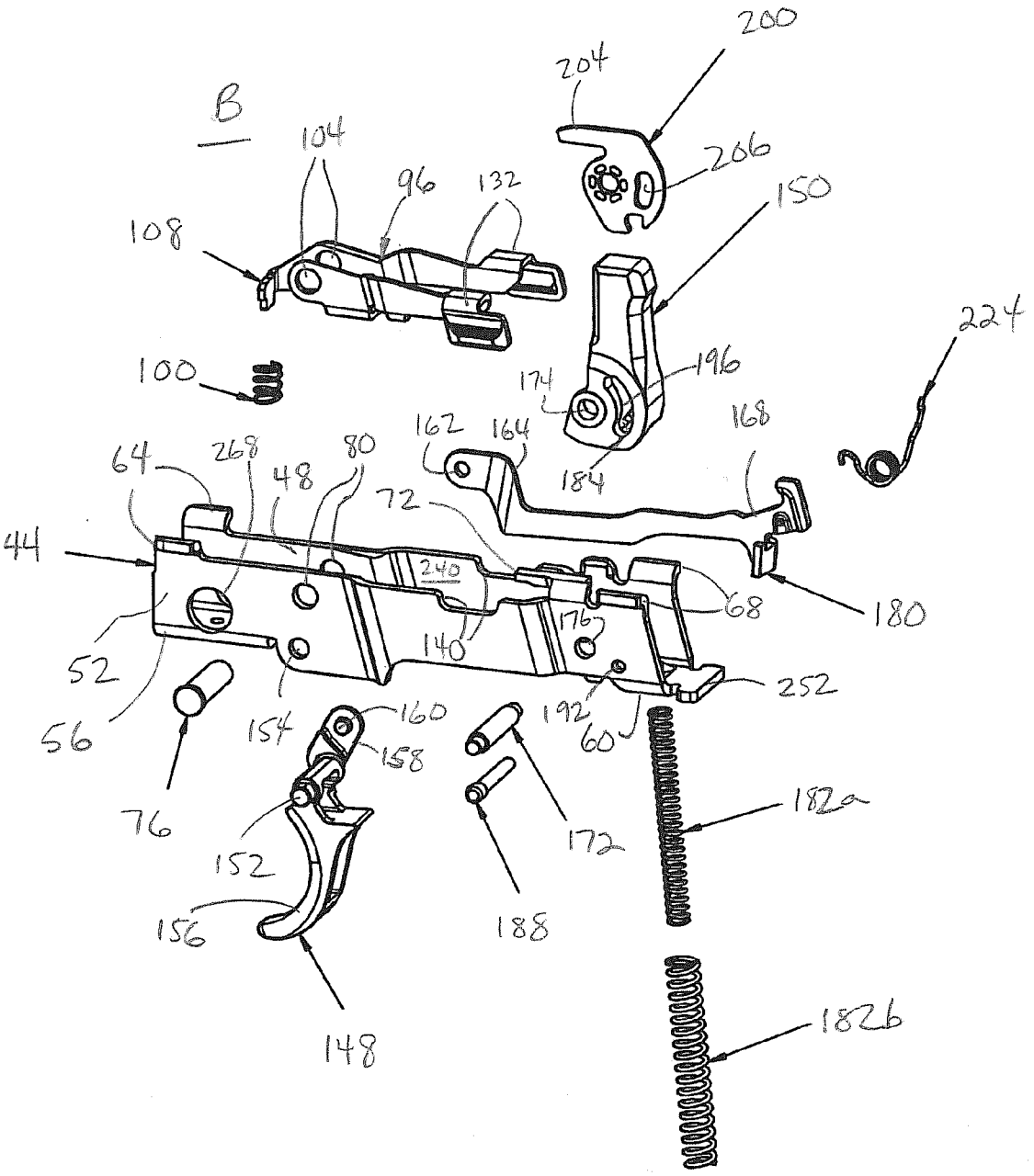

B
200
204
206
104
96
132
150
108
224
100
174
196
162
164
168
184
64
268
48
80
72
44
240
68
180
52
140
176
252
56
154
160
192
60
158
76
182a
152
172
156
188
148
182b

FIG. 4

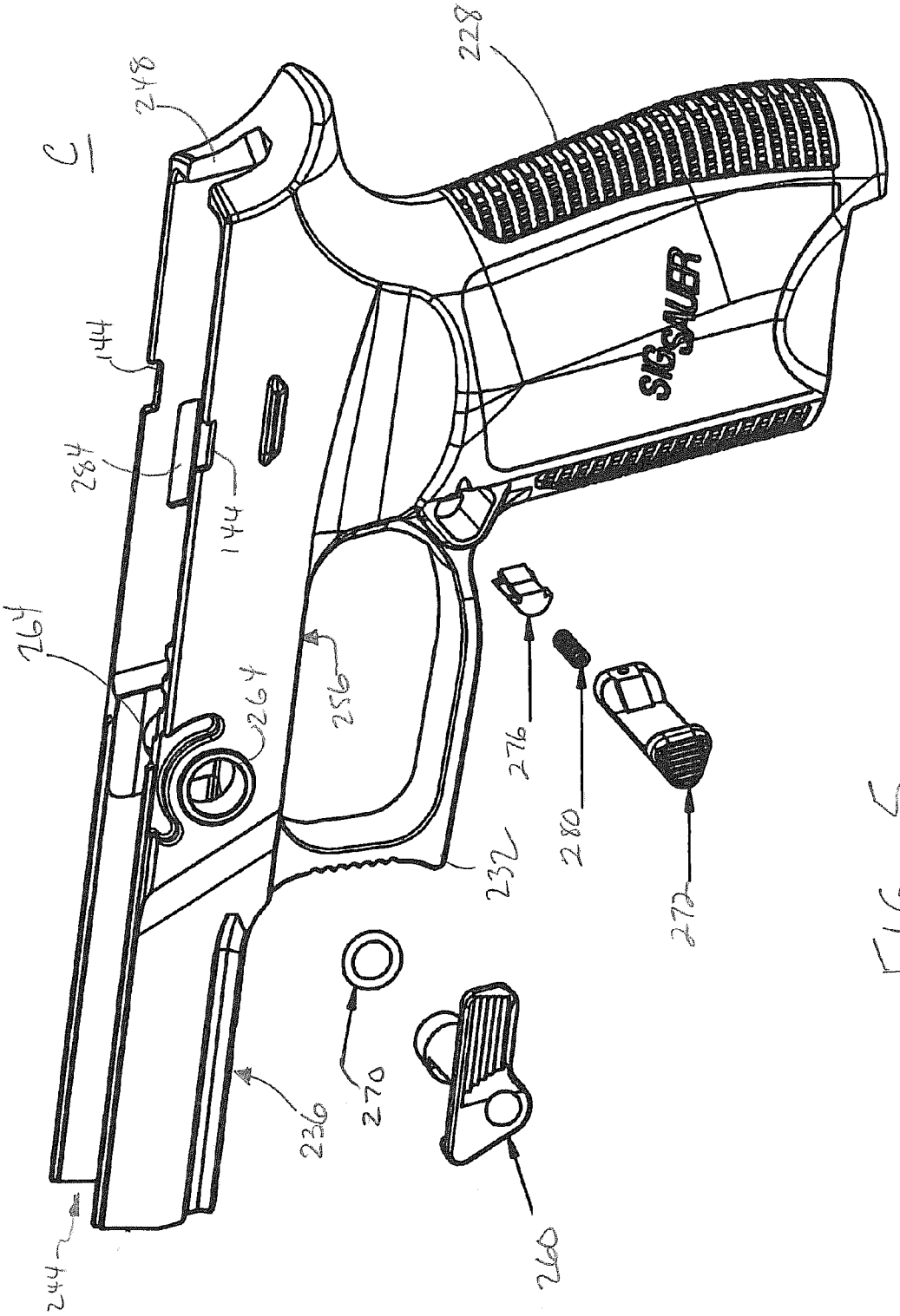

C
248
228
144
284
144
264
264
256
276
280
272
232
236
270
260
244
SIGSAUER

FIG. 5

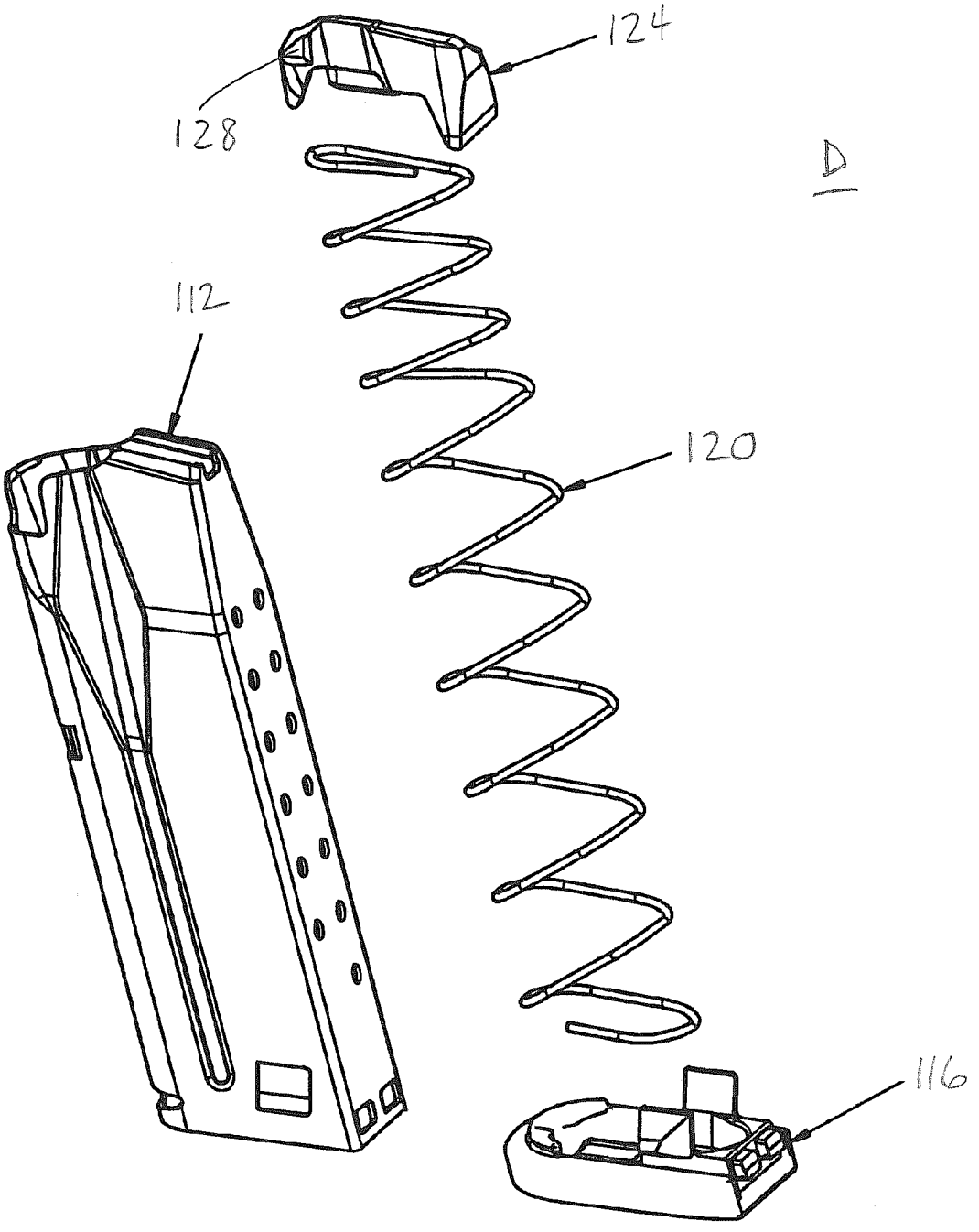


FIG. 6

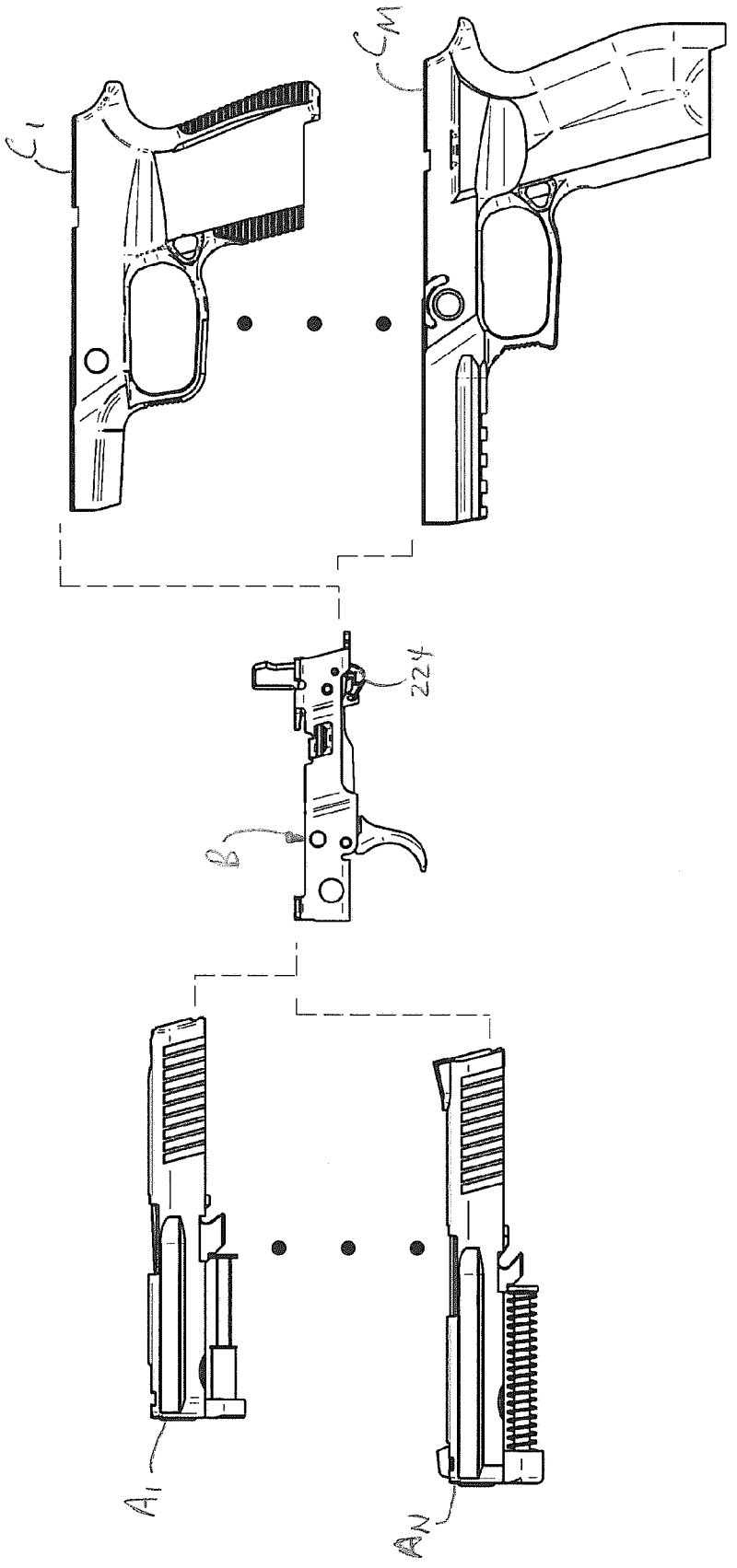


FIG. 7

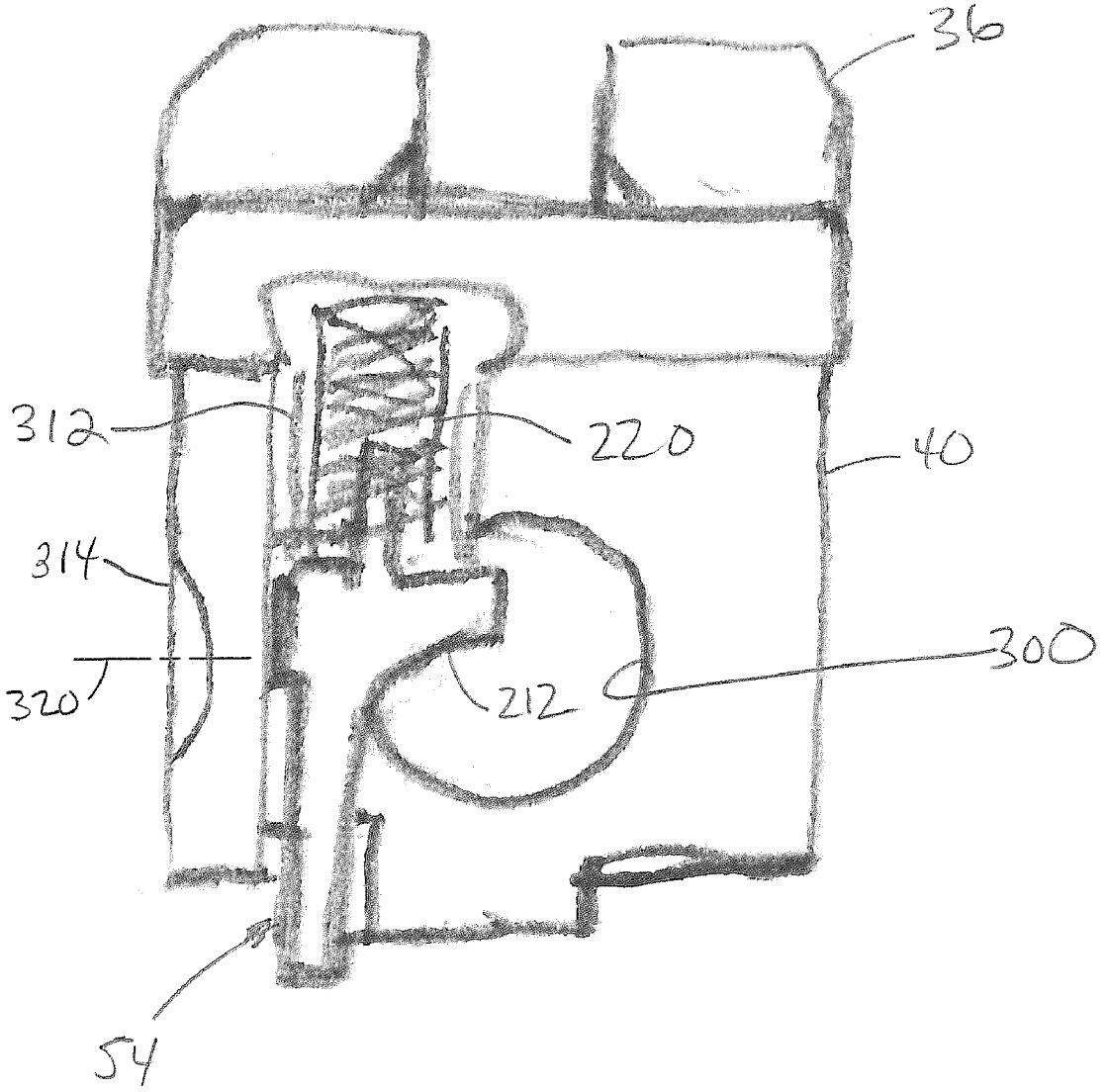
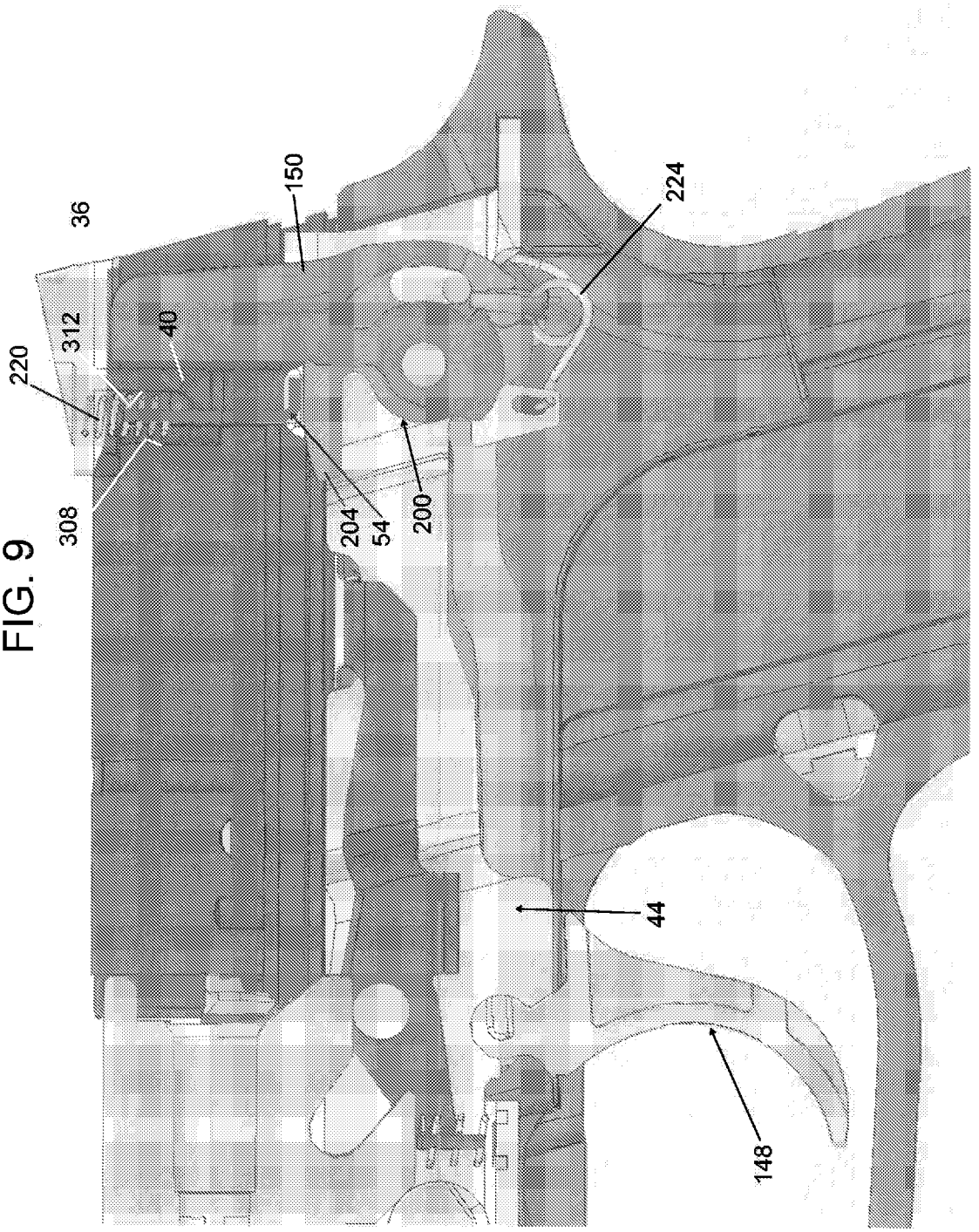


FIG. 8

FIG. 9



MODULAR FIREARM SYSTEM WITH INTERCHANGEABLE GRIP AND SLIDE ASSEMBLIES AND AN IMPROVED FIRING PIN SAFETY FOR FIREARM

RELATED APPLICATIONS

[0001] This application claims the priority benefit under 35 U.S.C. § 119(e) of U.S. provisional patent application No. 60/969,047 filed Aug. 30, 2007. The aforementioned application is herein incorporated by reference in its entirety.

BACKGROUND

[0002] The present disclosure relates generally to the art of firearms. In a first aspect, the present disclosure relates to a modular firearm system that is customizable with respect to firearm size, handgrip size, caliber, or any combinations thereof. In a second aspect, the present disclosure relates to an improved firing pin safety for a firearm having a one-piece machined slide. The present developments find particular application in conjunction with a double-action semi-automatic pistol and will be described with particular reference thereto. It is to be appreciated, however, that the present invention is amenable to other like single-action or double-action semi-automatic pistols.

SUMMARY

[0003] The embodiments disclosed herein allow for multiple modular firearm configurations, thereby providing significant customizability of the firearm by the user. As will be appreciated upon a reading and understanding of this disclosure, all of the components necessary to fire the weapon are carried on a common receiver assembly. Interchangeable slide assemblies and handgrip modules can be detachably connected to the common receiver to substitute one firearm size, handgrip circumference, and/or munitions caliber for another. For example, the handgrip module can be substituted so as to change the size of the firearm and/or the slide assembly can be changed for purposes of changing the caliber of the firearm. In a further aspect, an improved firing pin safety system is provided. In yet another aspect, a method and apparatus for seating a rear sight assembly within the slide assembly are provided.

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] The invention may take physical form in certain parts and arrangements of parts, a preferred embodiment and method of which will be described in detail in this specification and illustrated in the accompanying drawings, which form a part hereof, and wherein:

[0005] FIG. **1** is a pictorial view of an exemplary customizable firearm embodiment;

[0006] FIG. **2** is an exploded view of the firearm appearing in FIG. **1**, illustrating a slide assembly and a handgrip assembly, either or both of which may be interchangeably received on a receiver assembly;

[0007] FIG. **3** is an exploded view of the slide assembly;

[0008] FIG. **4** is an exploded view of the receiver assembly;

[0009] FIG. **5** is an exploded view of the handgrip module;

[0010] FIG. **6** is an exploded view of the magazine;

[0011] FIG. **7** illustrates a firearm system having plural interchangeable slide assemblies and plural interchangeable handgrip modules;

[0012] FIG. **8** is an enlarged front view of an integral hammer stop and rear sight with firing pin safety; and

[0013] FIG. **9** is a fragmentary side cross-sectional view showing the trigger, hammer, and firing pin safety assemblies in detail.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0014] Referring now to the drawing figures, wherein like reference numerals refer to like or analogous components throughout the several views, and with particular reference to FIGS. **1** and **2**, a firearm denoted generally as **10** includes a slide assembly A, a receiver assembly B, and a handgrip assembly C. A magazine D is removably received within an interior compartment defined by a generally hollow handgrip portion **228** of the handgrip assembly C.

[0015] As best seen in FIGS. **2** and **3**, the slide assembly A includes a slide **12** having an axial channel **16** and a barrel **20** received within the channel **16**. A recoil spring **24** is coaxially received about a recoil spring guide **28** for returning the slide **12** into a state of battery.

[0016] The slide assembly A contains an extraction assembly, including an extractor **30**, an extractor pin **34**, an extractor spring **38**, and an extractor spring pin **42** for extracting a cartridge from the chamber of the barrel **20**. Other extractors and extraction assemblies as are generally known to those skilled in the art are also contemplated.

[0017] In the depicted preferred embodiment, the extractor **30** is a pivoting type extractor having a bearing surface **31** that engages a forward end **33** of the extraction pin **34**. The extractor **30** is pivotable about a pivot point **35**, e.g., when chambering a round. After a round is fired, the extractor **30** pulls the cartridge out of the firing chamber and holds the cartridge in position for ejection by the ejector **72** (see FIG. **4**). A rearward end **37** of the extractor pin **34** engages a forward end **39** of the spring **38**, e.g., via a snap fit. A rearward end **41** of the spring **38** engages a forward end **43** of the extractor spring pin **42**. The extractor spring pin **42** also includes a conical portion **316**, which engages the rear sight assembly **36** to seat and retain the rear sight, as described below.

[0018] The slide assembly A also includes front and rear sights **32** and **36**, respectively, and an ignition system comprising a firing pin **50** and firing pin spring **46** housed within the slide **12**, a firing pin retaining pin **58**, and a firing pin safety **54**, which is discussed in greater detail below. In the depicted embodiment, the rear sight assembly **36** also includes an integrated hammer stop **40**, although a hammer stop and rear sight that are separate may also be employed.

[0019] Referring now to FIG. **4**, the receiver assembly B includes a frame or receiver **44** including opposing and upstanding side members **48** and **52** and which are connected in opposed and spaced apart relation via front base member **56** and rear base member **60**.

[0020] The sidewalls **48**, **52** of receiver **44** include front and rear rail members **64** and **68**, respectively, which are slidingly received within complimentary axially extending channels **18** formed within the channel **16** of the slide **12** to permit relative axial movement between the slide **12** and the receiver **44**.

[0021] An ejector **72** is formed on the sidewall **52** of the receiver **44** for pushing the cartridge out of the ejection port or aperture **14** of the slide **12** during rearward travel of the slide **12** during operation, e.g., ejecting a spent cartridge when firing the firearm or for manually extracting the cartridge.

[0022] The receiver **44** also includes a mounting point for the barrel control means. In the depicted embodiment, barrel movement is controlled by a transversely extending pin or the like **76**, which is received through opposing, aligned openings **80** in the sidewalls **48** and **52**. In operation, the barrel control member **76** engages locking/unlocking lugs **84** and **88**, defining an inclined channel **92**, to unlock the barrel as the slide moves in the forward direction and to lock the barrel as the slide moves in the rearward direction.

[0023] In the depicted embodiment, the barrel control member **76** also provides a mounting point for a slide catch lever assembly comprising a slide catch lever **96** and slide catch lever spring **100**. It will be recognized that in alternative embodiments a separate or dedicated slide catch lever pin, separate from the barrel control member, could be used as well.

[0024] The pin **76** is received through openings **104** formed in the slide catch lever **96** to pivotally mount the slide catch lever to the receiver **44**. The spring **100** bears against an arm portion **108** of the slide catch lever **96** to urge the slide catch lever **96** to the normal, non-rotated position.

[0025] The magazine assembly D, as best seen in FIG. **6**, includes a magazine tube **112** for holding rounds of munitions to be fired, a magazine base plate **116**, a magazine spring **120**, and a magazine follower **124**. The magazine follower **124** includes a slide catch shelf **128** which engages the slide catch lever **96** when the magazine is empty, i.e., when the last round has been fired or when an empty magazine is inserted into the handgrip interior compartment. The slide catch shelf **128**, at the urging of the magazine spring **120**, moves the slide catch lever **96** into a rotated position, overcoming and compressing the slide catch lever spring **100**.

[0026] Referring now to FIGS. **3** and **4**, the slide catch lever **96** includes slide engagement members **132**, which are sized to engage complimentary notches **136** formed in the slide **12**. In this manner, when the last round is fired, the engagement members **132** engage the notches **136** and the slide **12** is locked in an axial position relative to the receiver **44** that is out of battery. When the slide catch lever **96** is in the non-rotated position, the engagement members **132** are seated in notches **140** in the receiver and notches **144** in the handgrip module C. The engagement members **132** thus are externally accessible and may be manually operated to selectively lock and unlock the slide **12** relative to the receiver **44**.

[0027] The receiver **44** also provides a means for mounting a trigger **148**, a hammer **150**, and the mechanical linkage therebetween. The trigger **148** is pivotally mounted in openings **154** in the receiver sidewalls **48**, **52**, about a pivot point **152** and includes a trigger shoe **156** for actuation with a user's finger for firing a round.

[0028] The trigger **148** also includes an arm **158** having protrusion **160** thereon, which engages a complimentary sized opening **162** in a trigger bar **164**. During operation, as the trigger **148** is rotated, the trigger bar is moved forward and is cammed downward by an inclined surface **168** running on a hammer pivot pin **172** received in openings **176** of the receiver **44** sidewalls **48** and **52**, the hammer pivot pin **172** also extending through an opening **174** in the hammer **150** to pivotally mount the hammer **150** on the receiver **44**. The trigger bar **148** includes a hammer-engaging tab **180**, which engages a protrusion or shoulder **184** within an arcuate channel **196** in the hammer **150**.

[0029] The trigger bar **164** engages the hammer **150** when the trigger **150** is in its rest or non-rotated position. As the trigger bar **164** moves in response to rotation of the trigger **148**, the hammer **150** rotates. One or more captured hammer springs **182***a*, **182***b* are received within a cavity formed in the hammer **150** and are retained therein by a hammer spring seat pin **188** which is received through openings **192** in the receiver sidewalls **48** and **52** and the arcuate channel **196** of the hammer **150**. As the hammer is rotated in response to a trigger pull, the springs **182***a*, **182***b* are compressed by the relative movement of the hammer spring seat pin **188** as it travels in the arcuate channel **196**. In the depicted preferred embodiment, the springs **182***a* and **182***b* are coaxial coil springs having opposite directions of helical twist to avoid binding with each other as the springs are compressed.

[0030] Further rotation of the trigger causes the hammer engaging tab **180** to move out of contacting relation with the hammer **150** when the trigger **148** is pivoted. The energy stored by the compression of the hammer springs **182***a*, **182***b* causes the hammer to rotate with force against the firing pin **50** to fire the weapon.

[0031] The movement of the trigger bar **168** also rotates a safety lever **200** having an arm **204** engaging the firing pin safety **54**. The firing pin safety **54** includes a shoulder **212**, which is urged downward into engagement with a slot **216** in the firing pin **50** by a firing pin safety spring **220**. In this manner, the rotation of the safety lever **200** during a trigger pull moves the safety **54** out of engagement with the firing pin **50**, so that the firing pin **50** becomes free to move.

[0032] A trigger bar spring **224**, which may be a torsion spring, provides the force to move the trigger bar **148** up and back, that is, the upward force keeps the trigger bar engaged with the hammer **150** and the backward force resets the trigger bar to the rest position after a round is fired.

[0033] Referring now to FIG. **5**, the grip module C includes the handgrip portion **228**, a trigger guard **232**, and a dust cover portion **236**. Because the handgrip module C has none of the components required to fire the weapon, it may be readily interchanged with other handgrip modules of different size. For example, in certain embodiments, a firearm system may include a plurality of handgrip modules, which allows the users to select from a plurality of weapon sizes, e.g., full size, compact, and subcompact sized handguns. Furthermore, for each given size of handgrip module C, there may be provided a plurality of handgrip **228** circumferences, e.g., small, medium and large. In this manner, the interchangeable handgrip modules C provide a firearm system that is highly customizable to the hand size or other size preferences of the user. For example, in a preferred embodiment of a system having three firearm sizes (i.e., full-size, compact, and sub compact) and, for each firearm size, three handgrip **228** sizes (e.g., small, medium and large), there are nine combinations of firearm size and handgrip circumference.

[0034] The handgrip portion **228** includes a hollow interior portion which receives the magazine D, which feeds rounds into a magazine well portion **240** of the receiver **44**. The hollow interior compartment defined by the handgrip portion **228** defines an extension of the magazine well **240**.

[0035] Referring now to FIGS. **4** and **5**, the receiver **44**, which carries and locates everything required to fire a round, is received within a channel **244** in the handgrip module C. A notch **248** formed in the rear of the channel **244** receives an extension tab **252** of the receiver **44** and locates the receiver at the appropriate position within the channel **244**.

[0036] The trigger shoe **156** passes through an opening **256** in the channel **244** and extends into the region bounded by the

trigger guard **232**. The dust cover portion **236** houses the barrel **20**, recoil guide **28**, and recoil spring **24**, and prevents external contaminants from fouling the recoil mechanism.

[0037] A take down lever **260** passes through openings **264** in the handgrip module C and aligned openings **268** in the receiver sidewalls **48** and **52**. A sealing ring or gasket **270** between the take down lever **260** and the opening **264** provides a seal against the entry of external contaminants into the channel **44**. The take down lever **260** locates and provides the primary locking position of the barrel **20**.

[0038] A magazine catch assembly includes a magazine catch **272**, a magazine catch stop **276**, and a magazine catch spring **280** for removably securing the magazine D in the interior compartment of the handgrip. The magazine catch **272** is manually depressible to remove the magazine D from the handgrip module C.

[0039] The handgrip module C may include a window or aperture **284** through which a serial number or other serialized indicia can be visualized, the serialized indicia appearing on the corresponding aligned portion of the exterior-facing surface of the sidewall **48**. The window may optionally include a pane or transparent material received within the aperture. In this manner, any of a plurality of handgrip modules C may be interchanged for a single, serialized firearm.

[0040] In addition to the interchange of handgrip modules C to provide a firearm having a desired firearm size and/or handgrip circumference as described above, the firearm system in accordance with this disclosure may also include multiple interchangeable slide assemblies A which may be slidably and interchangeably received on the rails **64**, **68**. In certain embodiments, the plurality of interchangeable slide assemblies A may be sized to correspond to the selected handgrip size, e.g., full-size, compact, and subcompact. In further embodiments, for any given size of slide assembly, there may be a plurality of munitions caliber options available. The slide assembly A may be adapted by providing an appropriate barrel **20** for firing cartridges of a variety of caliber sizes including, but not limited to, 9 millimeter, .357 Sig, S&W .40, and .45 Auto caliber sizes.

[0041] It will be recognized that, depending on the various calibers selected, it may or may not be necessary to interchange the handgrip module C when a different caliber slide assembly A is selected. When exchanging slide assemblies A for different calibers having the same axial length, a common handgrip module C may be used for such different calibers, wherein it is only necessary to exchange the magazine D. However, it is also contemplated that, even for calibers having different lengths, a common handgrip module C can be employed, for example, using different magazines D and spacers within the interior compartment of the handgrip module C as necessary to compensate for a selected caliber, as required.

[0042] The interchangeability of modular components is illustrated in FIG. **7**. In the illustrated embodiment, a plurality (up to some number N) of slide assemblies A_1 to A_N are interchangeably attachable to the common receiver assembly B. Likewise, a plurality (up to some number M) of handgrip modules C_1 to C_M are interchangeably attachable to the common receiver B.

[0043] In this manner, in a preferred embodiment having three different firearm sizes, one serialized subassembly can be used by the consumer to make three sizes of gun (e.g., subcompact, compact, or full size). In an especially preferred embodiment wherein each of the three firearm sizes has three handgrip circumferences (e.g., small, medium, and large, there are a total of nine firearm size and handgrip circumference configurations.

[0044] In a preferred embodiment where there are four calibers (e.g., 9 mm, .40 S&W, .357 Sig, and .45 Auto) any of the previous 9 firearm size/handgrip circumference configurations can be combined with any of the four calibers to provide 32 possible combinations of size, grip, and caliber so that the consumer can tailor their gun to meet their specific requirements. It also allows law enforcement agencies to issue the same model of gun to everyone in their organization, but still be able to customize the ergonomics to fit an ever-growing range of officers. The system also allows rapid and facile reconfiguration of the firearm, with reconfiguration taking less than one minute. It will be recognized that other numbers of firearm size, handgrip size, and/or caliber may be provided.

[0045] Although the preferred embodiment described herein provides for variability of firearm size, handgrip circumference, and caliber, it will be recognized that systems may be provided wherein one or more of these variables remain constant. For example, systems having interchangeable handgrip modules C and slides A for providing variable firearm sizes and/or handgrip circumferences for a single caliber are contemplated. Likewise, systems having interchangeable handgrip modules C and slides A for providing variable firearm sizes and/or variable calibers, without necessarily providing variable handgrip sizes within each firearm size, are also contemplated. Similarly, systems having interchangeable handgrip modules C and slides A for providing variable handgrip circumferences and/or variable calibers, all within a single firearm size, are also contemplated.

[0046] In a further aspect of this disclosure, referring now to FIGS. **8** and **9**, there is provided an improved firing pin safety for use in a one-piece machined slide. Although the firing pin safety described herein may be used in connection with the slide assembly A as detailed above, it will be recognized that the firing pin safety herein is also amenable for use in other firearms having a one-piece machined slide.

[0047] Commonly, the firing pin safety in a one-piece machined slide is formed of a relatively heavy piece of metal received within a bore hole formed in the slide. The firing pin safety is urged into engagement with a firing pin safety spring and drop testing requires that the firing pin safety remain engaged with the firing pin when the weapon is dropped from a certain height. Because the firing pin safety is typically formed of a relatively heavy piece of metal in a one-piece machined slide and thus has significant inertia when dropped, a firing pin safety spring with relatively high spring force is required. The spring force of the firing pin safety spring is one of the spring forces that must be overcome by the user when pulling the trigger. Thus, a firing pin safety spring with a high spring force is disadvantageous since it increases the force required to actuate the trigger and fire the weapon.

[0048] The improved firing pin safety system herein allows for the use of a very lightweight firing pin safety member in a one-piece machined slide and the firing pin safety member herein may be produced relatively inexpensively as a stamped sheet metal part. It will be recognized, however that the firing pin safety member herein may be formed of any suitable material, including without limitation, sheet metal, machined metal, a metal injection molded material, a plastic, e.g., injection molded, material, a composite material such as a fiber reinforced resin material, and so forth. Because the firing pin

safety member can be fabricated of a material that is relatively low weight, thus providing a firing pin safety member that is low in inertia, a firing pin safety spring with a relatively low spring force can be used to bias the safety member into the locked position, thereby reducing the trigger pull weight while also meeting firearm drop testing requirements.

[0049] As best seen in FIGS. **3** and **8**, a rear sight **36** includes an integral hammer stop **40**, which also functions as firing pin safety retainer in the depicted preferred embodiment. The firing pin **50** is received through an opening **300** in the hammer stop **40**. The hammer stop **40** is received within a machined slot **304** in the slide **12**. A first, generally semi-cylindrical recess **308** in the rearward-facing surface of the slot **304** cooperates with a second, generally semi-cylindrical recess **312** formed in the forward-facing surface of the hammer stop **40** to define a cylindrical recess housing the firing pin safety spring **220**. It will be recognized that the firing pin safety retainer need not be integral with the rear sight and/or hammer stop, and that other firing pin safety retention configurations are contemplated. For example, a separate or dedicated firing pin safety pin retainer having an opening and semi-cylindrical recess or cavity as described above can be received in the slot **304**.

[0050] In operation, the spring **220** urges the firing pin safety spring **54** downward so that the shoulder **212** of the firing pin safety engages the annular channel **216** in the firing pin **50**, thereby preventing axial movement of the firing pin **50**. When the firing pin safety **54** is urged upward by the arm **204** of the safety lever **200** during a trigger pull operation, thereby compressing the spring **220**, the shoulder **212** moves out of the annular channel **216**, allowing the firing pin to move axially when struck by the hammer **150** to fire the weapon.

[0051] With continued reference to FIGS. **3** and **8**, the rear sight assembly **36** in accordance with the depicted preferred embodiment also includes a generally partial conical cut out or recess **314**, which engages an aligned, facing, and contacting portion of a conical portion **316** of the extractor spring pin **42** (see FIG. **3**). The extractor spring **38** urges the extractor spring pin **42** in the rearward direction. The engaging portion of the conical surface **316** thereby urges the rear sight assembly **36** to the right (in the orientation shown in FIG. **8**).

[0052] Also, the extractor spring pin **42** is aligned within the slide assembly such that the longitudinal axis **318** of the extractor spring pin **42** is lower than the vertical midpoint **320** of the partial conical cutout **314**. In this manner, when the conical portion **316** bears against the cutout **314** at the urging of the spring **38**, the rear sight assembly **36** is also urged in the downward direction (relative to the orientation shown in FIG. **8**). Thus, the net resultant force on the rear sight assembly **36** as a result of the cooperation between the biased conical portion **316** and the cutout **314** downward and to the right (in the orientation shown in FIG. **8**), to thereby retain and seat the rear sight assembly **36** in proper position on the slide **12**.

[0053] The present developments have been described with reference to the preferred embodiments. Modifications and alterations will occur to others upon a reading and understanding of the preceding detailed description of the preferred embodiment. It is intended that the invention be construed as including such modifications and alterations.

Having thus described the preferred embodiments, the invention is now claimed to be:

1. A modular, customizable firearm system comprising:

a receiver assembly including a receiver having a trigger assembly pivotally mounted thereto, a hammer assembly mounted thereto, and a mechanical linkage between the trigger assembly and the hammer assembly;

a plurality of differently sized handgrip assemblies, each of said differently sized handgrip assemblies having a receiver channel for removably and interchangeably receiving said receiver assembly and a handgrip portion having a hollow interior for removably receiving a magazine assembly; and

at least one slide assembly removably and slidably attachable to said receiver assembly.

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

said differently sized handgrip assemblies selectable by a user, wherein interchange of said differently sized handgrip assemblies alters one or both of a size of the firearm and a circumference of said handgrip portion.

3. The modular, customizable firearm system of claim **2**, wherein the size of the firearm is selected from full size, compact, and sub compact.

4. The modular, customizable firearm system of claim **1**, further comprising:

said at least one slide assembly including a plurality of differently sized slide assemblies selectable by a user, wherein interchange of said differently sized slide assemblies alters one or both of a size of the firearm and a caliber of the firearm.

5. The modular, customizable firearm system of claim **4**, wherein the size of the firearm is selected from full size, compact, and sub compact.

6. The modular, customizable firearm system of claim **4**, wherein the caliber is selected from the group consisting of 9 millimeter, .357 Sig, S&W .40, and .45 Auto.

7. The modular, customizable firearm system of claim **1**, wherein said at least one slide assembly includes a one-piece machined slide.

8. The modular, customizable firearm system of claim **1**, further comprising:

serialized indicia on an outward facing surface of said receiver; and

each handgrip assembly having a window aligned with said serialized indicia when the receiver assembly is received within the receiver channel of the handgrip assembly to allow transvisualization of the serialized indicia through said window.

9. A modular, customizable firearm system comprising:

a receiver assembly including a receiver having a trigger assembly pivotally mounted thereto, a hammer assembly mounted thereto, and a mechanical linkage between the trigger assembly and the hammer assembly;

at least one handgrip assembly having a receiver channel for removably receiving said receiver assembly and a handgrip portion having a hollow interior for removably receiving a magazine assembly; and

a plurality of differently sized slide assemblies, each of said differently sized slide assemblies removably and slidably attachable to said receiver assembly.

10. The modular, customizable firearm system of claim **8**, further comprising:

said plurality of differently sized slide assemblies selectable by a user, wherein interchange of said differently sized slide assemblies alters one or both of a size of the firearm and a caliber of the firearm.

11. The modular, customizable firearm system of claim **10**, wherein the size of the firearm is selected from full size, compact, and sub compact.

12. The modular, customizable firearm system of claim **10**, wherein the caliber is selected from the group consisting of 9 millimeter, .357 Sig, S&W .40, and .45 Auto.

13. The modular, customizable firearm system of claim **9**, wherein each of said slide assemblies includes a one-piece machined slide.

14. A safety mechanism for firearm having a slide, comprising:

a firing pin having a groove;

a firing pin safety having a projection, said firing pin safety being movable between a locked position wherein said projection is received within said groove and an unlocked position wherein said projection is not received with said groove, wherein axial movement of said firing pin is blocked when the firing pin safety is in the locked position;

a spring member urging said firing pin safety into the locked position; and

a safety lever coupled to a trigger assembly including a pivotally moveable trigger, said safety lever moving said firing pin safety from the locked position to the unlocked position against the urging of the spring member in response to pivoting movement of the trigger.

15. The safety mechanism of claim **14**, further comprising:

a firing pin safety retainer received within a machined slot in the slide, the firing pin safety retainer having an axially-extending opening aligned with an axially extending opening in the slide for receiving said firing pin;

a first generally vertically-extending recess formed on said firing pin safety retainer; and

a second vertically extending recess formed in an aligned and facing surface of said machined slot, said first and second vertically extending recess cooperating to define a cavity for capture of said spring member.

16. The safety mechanism of claim **15**, further comprising:

said firing pin safety retainer further including a hammer stop portion.

17. The safety mechanism of claim **14**, wherein said firing pin safety is formed of a material selected from the group consisting of sheet metal, machined metal, a metal injection molded material, a plastic material, and a composite material.

18. The safety mechanism of claim **17**, wherein said firing pin safety is formed of stamped sheet metal.

19. The safety mechanism of claim **14**, wherein said spring member is a spring having a low spring force.

20. A method for securing a rear sight assembly within a slide assembly of a handgun, the slide assembly having an extractor assembly including an extractor, and extractor pin, an extractor spring, said method comprising:

mounting an extractor spring pin within the slide assembly, said extractor spring pin having a conical portion;

securing a first end of the extractor spring to the extractor spring pin and a second end of the extractor spring to the extractor pin; and

positioning the conical portion of the extractor spring pin in aligned, facing, and contacting relation with a partial conical recess in the rear sight assembly, wherein the extractor spring cooperates with the conical portion to create a bearing force against the partial conical cutout, thereby securing the rear sight assembly within the slide assembly.

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