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(54) **Title:** HANDGUN SLIDE WITH INTEGRATED RED DOT SIGHT MOUNT

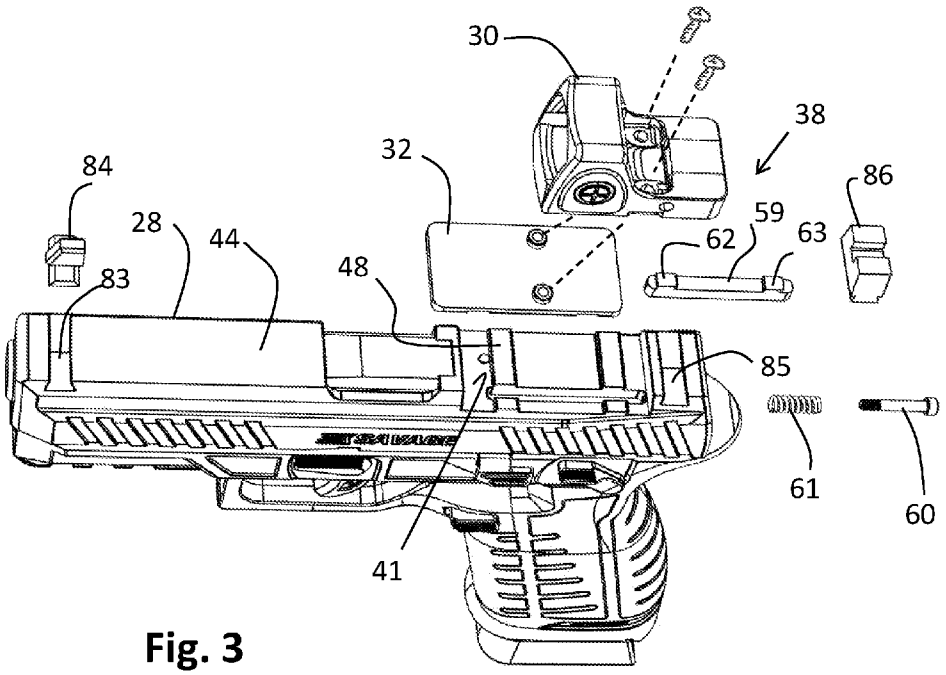


Fig. 3

(57) **Abstract:** A semiautomatic handgun has a slide that receives a mounting plate with dovetail slots. The mounting plate having a red dot sight, or other sight mounted thereto, or may be a blank mounting plate such that integrated open iron sights on the handgun may be utilized. The slide has an integrated latch member that is movable between a capture position and a release position. In embodiments, the latch member, as it captures the mounting plate, providing a repeatable left-right centering of the mounting plate with sight thereon by a kinematic coupling. Two dovetail projections on the slide providing repeatable up-down or elevation positioning as the mounting plate with sight thereon is slid onto the slide. In embodiments, the latch member is U-shaped, with two catch portions. The mounting plate has a conventional industry standardized interface on a top side for receiving the red dot sight.

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HANDGUN SLIDE WITH INTEGRATED RED DOT SIGHT MOUNT

CROSS REFERENCE TO RELATED APPLICATIONS

This PCT application claims priority to U.S. Provisional Application No. 63/322,037 filed March 21, 2022. Said application is incorporated by reference herein.

BACKGROUND OF THE INVENTION

Gun sights known as red dot sights utilize an illuminated dot in a viewing window to sight a target. Initially, such sights were typically mounted on long guns but red dot sights are now very popular on handguns as well, including semiautomatic handguns with slides.

Handgun users may want to change out different sights on their handgun including conventional iron sights. Additionally, users may want to use a particular sight on more than one handgun. Various means have been utilized for mounting red dot sights on handguns, but typically these involve threaded fasteners and multiple steps to swap out different sights on a handgun slide. Typically, the red dot sight must be removed from a mounting plate and then the mounting plate removed from the slide. When reinstalled, the handgun with sight must be re-zeroed, that is, realigning the point of impact on a target with the red dot. A handgun that can readily accommodate alternate sights, including a red dot sight, and where the alternate sights are easily and quickly swappable, and where the remounted red dot sight does not need to be re-zeroed, would be well received by the shooting public and industry.

SUMMARY OF THE INVENTION

A semiautomatic handgun has a slide with a pair of cross wise dovetail projections that receives a mounting plate with cooperating dovetail slots. The mounting plate having a red dot sight, or other sight mounted thereto, or may be a blank mounting plate such that integrated open iron sights on the handgun may be utilized. The slide has an integrated latch member that is movable between a capture position and a release position for retention and release of the mounting plate and attached sight. In embodiments, the latch member, as it captures the mounting plate, providing a repeatable left-right centering of the mounting plate with sight thereon. The two dovetail projections providing repeatable up-down or elevation positioning as the mounting plate with sight thereon is slid onto the slide. In embodiments, the latch member is U-shaped, with two catch portions. The mounting plate has a conventional industry standardized interface on a top side for receiving the red dot sight, and dovetail slots machined on the opposite side with further latch receiving notch extending from each dovetail slot. In

embodiments, the retention position has the catch portions positioned in the notches with leading edges of the catch portions engaging surfaces defining the notches providing the repeatable left-right centering of the mounting plate with sight thereon on the handgun.

A feature and advantage of embodiments is that special tools are not required to remove and/or attach the mounting plate with a sight attached thereto. In an embodiment, the latch member has a spring biased latch position and is movable to a release position by depression of a push button at a rearward end of the slide that moves the latch member against the resistance of the spring. Surprisingly, utilization of a spring with a spring force that allows easy manual depression of the exposed push button on a slide, also provides sufficient force to maintain the latch member in the capture position In embodiment, a single screw forwardly-rearwardly secures the latch member at the retention position. Removal or loosening of the screw allows the latch to move to the release position.

A feature and advantage of embodiments is that the original slide on a handgun may be replaced with a slide with the integrated latch system such that the mounting system utilizing a single latch to secure and remove mounting plates with sights thereon.

A feature and advantage of embodiments is that a handgun may be provided with the integrated latch system as part of the slide, or with recesses machined into the slide to subsequently receive the latch member.

A feature and advantage of embodiments is that components may easily be manufactured and provide easy swapping out of different sights and providing repeat positioning eliminating need to re-sight the sights, for example red dot sights.

A feature and advantage of embodiments is a slide with a pair of dovetail rails that are each continuous from side to side on the slide except for a forward rearward longitudinal slot that extends through each dovetail rail, the slot extending into the body of the slide. The dovetails rails providing an easy mounting of a mounting plate with a red dot sight attached thereto by engaging dovetail slots on the bottom side of the mounting plate with the dovetail rails from the left or right side of the slide. A latch member with a pair of upwardly projecting catch portions is positioned in the slot and has an install/remove position where the catch portions are in alignment with the two dovetail rails and has a retention position where the catch portions are not in alignment with the two dovetail rails and extend into notches that are contiguous with the respective dovetail slots on the bottom side of the mounting plate. In embodiments, the catch portions can provide a left-right centering of the mounting plate with sight attached thereto by kinematically coupling a rounded leading edge surface with receiving surfaces defining the notches.

A feature and advantage of embodiments is a handgun slide and mounting plate with a left right kinematic coupling providing left-right centering of the mounting plate with respect to the slide, the coupling comprising a forwardly rearwardly movable catch portion on the slide that engages a tapering or rounded notch in a mounting plate that repeatedly positions and left-right centers the mounting plate with respect to the catch portion on the slide. The catch portion may be spring biased or manually moved by a screw rotation to make the kinematic coupling and left right center the mounting plate. The mounting plate may have a red dot sight attached thereto or may be a blank plate providing a uniform or contiguous top surface shape of the slide.

DESCRIPTION OF THE FIGURES

Figure 1 is a perspective view of a handgun with a red dot sight mounted thereto and with an alternate mounting plate and a blank plate.

Figure 2 is a perspective view of the handgun of Figure 1 with a red dot sight assembly removed from the plate mounting region on the slide of the handgun.

Figure 3 is an exploded view of the sight mounting system portion of the handgun of Figures 1 and 2.

Figure 4 is an exploded view of a mounting plate, red dot sight, and the mounting plate receiving region on a slide.

Figure 5 is an upwardly looking perspective view of the slide and system of Figure 4 taken from the opposite side of that of Figure 4 and illustrating the bottom sides of the red dot sight unit and mounting plate.

Figure 6 is a side elevational view of a slide with a mounting plate attached thereto and the red dot sight shown in dashed lines.

Figure 7 is a top plan view of the slide and mounting plate of Figure 5.

Figure 8 is an exploded detailed view of latch components of the slide and mounting plate of the system of Figures 6 and 7.

Figure 9 is a cross sectional view of the slide and mounting plate of Figures 6 and 7, taken at line 9-9 of Figure 7 with the latch in the retention position.

Figure 10 is the slide and mounting plate of Figure 9 with the latch in the release position.

Figure 11 is an upwardly looking perspective view of the mounting plate interfacing with the latching components of the slide and mounting system of Figure 7.

Figure 12 is the upwardly looking perspective view of Figure 9 with the latch member in the release position.

Figure 13 is another configuration of mounting plate and latch system with the spring positioned opposite the threaded member with respect to the latch member.

Figure 14 is an upwardly looking perspective view of components of a latch system for a mounting plate that has a tubular spacer rather than a coil spring.

Figure 15 is a cross sectional view similar to Figure 9 but with the tubular spacer replacing the coil spring of Figure 9.

Figure 16 is a cross sectional view taken at line 16-16 of Figure 6, illustrating the latching member in a plate retention position.

Figure 17 is the cross sectional view of Figure 16 with the latching member in a release position.

Figure 18 is a detailed cross sectional view of a latch member catch portion.

Figure 19 is a cross sectional view of a portion of a mounting plate illustrating the recess that receives the latching member catch portion of Figure 18.

Figure 20 is a perspective view of a slide with mounting plate mounted thereon and handle release.

Figure 21 is a perspective view of the slide and mounting plate of Figure 20 with the mounting plate separated revealing the latch member with a forward bias.

Figure 22 is a cross sectional view of an embodiment consistent with Figures 20 and 21.

Figure 23 is a perspective view of a retail assemblage in accord with embodiments.

DETAILED DESCRIPTION

Referring to Figures 1 and 2, a semiautomatic handgun 20 with a sight mount system 26 that includes a red dot sight unit 30 mounted to the handgun slide 28 by way of a mounting plate 32. Also, disclosed is an alternate mounting plate 34, and a blank plate 36. The mounting plate 32 and alternate mounting plate 34 are configured as standardized mounting plates usable with many or most all red dot sight units. The slide 28 includes a slide body 29 which is mounted to the handgun body 37.

Red dot sight units, are known in the art, including mounting systems, see U.S. Pat. Nos. 6,327,806; 7,916,290; 9,958,234; 10,753,710; 10,782,099; 10,907,932; and 11,002,517; all of which are incorporated herein by reference for all purposes. Semiautomatic handguns are

disclosed in 10,119,777; 5,669,169; 5,741,996; 6,260,301; 8,828,243; 8,935,871, all of which are incorporated by reference herein for all purposes.

The sight mount system 26 includes a latching system 38 that is actuatable through port or opening 40. Referring to Figures 2-5, components, and details of the sight mount system 26 including the latching system 38 are illustrated. A red dot sight assembly 42 comprising, in embodiments, a mounting plate 34 and the red dot sight unit 30, is attachable and removable at a recessed area defining a mounting plate receiving region 41 with a top surface 43 on the top 44 of the slide 28. A pair of dovetail connections configured as dovetail rails 48, 49 project upwardly from the slide and extend crosswise on the slide, that is, from left side 51 to the right side 53 of the slide 28, perpendicular to the firearm axis $\alpha 1$. In embodiments, the dovetail rails 48, 49 are portrayed as continuous except for an openings 52, 54 in the rails, the openings contiguous with a forward rearward slot 56 in the slide body 29. The latching system further has a latching element 59 positioned in the slot 56, a threaded member 60 configured as a screw, and a spring 61. The latch member may be U-shaped with two latch catch portions 62, 63 projecting upwardly above the top surface 43 of the slide at the mounting plate receiving region. As best shown in Figure 8, in embodiments, the latch member 59 may have a threaded opening 65 at the rearward end 66 of the latch member that receives the threaded end 67 of the threaded member 60. An opening 68 configured as a bore extends from the slot 56 through the slide body to the rearward end 70 of the slide body 29. In embodiments, the opening 68 is partially defined by a shoulder 71 which with the head 72 of the threaded member 60 captures and constrains under compression the spring 61.

Continuing to refer to Figures 2-5, the mounting plate 32 may have a pair of threaded bosses 73, 73 on the top side 74 of the mounting plate that receive screws 75,76 that extend through the red dot unit 30 for securing the red dot unit to the plate providing the red dot sight assembly 42. Each of the mounting plates 32, 34 have dovetail connections configured as dovetail slots 81, 82 that are conformingly sized to the dovetail rails 48, 49 and allow the mounting plate to be slid onto the slide at the mounting plate receiving region 42. Similarly, the blank plate 36 has the dovetail slots. Referring to Figures 5, 8, 11, 12, and 14, each of the dovetail slots 81, 82 in the mounting plates have recesses configured as recesses or notches 89, 90 extending therefrom that receive the latch catch portions 62, 63 of the latching member 59.

The slide 28 may have a forward dovetail slot 83 that may receive a conventional forward iron sight 84, and a rearward slot 85 with a rear open iron sight 86 insertable therein.

Operation of the sight mount system 26 is as follows. Referring to Figures 2, 9, 11, and 16, the latch system is in a first retention position where the latching catch portions 62, 63 are seated in recesses 89, 90. In this position, when a mounting plate 32, 34 or blank 36 is seated in the mounting plate receiving region 42 with the dovetail slots 81, 82 engaged with the dovetail rails 48, 49, the plates cannot slide off of two dovetail rails as the catch portions 62, 63 extending into recesses 89, 90 block the plates from sliding off the dovetail rails 48, 49. With the spring having a sufficient spring constant and under sufficient compression, the latching member 59 will be retained in the first retention position upon firing the handgun and the recoil of the slide thereby maintaining the plate with the red dot unit mounted thereon. As indicated by the arrow 93 of Figures 9 and 11, a forward pushing of the threaded member 69 which compresses the spring 61 and moves the latching member 59 forwardly as illustrated in Figures 10, 12 and 17. In this position, the latch catch portions 62, 63 are in alignment with the dovetail rails 48, 49 and are then in a non blocking position and the plate can be slid off or on the dovetail rails 48, 49, that is, removed or attached.

Referring to Figures 16-19, the shape of the catch portions 62, 62 of the latch member 59 may be such that it centers the mounting plate 32 as it is received in the recesses 89, 90. For example, the corner radius 97 of the corners 98, 99 of the rearward leading surface 101 of the catch portions 62, 63 may be less than the radius 107 of the interior corners 109, 110 of the recesses 89, 90. The is effects a kinematic centering of the mounting plate 32 and thus the red dot sight assembly 42 on the slide and provides a repeatability of the centering and positioning such that re- zeroing each time the red dot sight assembly is not required. Other configurations of centering the mounting plate by the latch member are also contemplated. For example, the catch portions could be tapered and engage two rounded exterior entry corners of a recess or notch in the mounting plate. These configurations provide a kinematic coupling 120 of the latch member catch portion and mounting plate recess. Other geometric configurations would be available to those skilled in the art. Additionally, this disclosure includes embodiments of the slide utilizing crosswise dovetail recesses that receive dovetail male projections on the bottom side of the mounting plates, with a latching member integrated into the slide. Although not specifically illustrated, embodiments may include a single dovetail rail (or slot) on the plate receiving region of the slide.

Referring to Figure 13, in an embodiment, a bias to the latch member to the latched retention position may be provided with the spring 123 positioned forwardly of the latch member 133, with the latch member abutting against a shoulder 135 in the slide body 29 and the spring seated in a spring recess 136 defined in the slide body 29.

The components of the handgun, the mounting system, including the latch system may be formed conventionally from metals such as steel, stainless steel, aluminum, and other metals known in the art. Additionally, certain polymers may be utilized to form particular components. See examples in the patents incorporated herein by reference.

Referring to Figures 14 and 15, in an embodiment, the spring may be replaced by a rigid tube segment 141. The screw 60 extends through the tube segment, through the opening or bore 68 and is threadingly engaged with the latch member 59 at the threaded opening. The user tightens the screw pulling the latching member 59 into the retention position as shown in Figure 15. Loosening or removal of the screw 60 with respect to the latching member 59 allows the latching member to move to the release position where the catch portions are in alignment with the dovetail rails allowing removal of the mounting plate 32 and any attached red dot sight.

Referring to Figures 20-22, another embodiment is illustrated with a mounting plate 132 latched to the handgun slide 128 by way of the sliding latch member 137 that slides parallel to the axis of the handgun in slide slot 141 and barrel but has a bias forwardly so that the latch member is in the "normal" latch position, as illustrated in Figures 20 and 22. Figure 21 illustrates the latch member 137 with catch portion 138, 139 in alignment with the dovetail rails 140, 142 in a release position. A spring 143 positioned in the slot 144 biases the latch member forwardly. A screw 145 may secure the assembly together and retain the latch member and spring 143 within the slide slot. In embodiments, a handle 147 may extend laterally from the latch member through a second slot 148 in the slide. The handle is shown as a cylindrical rod shape but can be other shapes and could also, for example extend upwardly in embodiments through a slot in a portion of the sight mount 149 and the sight (not shown), or extend rearwardly to be grasped proximate the screw head 146, or the screw head itself may be graspable to pull the latch member rearwardly in embodiments.

Referring to Figure 23, in embodiments, a retail assemblage 150, comprises a semiautomatic handgun 152, with a slide 154 as described herein having crosswise dovetail connection means, a red dot sight 160, alternate mounting plates 162, 164 and a blank plate 166 for covering the plate mounting region when a red dot sight is not to be mounted, instructions 168, and packaging 170. The handgun may be as described above with removable iron sights.

Each of the additional figures and methods disclosed herein can be used separately, or in conjunction with other features and methods, to provide improved devices and methods for making and using the same. Therefore, combinations of features and methods disclosed herein

may not be necessary to practice the disclosure in its broadest sense and are instead disclosed merely to particularly describe representative and preferred embodiments.

Various modifications to the embodiments may be apparent to one of skill in the art upon reading this disclosure. For example, persons of ordinary skill in the relevant art will recognize that the various features described for the different embodiments can be suitably combined, uncombined, and re-combined with other features, alone, or in different combinations. Likewise, the various features described above should all be regarded as example embodiments, rather than limitations to the scope or spirit of the disclosure. For example, the sight mount system and components, illustrated on a slide for semiautomatic handguns could also be utilized on pistols, such as revolvers, or on long guns such as rifles and shotguns. See for example, 9,810,496 and 11,047,653 owned by the applicant herein. Said patents are incorporated by reference for all purposes. Embodiments may utilize, for example only a single dovetail rail. In embodiments the dovetail rail or rails may be on the sight mount with dovetail slots in the handgun or receiver, the sliding latch member having slots that then align with dovetail slots in the slide or receiver when in the release position. In embodiments, sight unit may have the dovetail slots therein rather than in the mounting plate that attaches to the red dot sight. Additionally, "red dot" sights referenced herein may have dots that are not red, as red dot sights refer more generically to sights with a reflective surface upon which a light emitting diode of any desired color is reflected.

Persons of ordinary skill in the relevant arts will recognize that various embodiments can comprise fewer features than illustrated in any individual embodiment described above. The embodiments described herein are not meant to be an exhaustive presentation of the ways in which the various features may be combined. Accordingly, the embodiments are not mutually exclusive combinations of features; rather, the claims can comprise a combination of different individual features selected from different individual embodiments, as understood by persons of ordinary skill in the art.

Any incorporation by reference of documents above is limited such that no subject matter is incorporated that is contrary to the explicit disclosure herein. Any incorporation by reference of documents above is further limited such that no claims included in the documents are incorporated by reference herein. Any incorporation by reference of documents above is yet further limited such that any definitions provided in the documents are not incorporated by reference herein unless expressly included herein.

References to "embodiment(s)", "disclosure", "present disclosure", "embodiment(s) of the disclosure", "disclosed embodiment(s)", and the like contained herein refer to the

specification (text, including the claims, and figures) of this patent application that are not admitted prior art.

For purposes of interpreting the claims, it is expressly intended that the provisions of 35 U.S.C. 112(f) are not to be invoked unless the specific terms “means for” or “step for” are recited in the respective claim.

CLAIMS

1. A semiautomatic handgun with a slide, the slide adapted to receive a sight mounting plate, the slide comprising a slide body having a top side with an upwardly facing surface, a pair of side surfaces, a forward barrel end and a rearward end, a sight mounting plate receiving region defined in the slide at the top side positioned towards the rearward end of the slide, the slide body having a pair of male dovetail connectors extending in a side to side direction at the top upwardly facing surface, a forward rearward slot defined in the body at the sight mounting plate the slot extending through each of the pair of male dovetail connectors, the slide further comprising a latch member conformingly sized to and slidably positioned in the slot, the latch member having a forward end, a rearward end, and an upwardly facing surface flush with the upwardly facing surface at the sight mounting plate receiving region and further having a pair of upward projections, the latch member movable between a first retention position where the two upward projections are not in alignment with the pair of male dovetail connectors and a second release position where the upward projections are in alignment with the pair of mail dovetail connectors, the latch member the sight mounting plate having a pair of female dovetail connectors sized to cooperate with the pair of male dovetail connectors, the sight mounting plate slidingly receivable on the slide body at the sight mounting plate receiving region when the latch member is in the second release position, whereby when the sight mounting plate is received and the latch member is moved to the first retention position the sight mounting plate is locked onto the slide body.

2. The semiautomatic handgun of claim 1, wherein the latch member is biased toward the first retention position and wherein the latch member may be moved from the first retention position to the second release position by pushing an exposed member at the rear end of the slide.

3. The semiautomatic handgun of claim 2, wherein the slide further comprises a threaded member extending into the rearward end of the latch member, the threaded member having a head exposed at the rearward end of the slide, the body having a forward rearward extending bore for receiving the threaded member.

4. The semiautomatic handgun of claim 3, wherein the slide body defines a shoulder in the forward rearward bore and wherein the bias is provided by a spring captured between the shoulder and the head of the threaded member.

5. The semiautomatic handgun of any of claims 1-4, wherein the latching member is movable from the first retention position to the second release position by manipulation of the latching member or a member exposed at the rearward end of the slide body.

6. The semiautomatic handgun of claim 5, wherein the latching member is movable from the first retention position to the second release position by pushing an exposed surface at the rearward end of the slide body.

7. The semiautomatic handgun of claim 1, wherein the latching member is secured in place in the first retention position by a threaded member in the slide body.

8. The semiautomatic handgun of claim 7, wherein the threaded member extends forwardly from the rearward end of the slide body and is threadably engaged with the latching member.

9. The semiautomatic handgun of claim 1, wherein at least one of the upwardly extending projections of the latching member has a rearwardly directed positioning shape that cooperates with a cooperating recess in the sight mounting plate.

10. The semiautomatic handgun of any of claims 1-9, further comprising a red dot sight mounted to the sight mounting plate.

11. The semiautomatic handgun of any of claims 1-10, wherein the latching member and the sight mounting plate form a kinematic coupling that repeatedly positions the sight mounting plate in the same location.

12. A semiautomatic handgun retail assemblage packaged for retail sales, the handgun with the slide of any of claims 1-11, the kit further comprising a plurality of plates receivable by the handgun slide at the mounting plate receiving region, the plates including a red dot sight mounting plate and a blank plate not configured to receive a red dot sight.

13. The semiautomatic handgun retail assemblage of claim 12, further comprising a red dot sight.

14. A semiautomatic handgun comprising a handgun body with a slide mounted thereon, the slide configured for receiving a red dot sight assembly, the slide comprising:
a slide body with a forward barrel end, a rearward end, a top side, a left side and a right side, the slide body having a rearwardly positioned crosswise dovetail connection portion at a sight mounting region of the slide for receiving a red dot sight assembly having a cooperating dovetail connection portion, the slide further comprising a latching member slidingly positioned in the slide body with a retention position where the red dot sight assembly cannot be removed when the red dot sight assembly is attached to the slide, and a release position where the red dot sight assembly can be removed from the slide body.

15. The semiautomatic handgun of claim 14, wherein the latching member has a latching projection with a centering profile that seats in a cooperating recess in the red dot sight assembly thereby providing a repeatable left to right positioning of the red dot sight assembly on the handgun slide.

16. The semiautomatic handgun of claim 15, wherein the centering profile has rounded corners when viewed from above that engage surfaces defining the recess in the red dot sight assembly.

17. The semiautomatic handgun of claim 14, wherein the dovetail connection portion is a male dovetail, and wherein the latching projection, when the latching member is in the release position, is positioned within the profile of the male dovetail when viewed from the left or right side of the slide.

18. The semiautomatic handgun of claim 17, wherein the slide has two dovetail connection portions configured as male dovetails and the latching member has two latching projections with each latching projection having a centering profile that engages a respective recess in the red dot sight assembly.

19. The semiautomatic handgun of any one of claim 14-18, wherein the red dot sight assembly comprises a sight mounting plate having the one or the pair of dovetail connection portions integral with the sight mounting plate, and the red dot sight assembly further comprises a red dot sight unit attached with threaded connectors to the sight mounting plate.

20. The semiautomatic handgun of claim 19, wherein the latching member is U-shaped.

21. A firearm with a receiver having a slot with a forward and rearwardly slidable latch member therein, the slot at a top side of the receiver, the receiver having a pair of side to side extending dovetail rails, the latch member having a pair of latch catches that are unitary with the latch member, the latch member movable between a release position whereby the pair of latch catches are in alignment with the pair of side by side dovetail rails allowing a sight mount with a pair of dovetail slots conforming to the pair of side to side dovetail rails to be slid laterally on or off of the dovetail rails.

22. A retail assemblage comprising the firearm of claim 21 and further comprising packaging, at least one sight mount, at least one red dot sight, and instructions for mounting and removing the sight to the sight mount and the sight mount to the firearm.

23. A slide for a semiautomatic handgun, the slide adapted to receive a sight mounting plate, the slide comprising a slide body having a top side with an upwardly facing surface, a pair of side surfaces, a forward barrel end and a rearward end, a sight mounting plate receiving region defined in the slide at the top side positioned towards the rearward end of the slide, the slide body having a pair of male dovetail connectors extending in a side to side direction at the top upwardly facing surface, a forward rearward slot defined in the body at the sight mounting plate the slot extending through each of the pair of male dovetail connectors, the slide further comprising a latch member conformingly sized to and slidably positioned in the slot, the latch member having a forward end, a rearward end, and an upwardly facing surface flush with the upwardly facing surface at the sight mounting plate receiving region and further having a pair of upward projections, the latch member movable between a first retention position where the two upward projections are not in alignment with the pair of male dovetail connectors and a second release position where the upward projections are in alignment with the pair of mail dovetail connectors, the latch member the sight mounting plate having a pair of female dovetail connectors sized to cooperate with the pair of male dovetail connectors, the sight mounting

plate slidingly receivable on the slide body at the sight mounting plate receiving region when the latch member is in the second release position, whereby when the sight mounting plate is received and the latch member is moved to the first retention position the sight mounting plate is locked onto the slide body.

24. The slide for a semiautomatic handgun of claim 23, wherein the latch member is biased toward the first retention position and wherein the latch member may be moved from the first retention position to the second release position by pushing an exposed member at the rear end of the slide.

25. The slide of claim 24, wherein the slide further comprises a threaded member extending into the rearward end of the latch member, the threaded member having a head exposed at the rearward end of the slide, the body having a forward rearward extending bore for receiving the threaded member.

26. The slide of claim 25, wherein the slide body defines a shoulder in the forward rearward bore and wherein the bias is provided by a spring captured between the shoulder and the head of the threaded member.

27. The slide of any of claims 23-26, wherein the latching member is movable from the first retention position to the second release position by manipulation of the latching member or a member exposed at the rearward end of the slide body.

28. The slide of claim 27, wherein the latching member is movable from the first retention position to the second release position by pushing an exposed surface at the rearward end of the slide body.

29. The slide of claim 23, wherein the latching member is secured in place in the first retention position by a threaded member in the slide body.

30. The slide of claim 29, wherein the threaded member extends forwardly from the rearward end of the slide body and is threadably engaged with the latching member.

31. The slide of claim 23, wherein at least one of the upwardly extending projections of the latching member has a rearwardly directed positioning shape that cooperates with a cooperating recess in the sight mounting plate.

32. The slide of any of claims 23-31, further comprising a red dot sight mounted to the sight mounting plate.

33. A slide for a handgun having a latching mechanism for receiving red dot sight assembly, the slide having a latching mechanism having single motion release for the red dot sight assembly and further having a kinematic coupling for providing a repeatable left to right positioning of the red dot sight assembly on the handgun slide.

34. The slide for a handgun of claim 33, wherein the slide is on the handgun.

35. The slide of claim 33 or claim 34 wherein the latching mechanism comprising a sliding latch member with a latch catch that captures a mounting plate of the red dot sight assembly.

36. The slide of claim 33 or claim 34 wherein the latching mechanism comprising a sliding latch member with a pair of latch catches that capture a mounting plate of the red dot sight assembly.

37. The slide of claim 36, wherein the latch catches are aligned with a lengthwise axis of the slide.

38. The slide of any of claims 33-37 wherein the latch mechanism comprises a latch member movable forward and rearwardly on the slide.

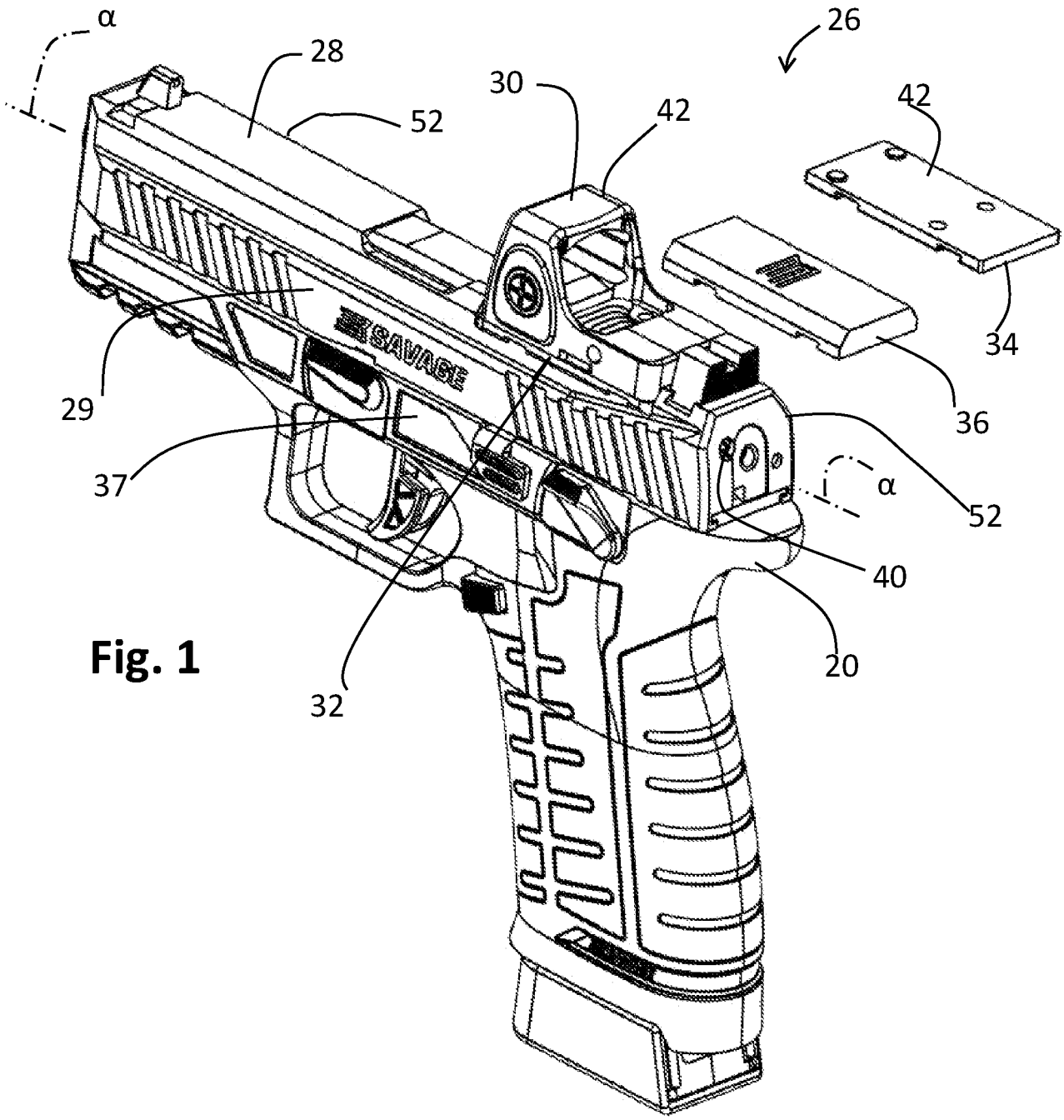


Fig. 1

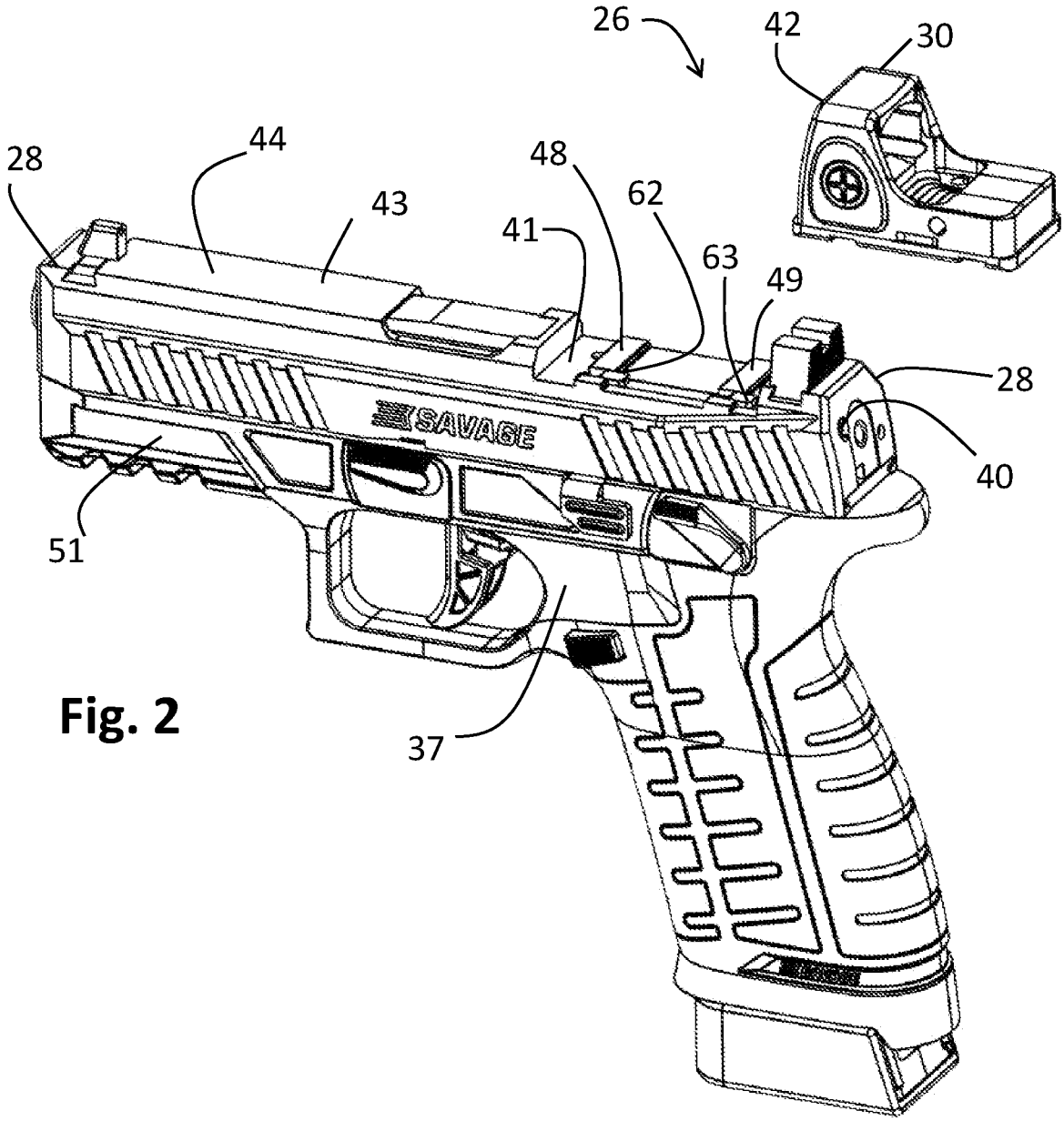


Fig. 2

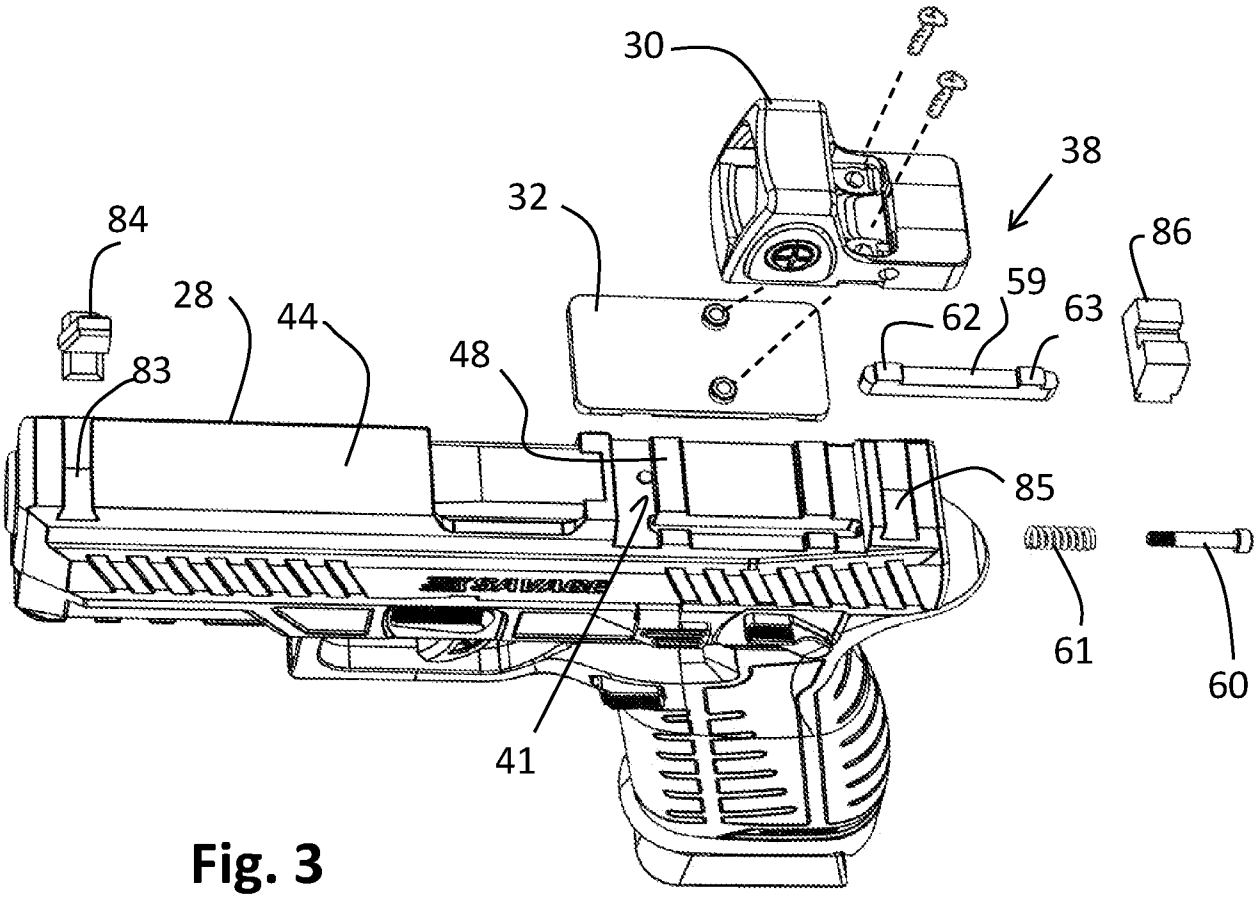

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Fig. 3

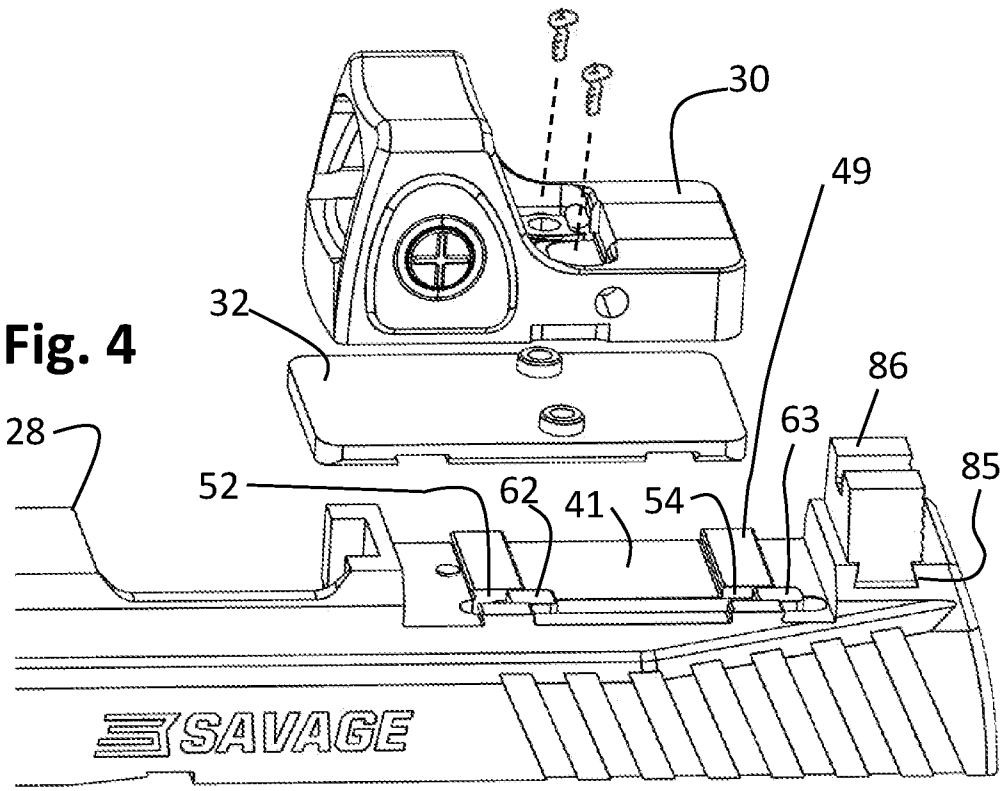

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Fig. 4

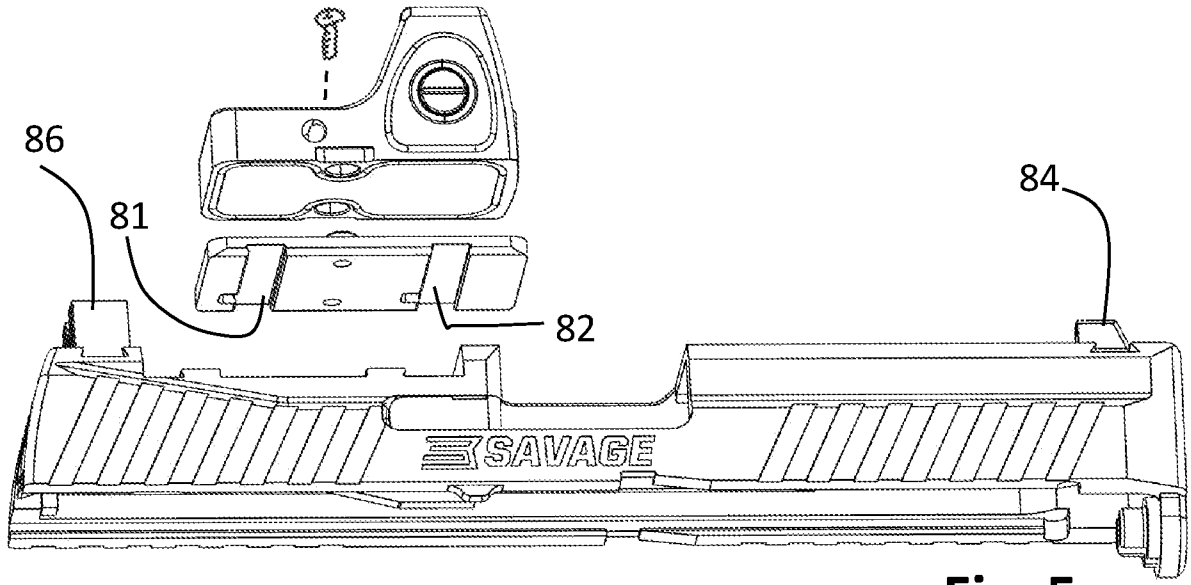


Fig. 5

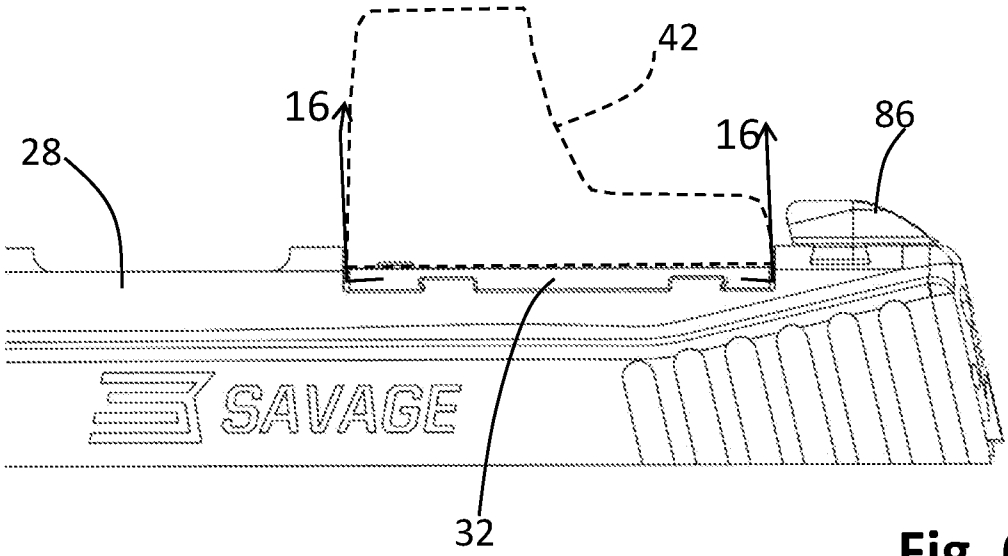


Fig. 6

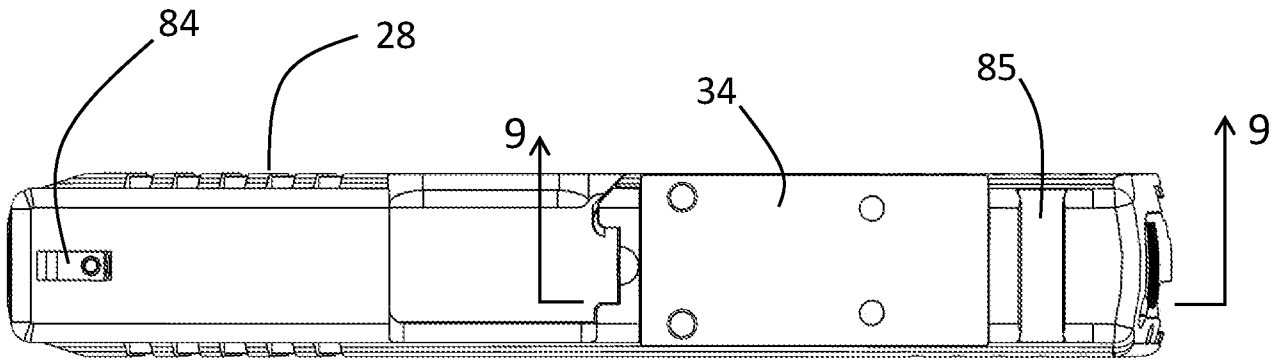


Fig. 7

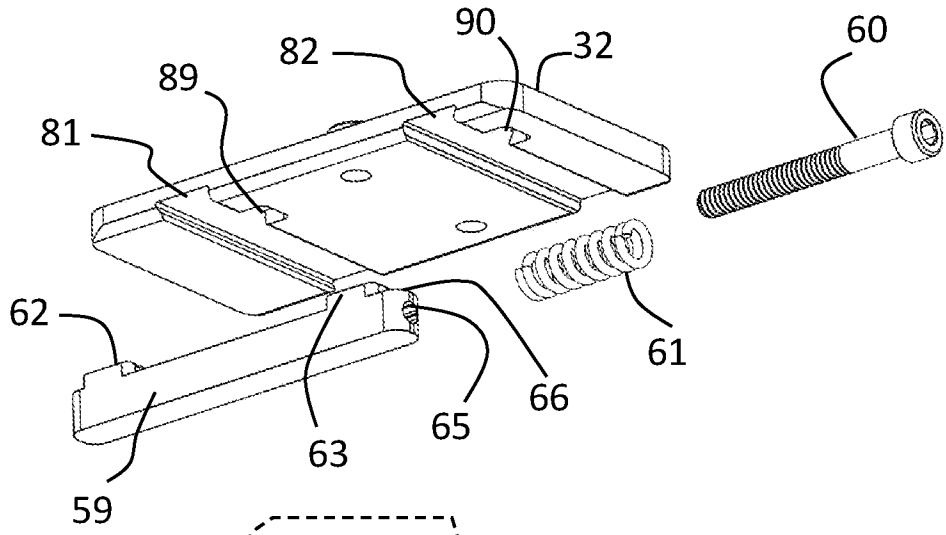


Fig. 8

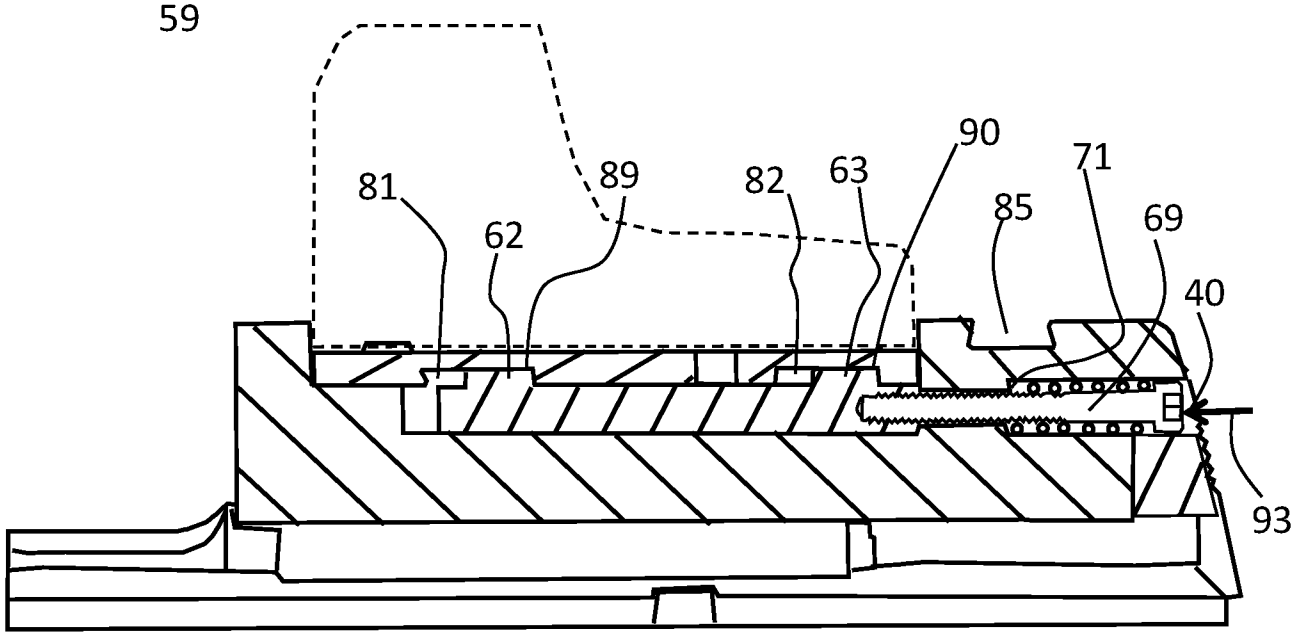


Fig. 9

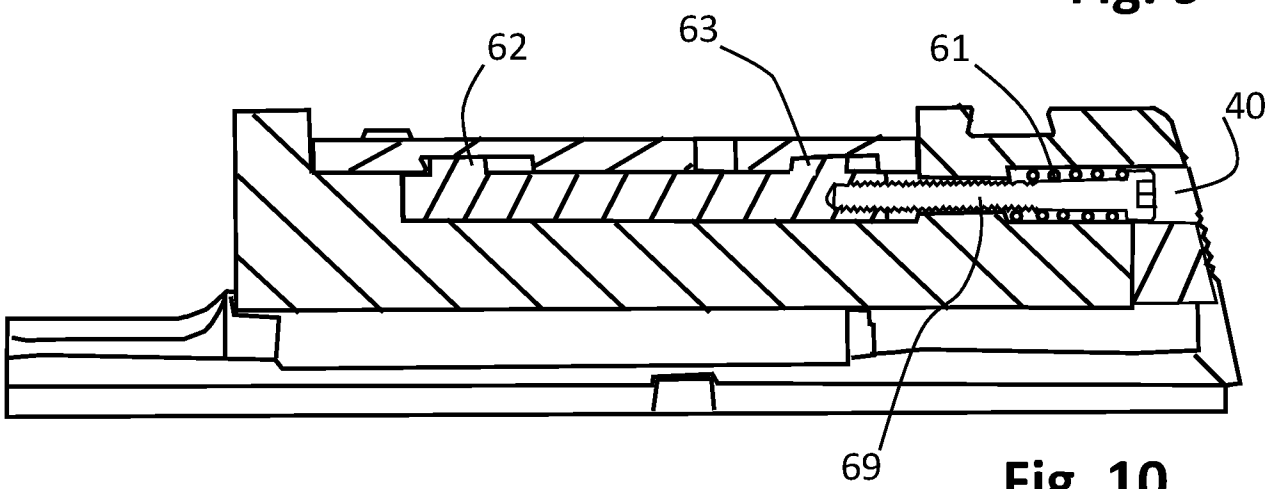


Fig. 10

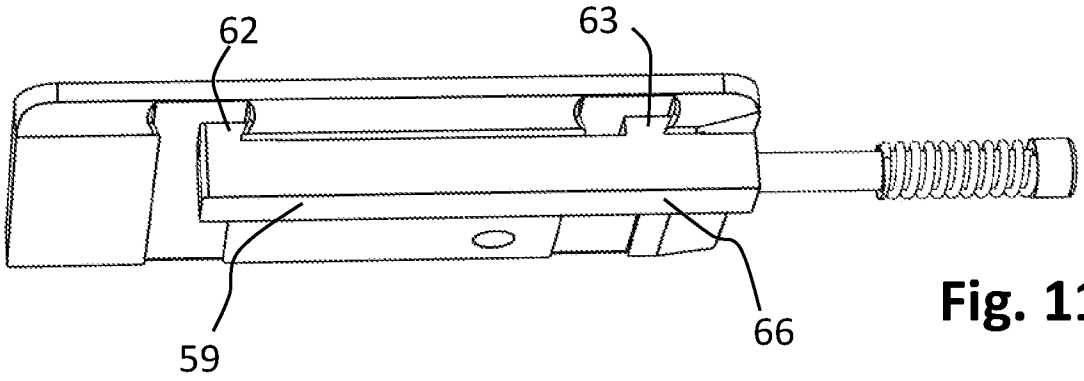


Fig. 11

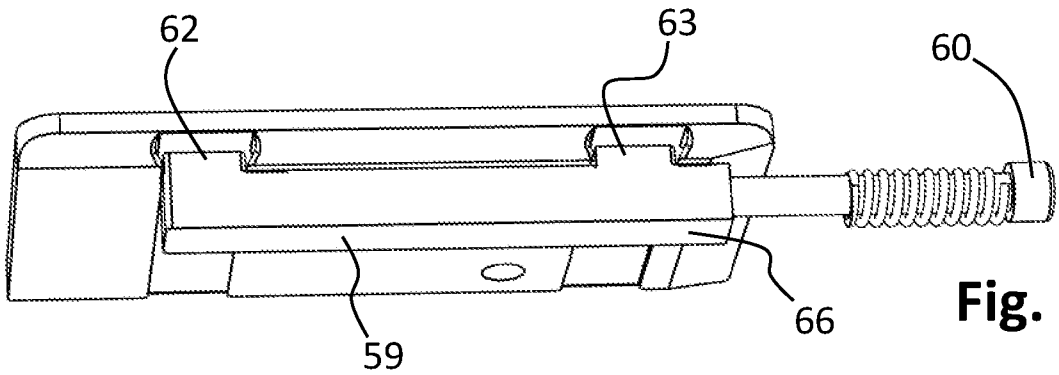


Fig. 12

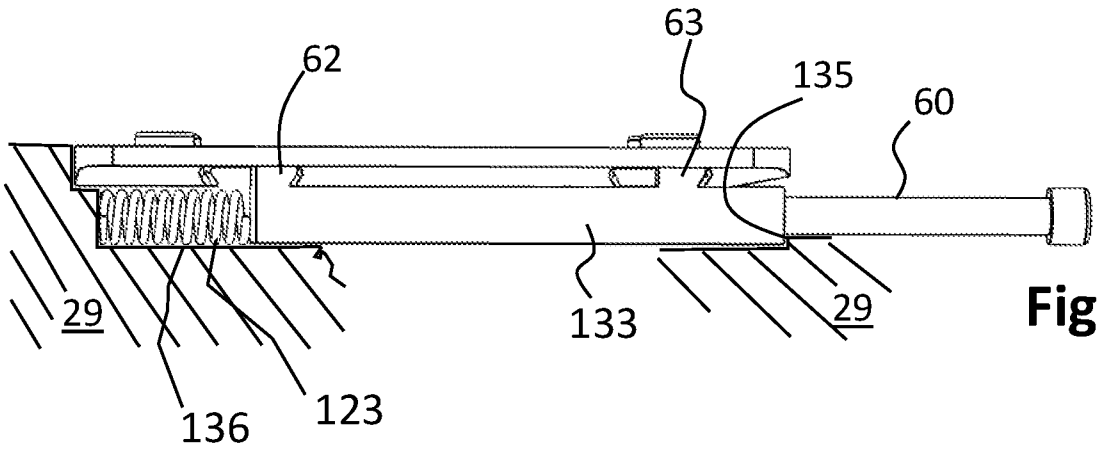


Fig. 13

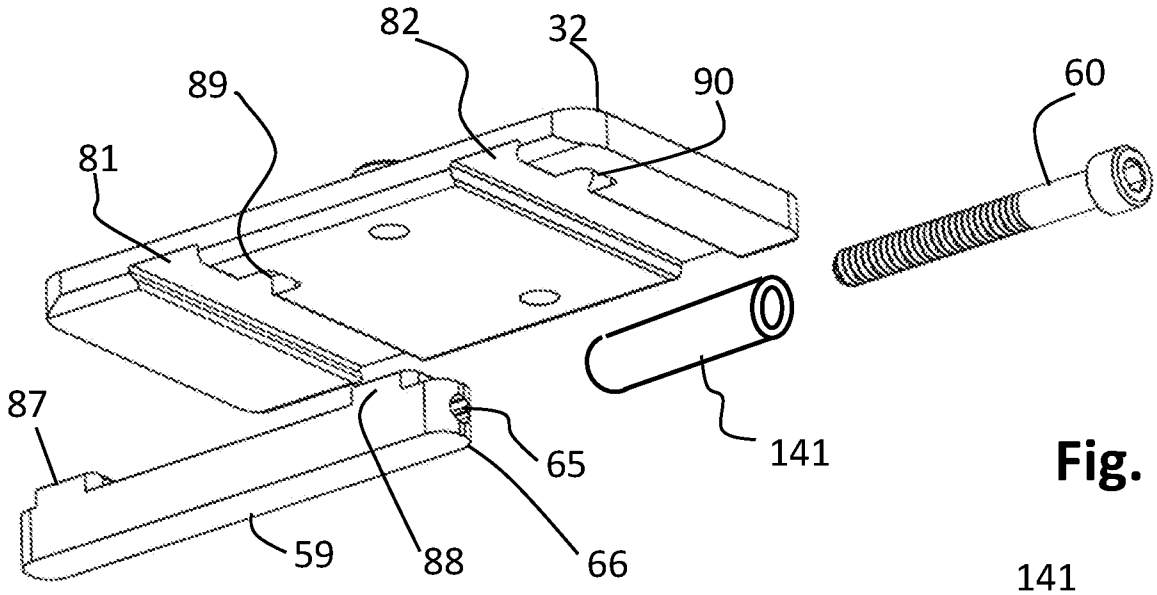


Fig. 14

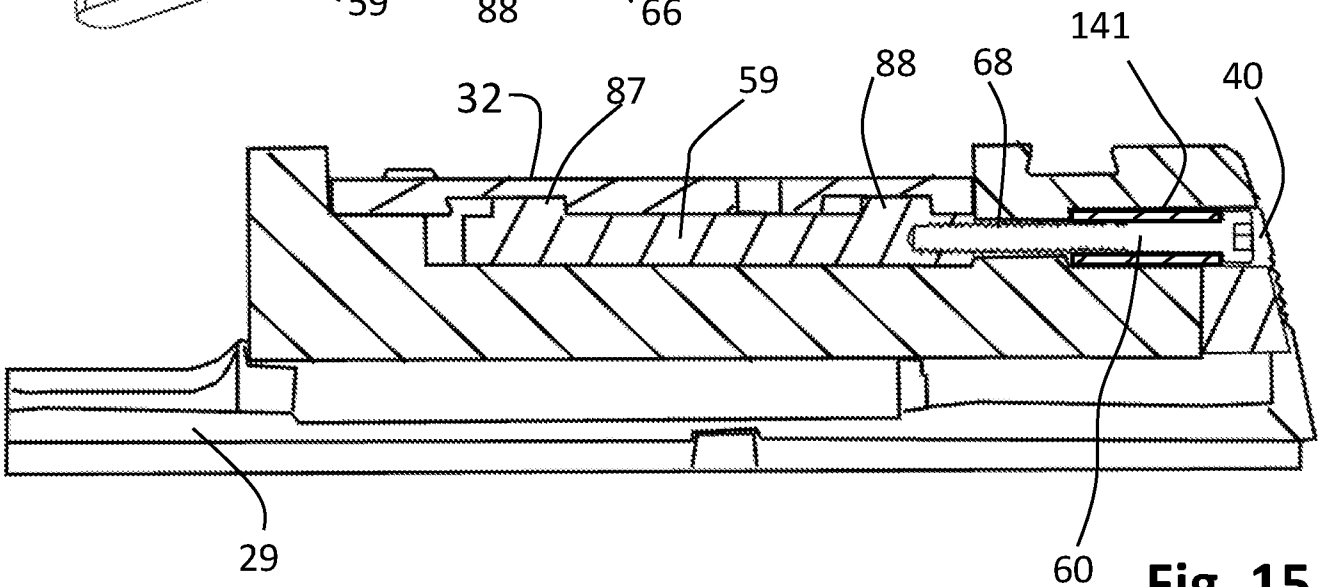


Fig. 15

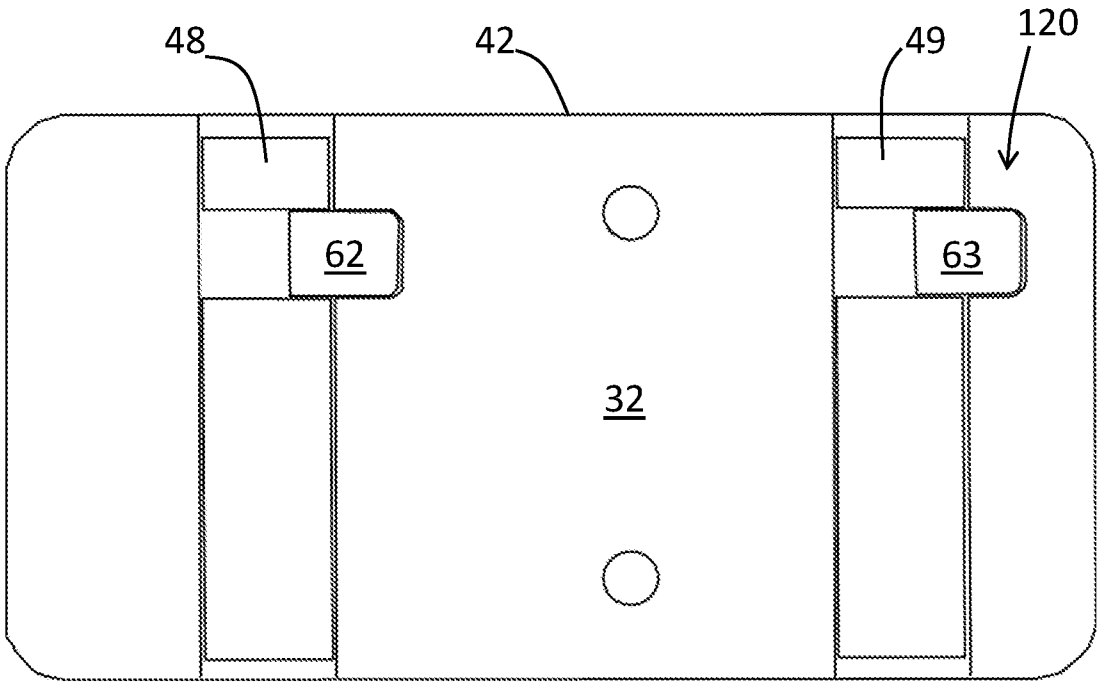


Fig. 16

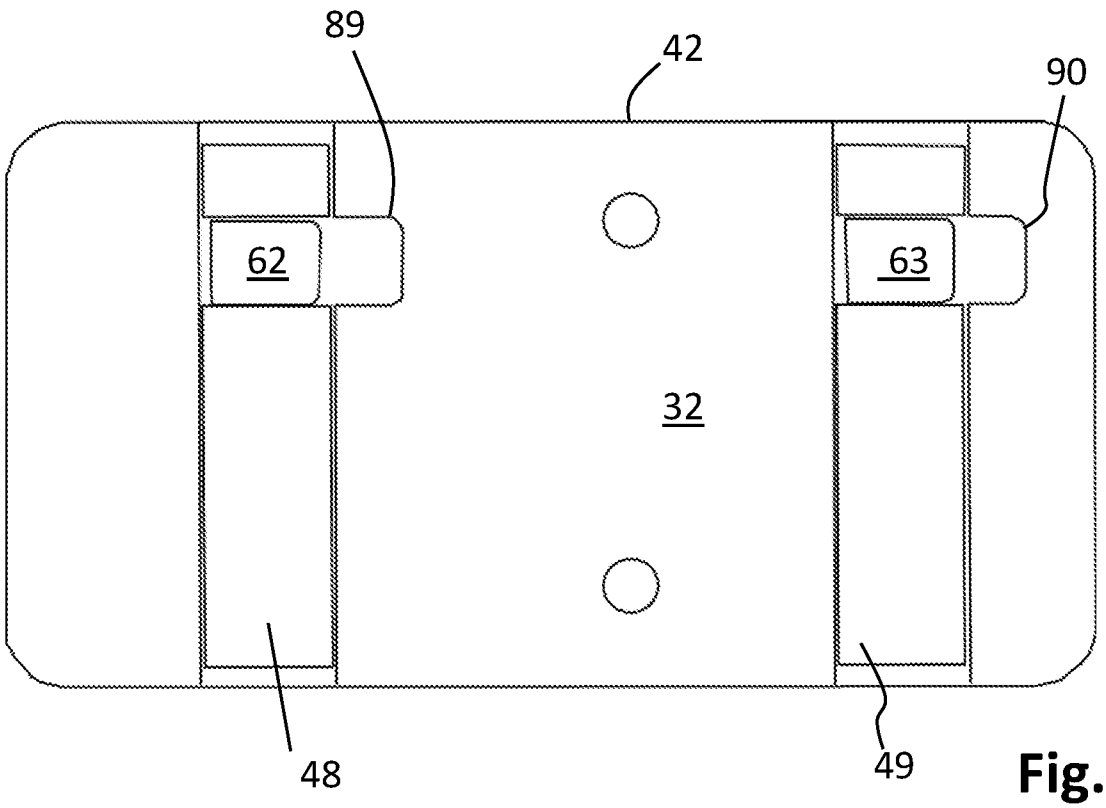


Fig. 17

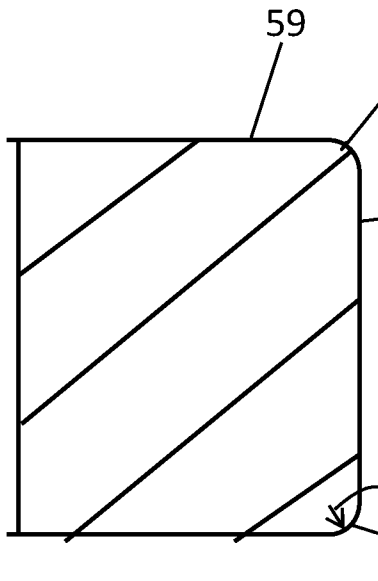


Fig. 18

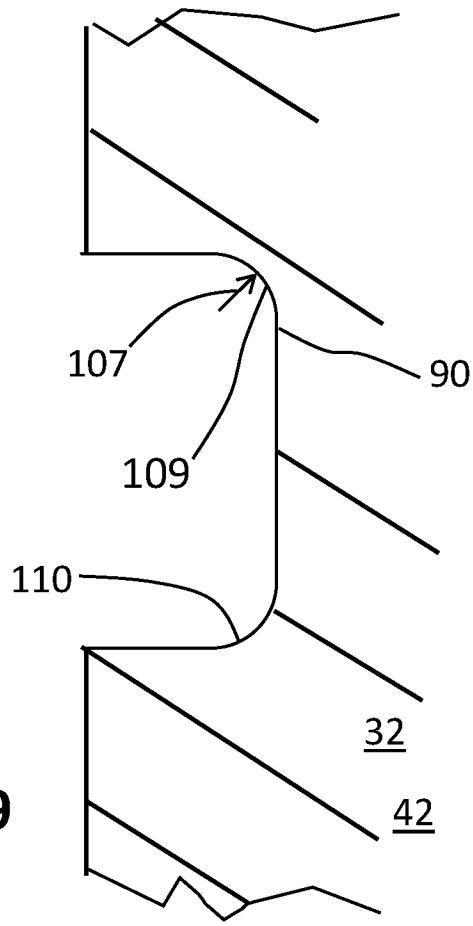


Fig. 19

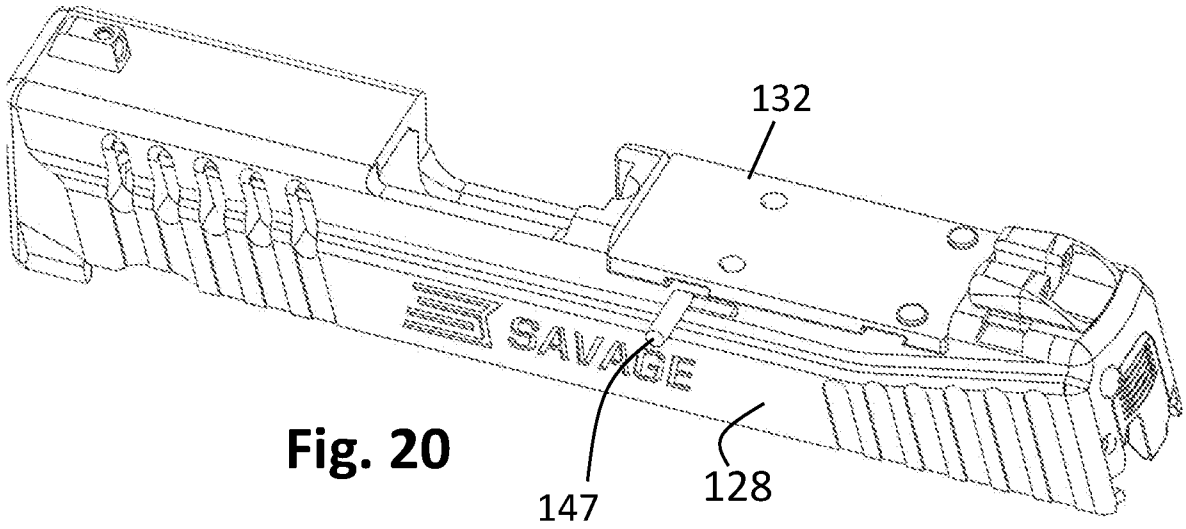


Fig. 20

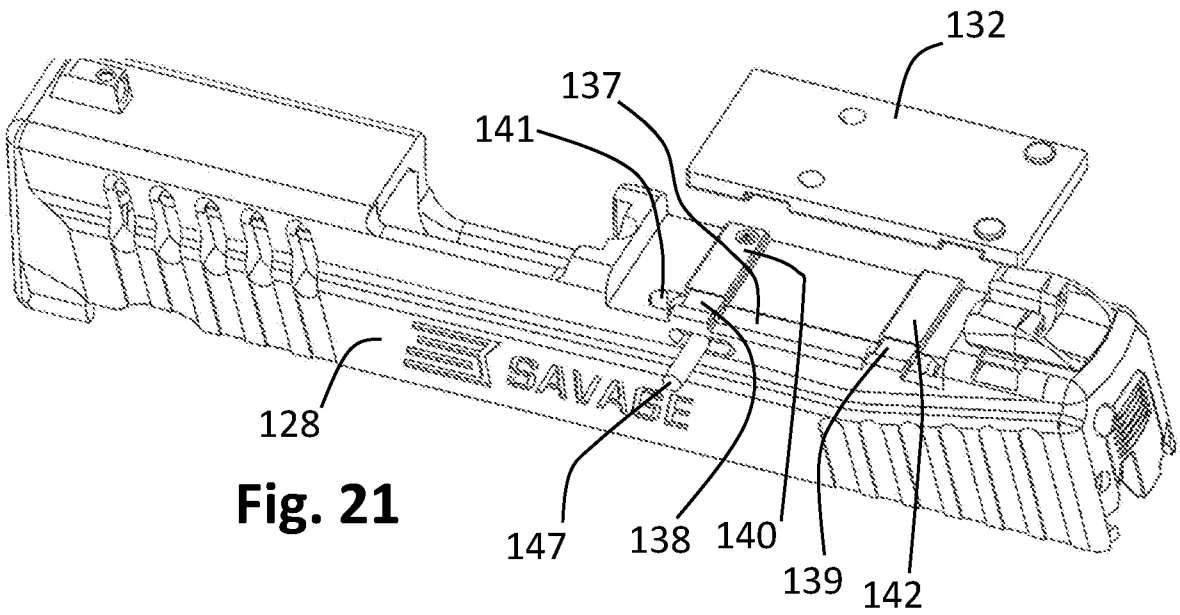


Fig. 21

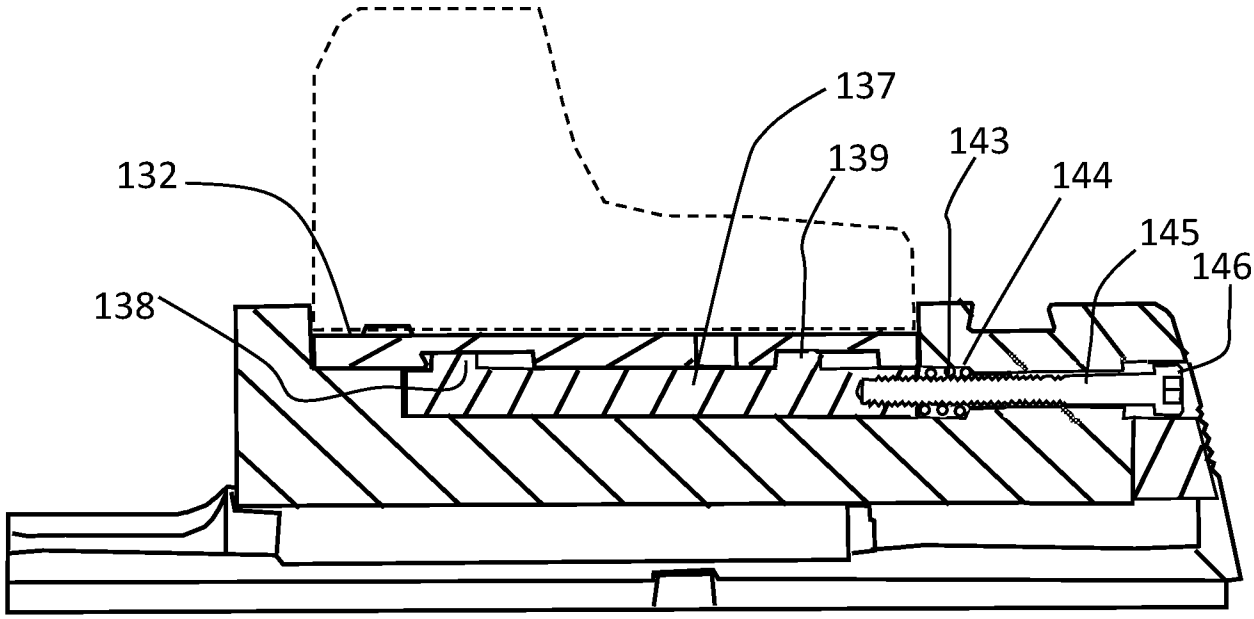


Fig. 22

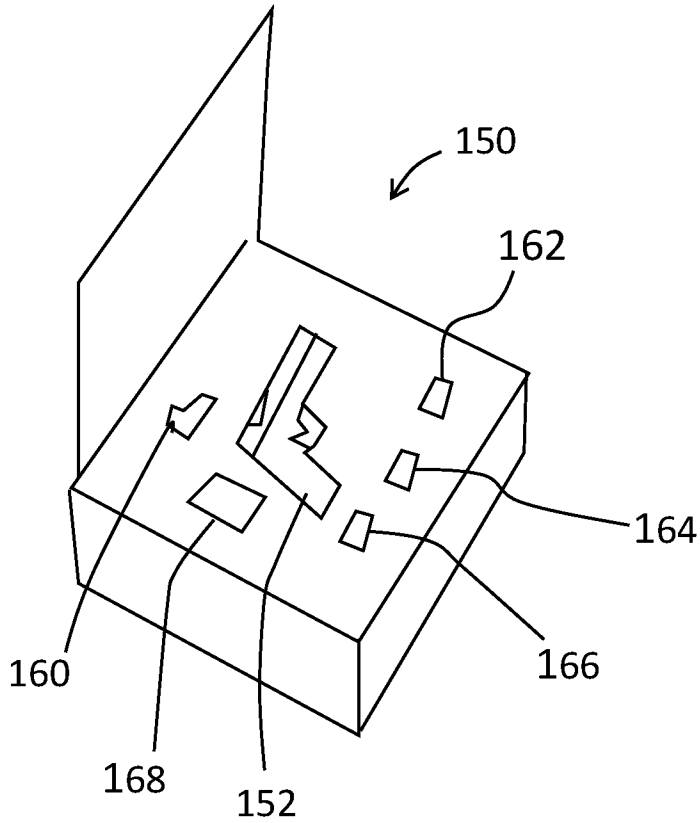


Fig. 23

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 23/15777

A. CLASSIFICATION OF SUBJECT MATTER

IPC - INV. F41G 11/00 (2023.01)
ADD. F41G 1/16 (2023.01)

CPC - INV. F41G 11/003
ADD. F41G 1/16, F41G 11/004

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
See Search History document

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
See Search History document

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
See Search History document

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y --- A	US 10,563,955 B2 (MEPROLIGHT (1990) LTD.) 18 February 2020 (18.02.2020), entire document, especially Fig 1-3B, 5; col 1, ln 50-54; col 4, ln 3-6, 13-16, 21-26, 30-33, 45-62; col 5, ln 1-3, 8-20	33-34 --- 1-9, 14-31, 35-37
Y --- A	US 2013/0219767 A1 (PETERSON et al.) 29 August 2013 (29.08.2013), entire document, especially Fig 4-5, 9; para [0038]-[0040], [0043]	33-34 --- 1-9, 14-31, 35-37
A	US 3,483,623 A (KRUZELL) 16 December 1969 (16.12.1969), entire document, especially Fig 1-8; col 2, ln 25-31, 34-38, 50-56, 59-62, 70-71; col 3, ln 1-4	1-9, 14-31, 35-37
A	US 2022/0034629 A1 (STURM, RUGER & COMPANY, INC.) 03 February 2022 (03.02.2022), entire document	1-9, 14-31, 33-37
A	US 8,276,307 B2 (DEROS) 02 October 2012 (02.10.2012), entire document	1-9, 14-31, 33-37

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"D" document cited by the applicant in the international application
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
10 May 2023	JUN 21 2023
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-8300	Authorized officer Kari Rodriquez Telephone No. PCT Helpdesk: 571-272-4300

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 23/15777

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☒ Claims Nos.: 10-13, 32, and 38
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☐ No protest accompanied the payment of additional search fees.