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Storch

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(54) **FIREARM ACCESSORY INTERCHANGEABLE MOUNT SYSTEM**

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(22) Filed: **Jan. 10, 2018**

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(51) **Int. Cl.**

F41G 11/00	(2006.01)
F41A 3/66	(2006.01)
F41C 27/00	(2006.01)

(52) **U.S. Cl.**

CPC ***F41G 11/003*** (2013.01); ***F41A 3/66*** (2013.01); ***F41C 27/00*** (2013.01); ***F41G 11/001*** (2013.01)

(58) **Field of Classification Search**

CPC F41C 27/00; F41G 11/003; F41G 11/004; F41G 1/387

See application file for complete search history.

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Primary Examiner — Benjamin P Lee

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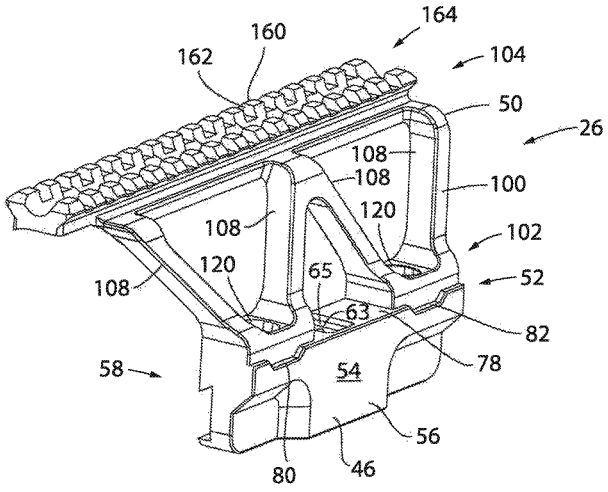
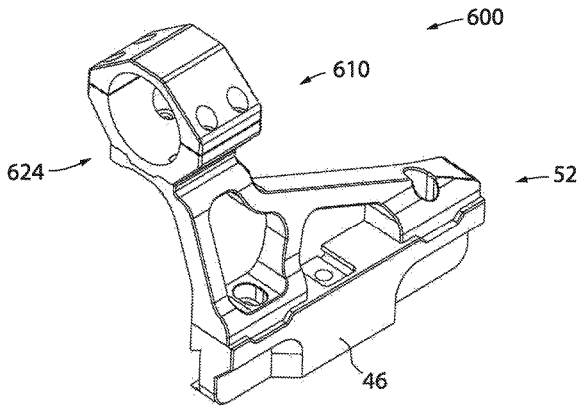
(57) **ABSTRACT**

A system or assembly for securing accessories to an underlying firearm assembly. The accessory mounting assembly includes a base that is constructed to be secured to a mount plate that is securable to an underlying firearm. An accessory support is securable to the base and moveable in a horizontal lateral direction relative thereto. An engagement or interface arrangement is provided between the base and the accessory support such that the accessory support can be translated in a lateral direction that is orthogonal to a bore of the underlying firearm and is constructed to provide vertical association of discrete accessory supports relative to the base.

20 Claims, 13 Drawing Sheets





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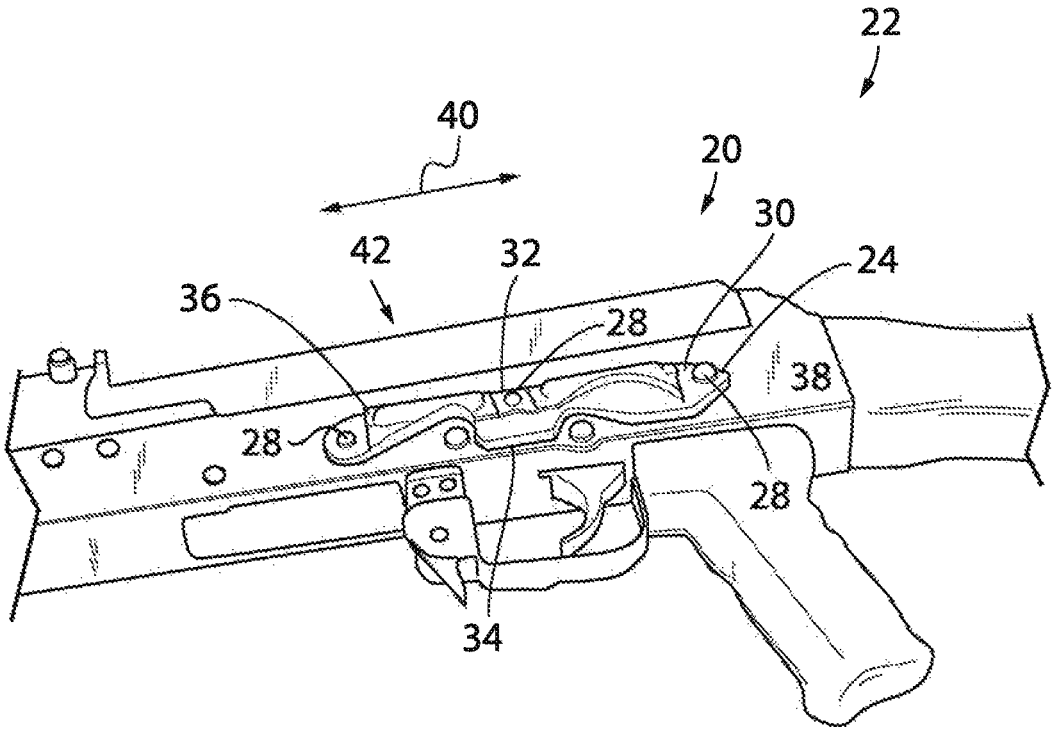

FIG. 1

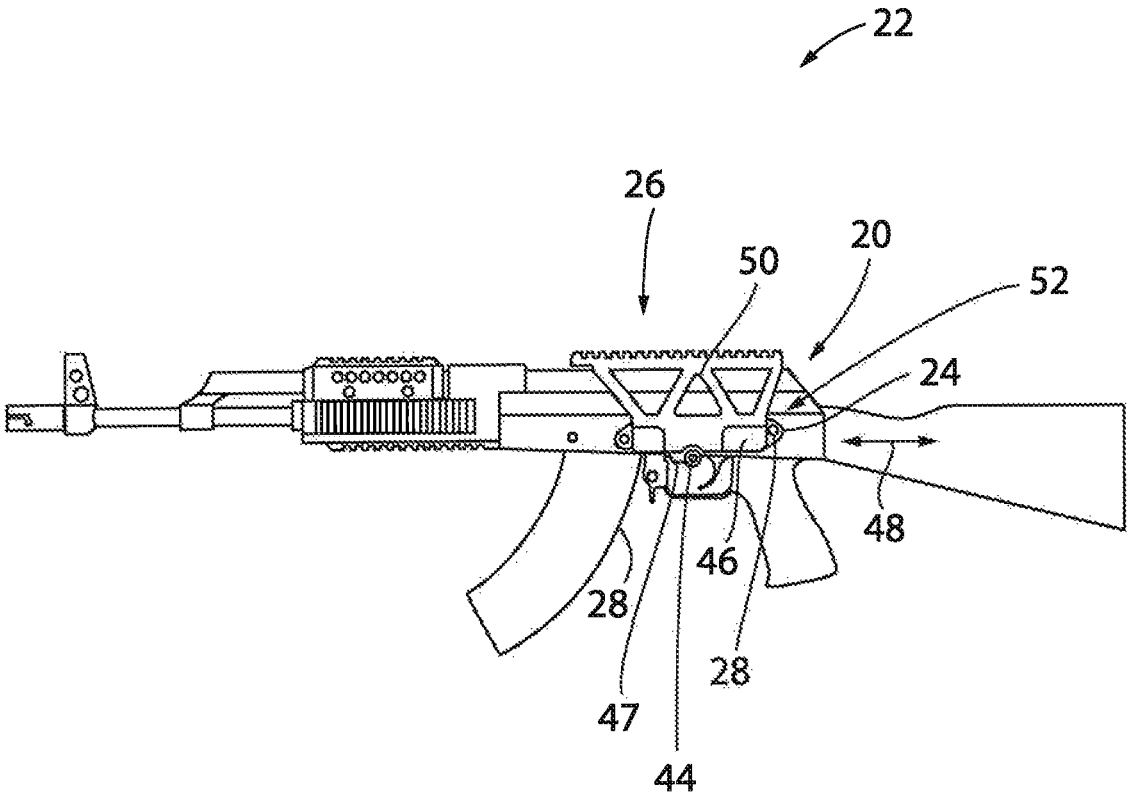

FIG. 2

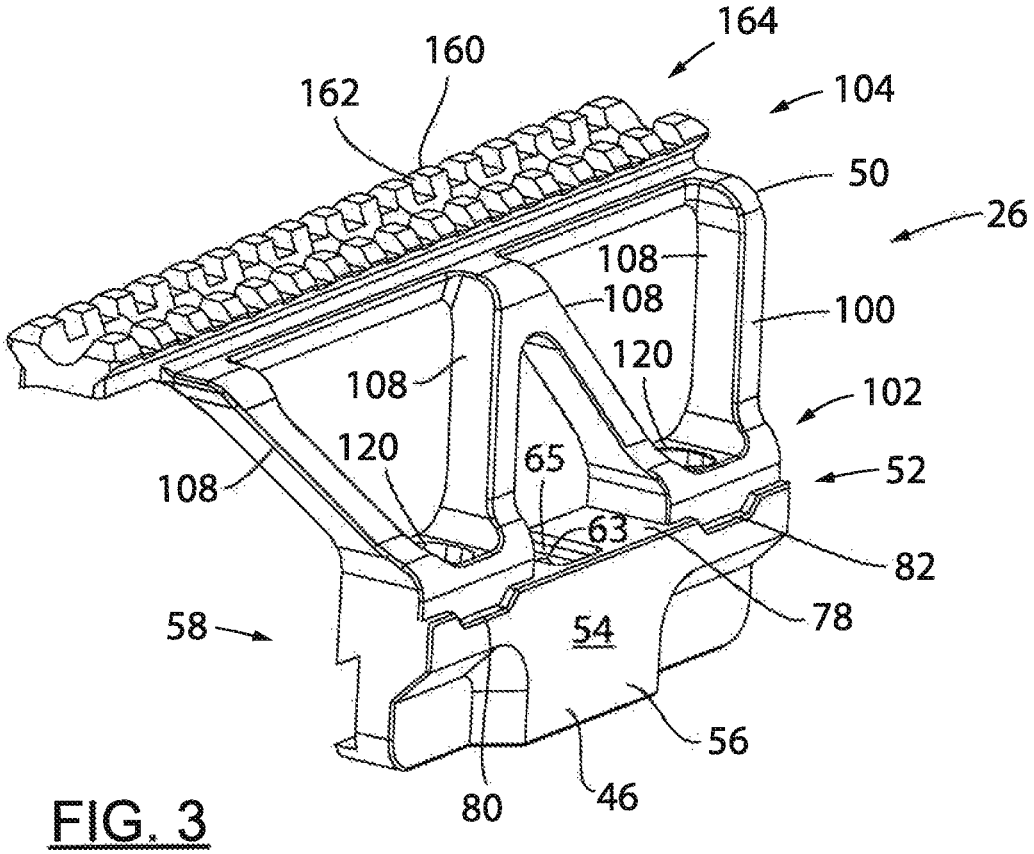
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FIG. 3

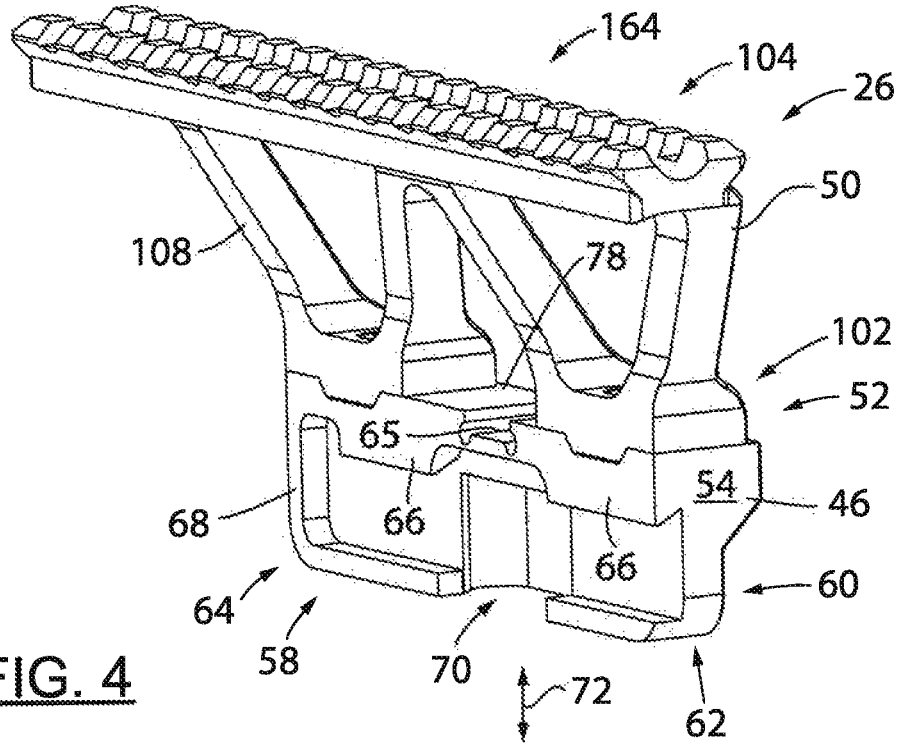
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FIG. 4

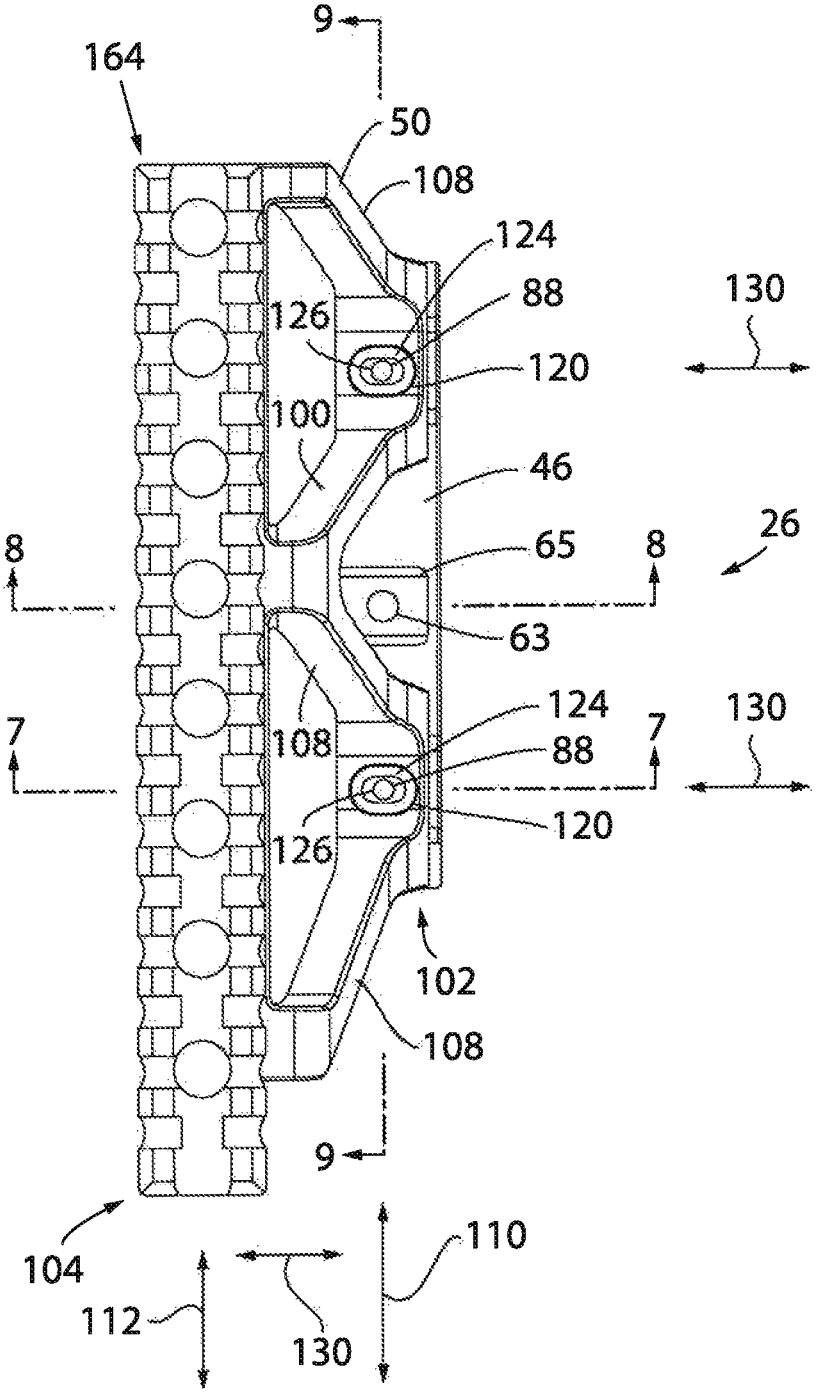
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FIG. 5

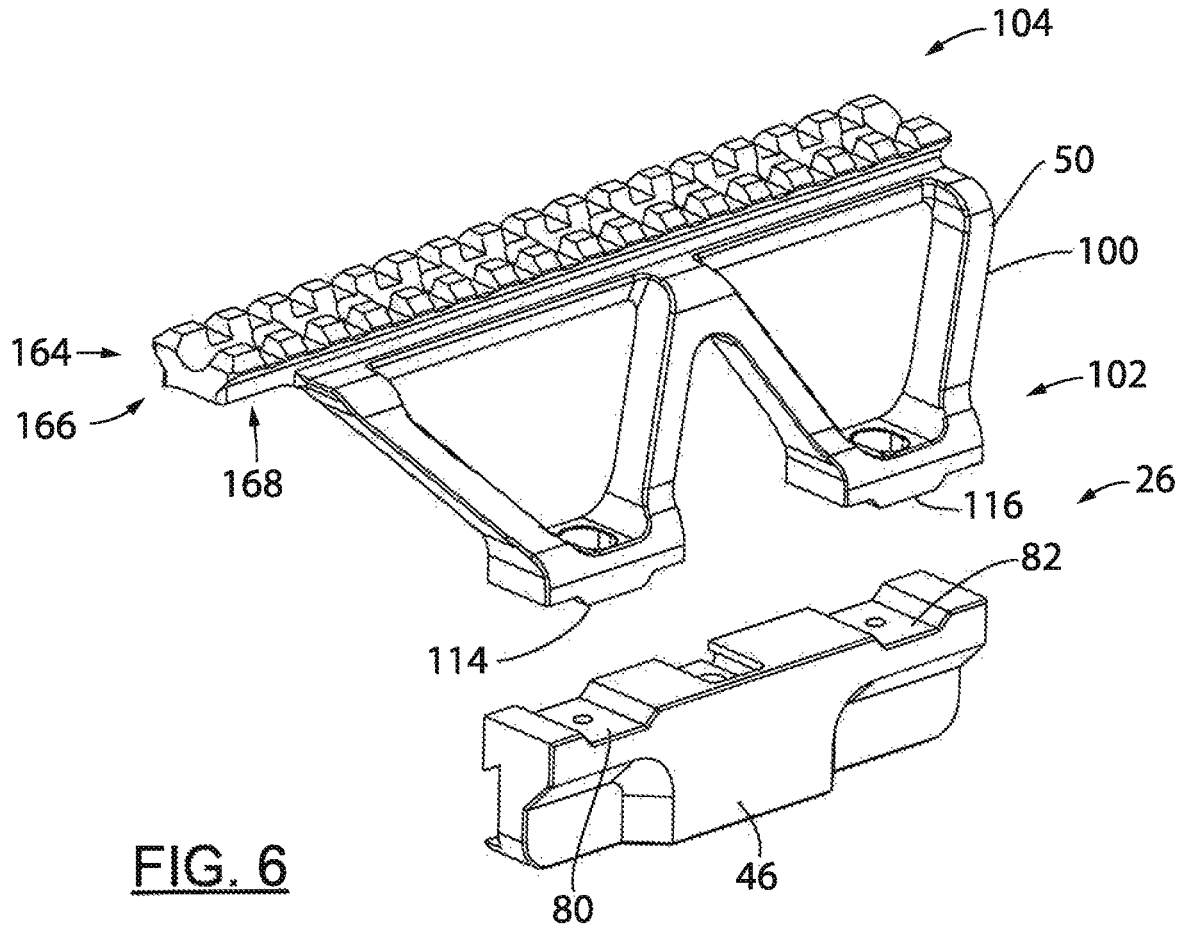
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FIG. 6

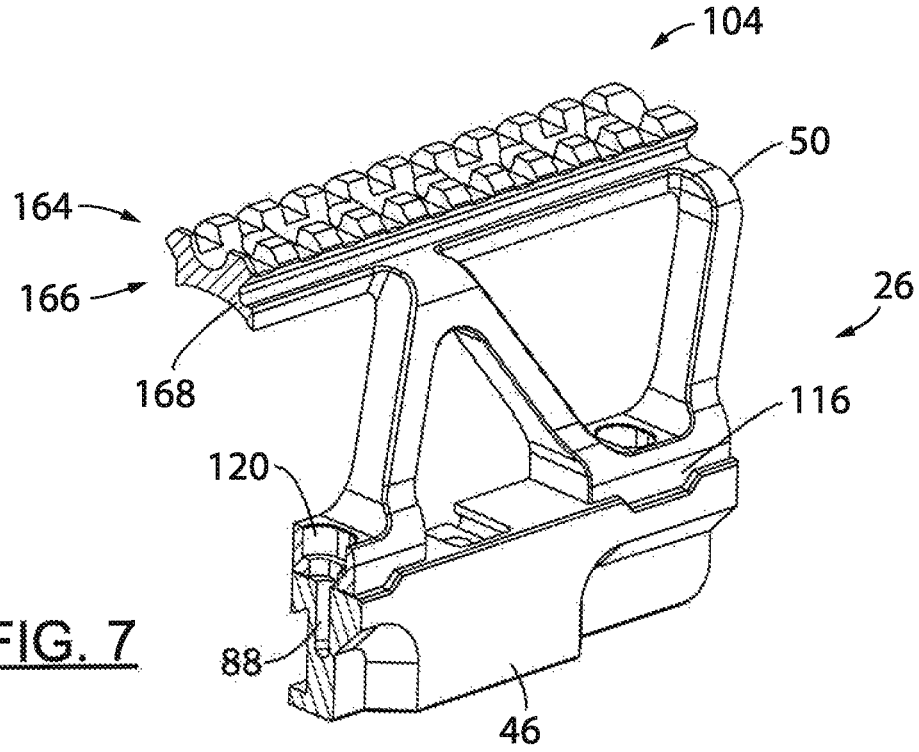
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FIG. 7

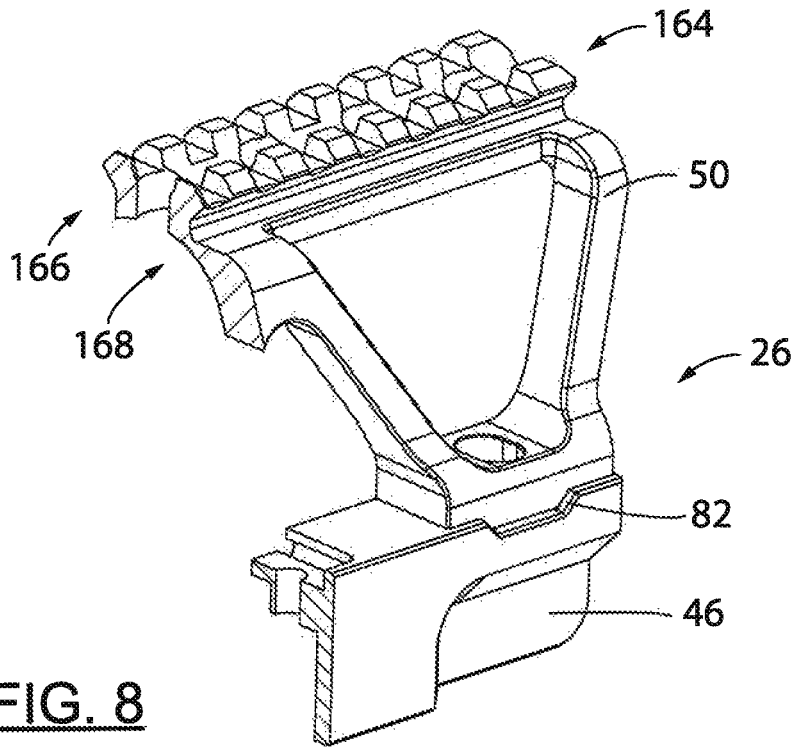
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FIG. 8

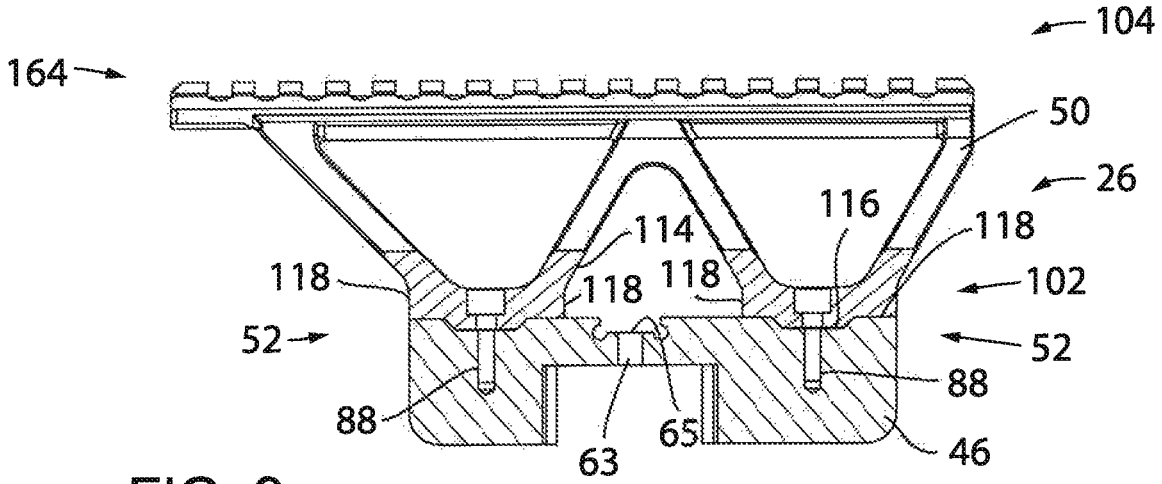
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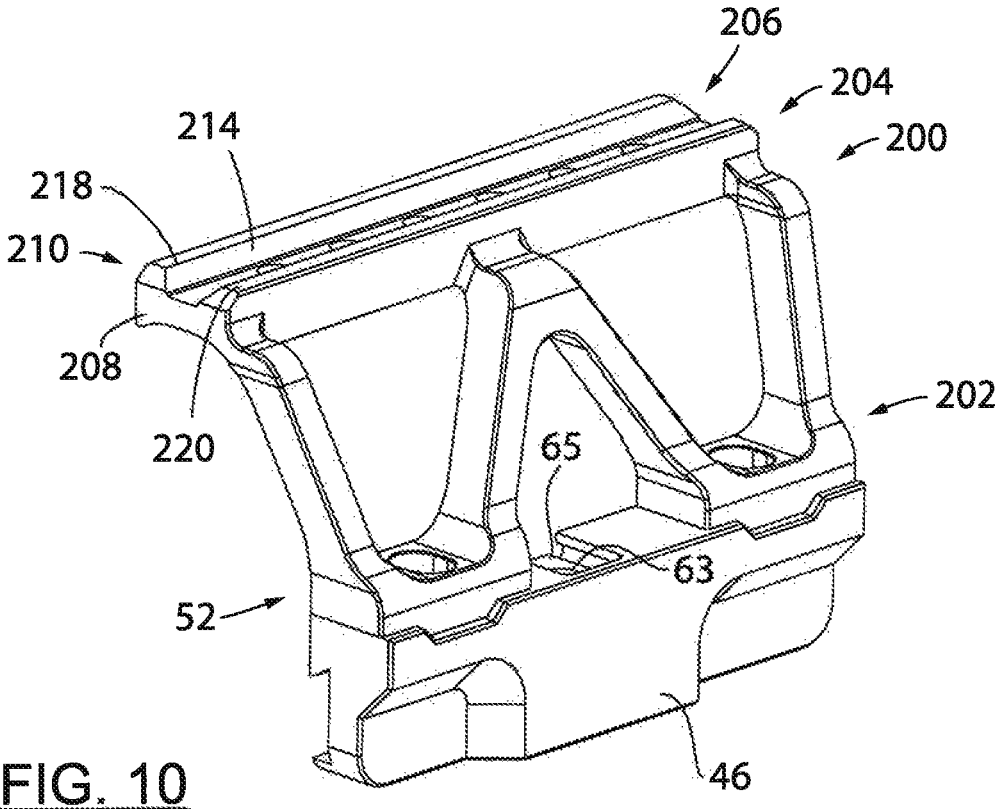
FIG. 9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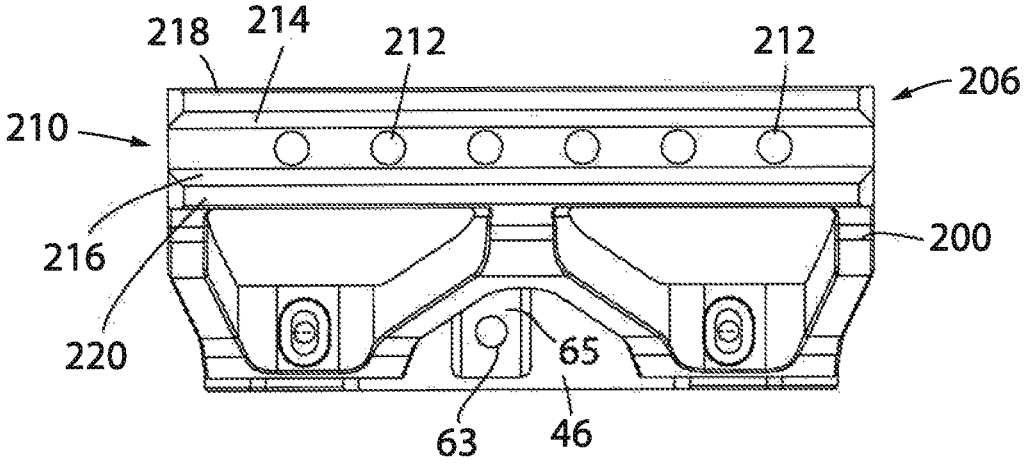
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FIG. 11

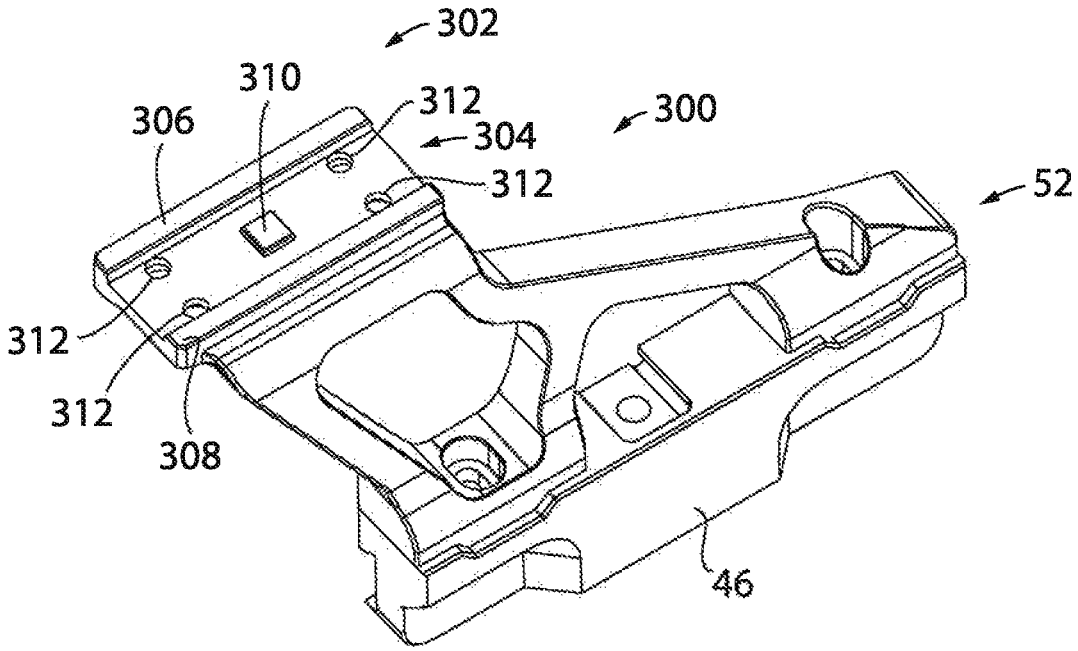
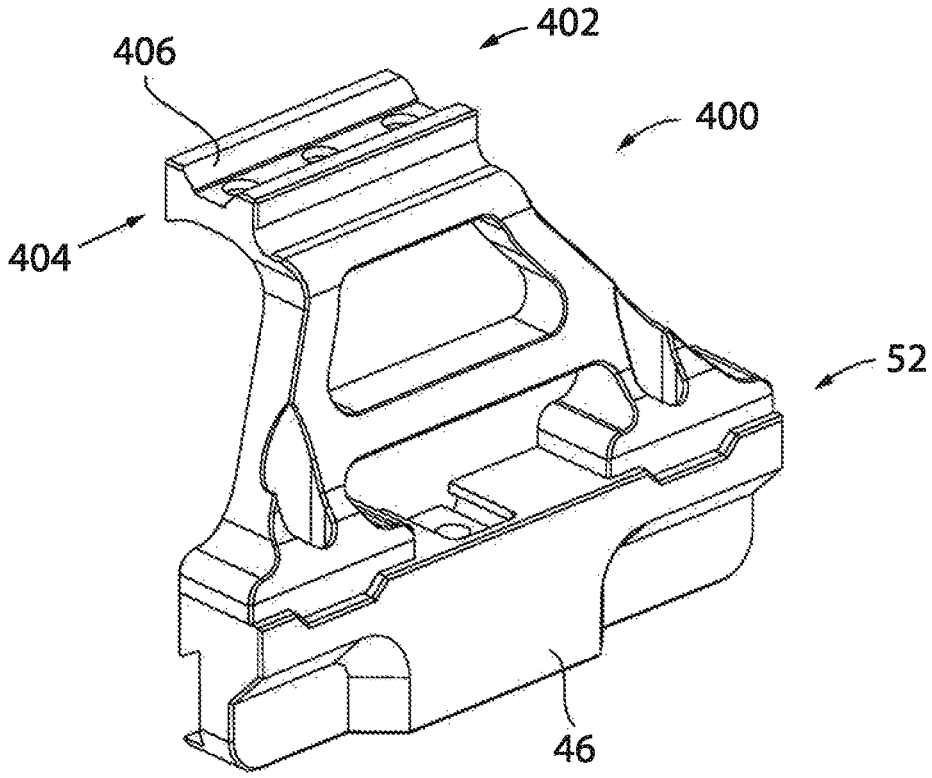


FIG. 12



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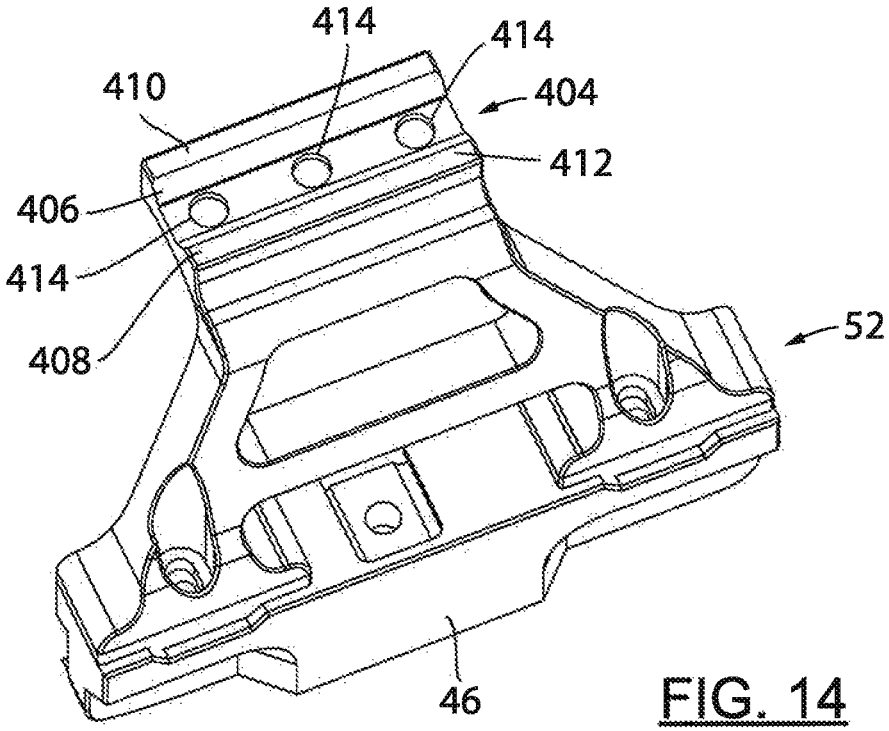

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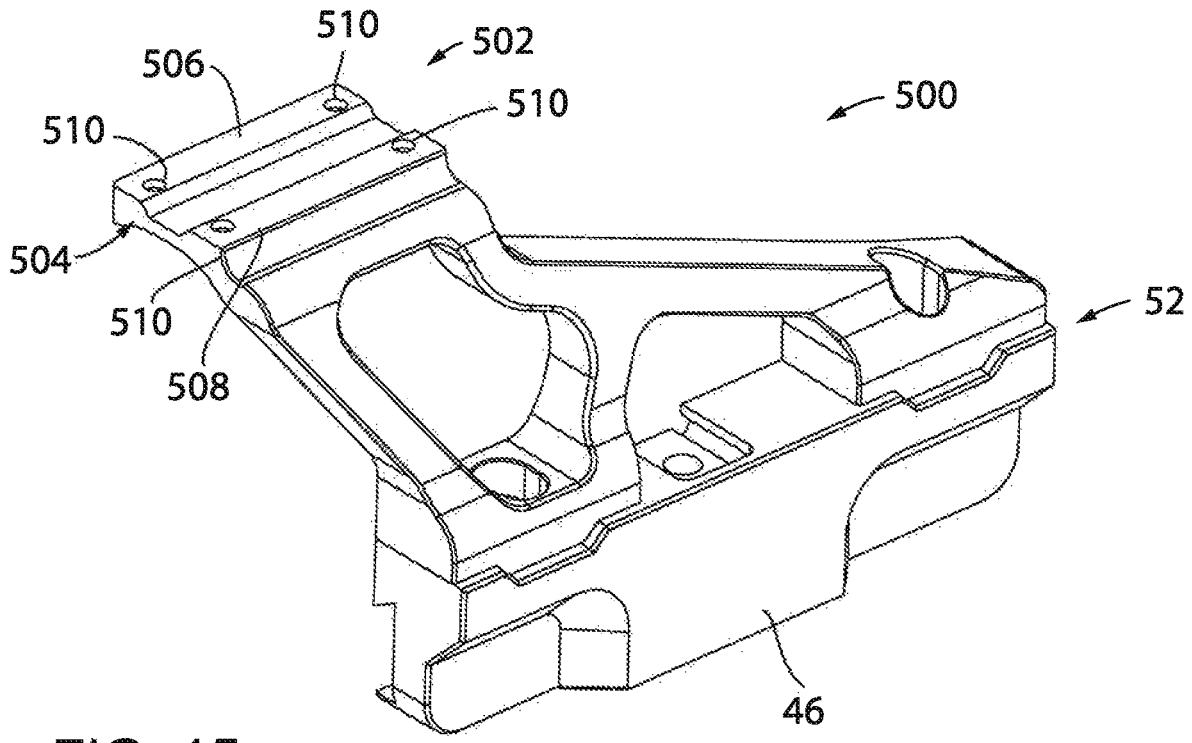
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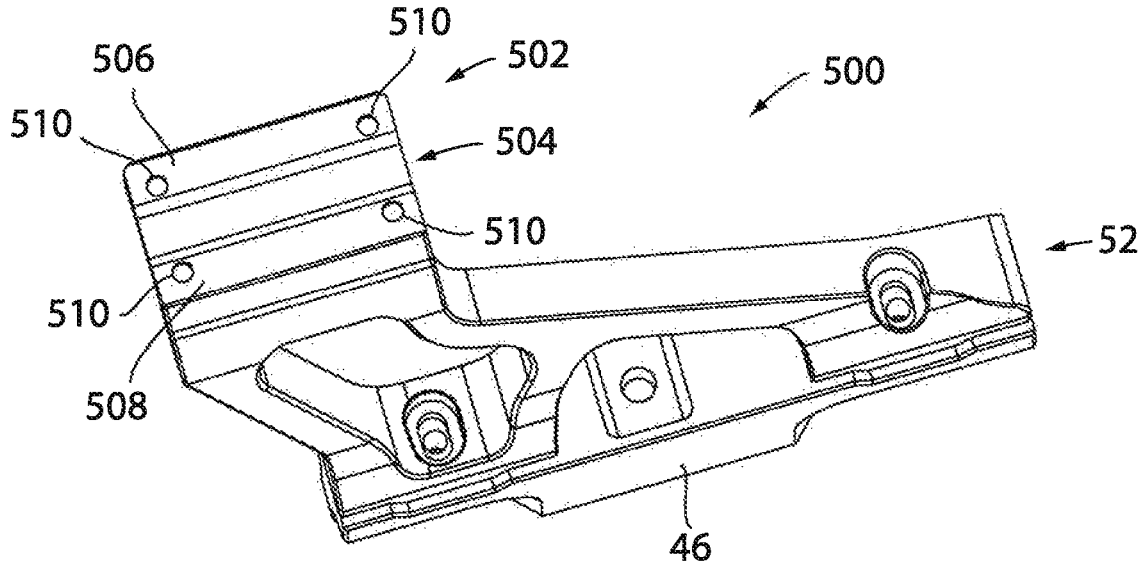
FIG. 15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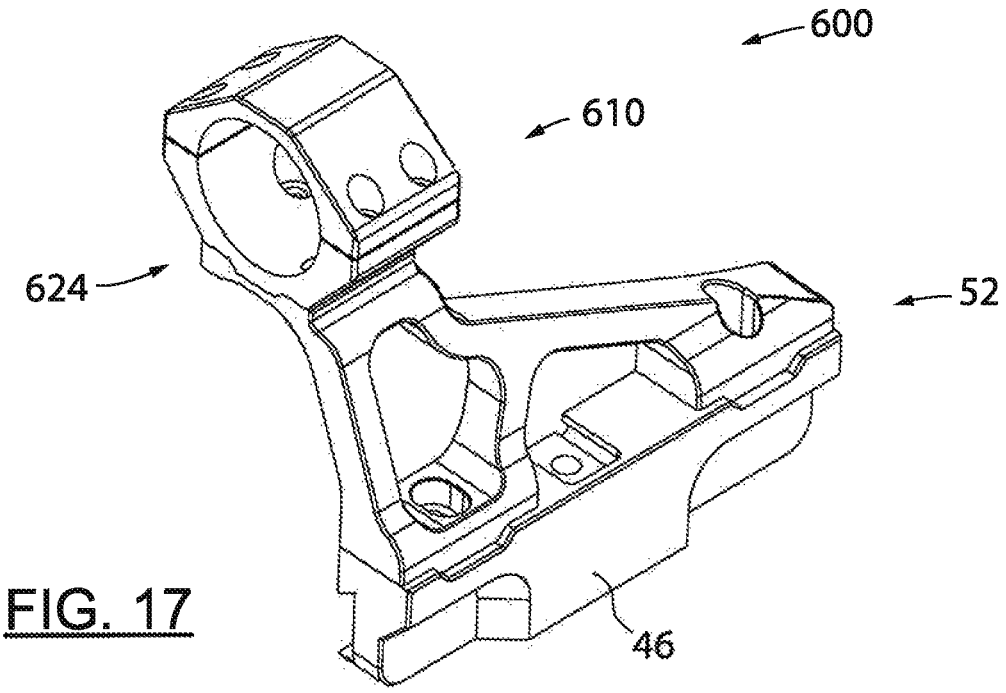
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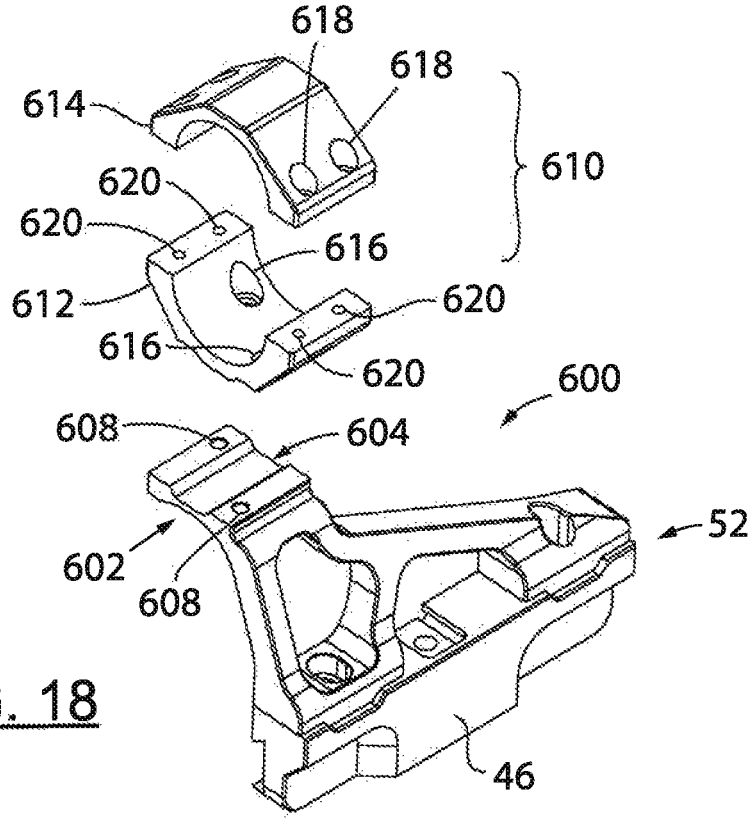
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FIG. 18

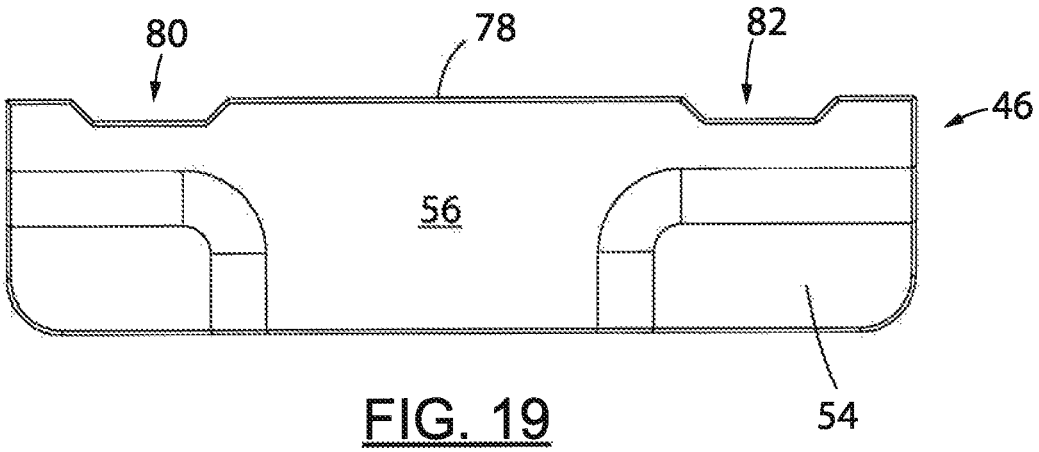

FIG. 19

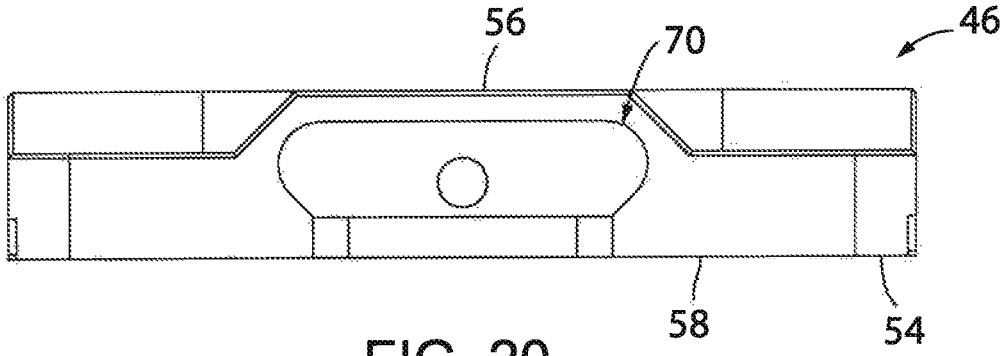

FIG. 20

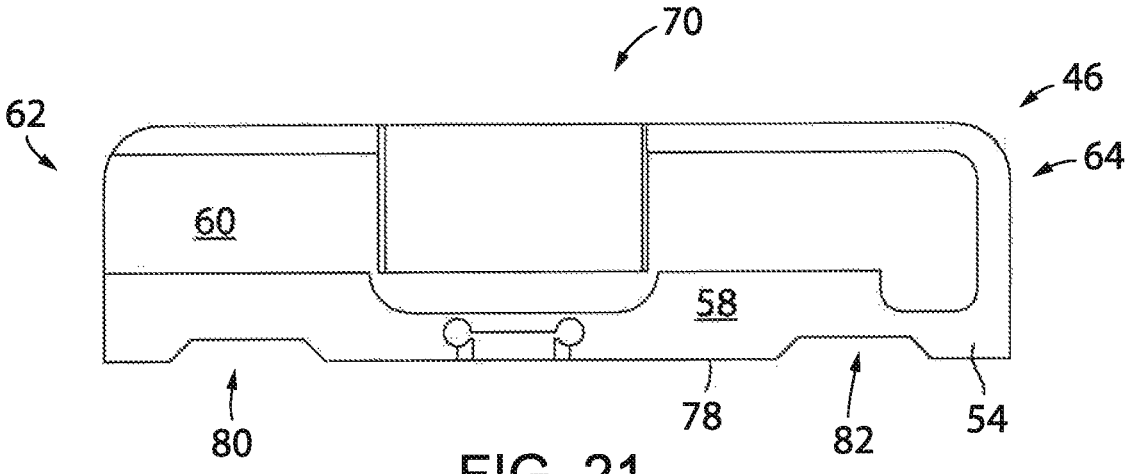

FIG. 21

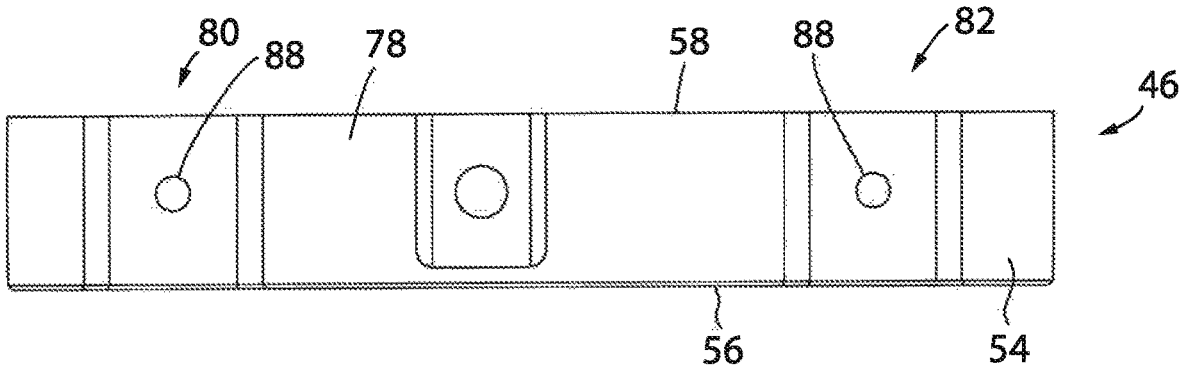

FIG. 22

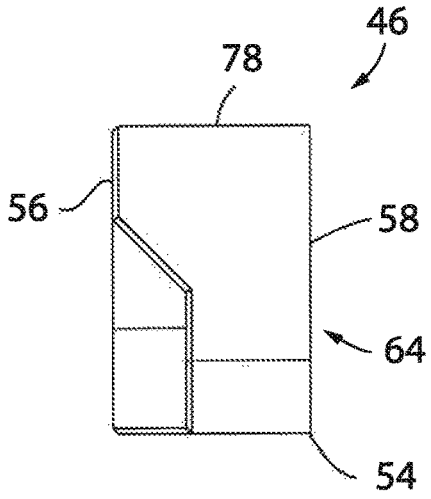

FIG. 23

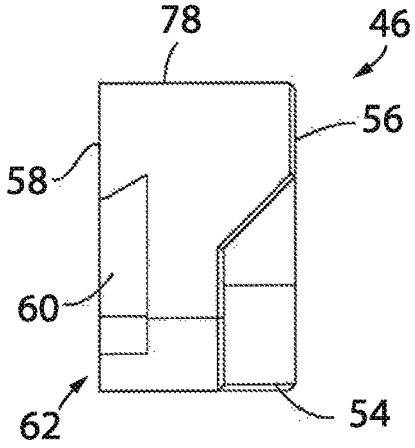

FIG. 24

FIREARM ACCESSORY INTERCHANGEABLE MOUNT SYSTEM

CROSS REFERENCE TO RELATED APPLICATIONS

This application claims priority to U.S. Provisional Patent Application Ser. No. 62/444,441 filed on Jan. 10, 2017 titled "Firearm Accessory Interchangeable Mount System" and the disclosure of which is incorporated herein.

FIELD OF THE INVENTION

The present invention relates to firearm accessory mounting arrangements that are configured to secure lighting and/or sighting accessories relative to an underlying firearm. More specifically, the present invention relates to an accessory mounting assembly wherein the mount assembly can be quickly and repeatably associated with a mount plate secured to an underlying firearm and wherein an accessory mounting surface can be laterally positioned for use with the underlying firearm.

BACKGROUND OF THE INVENTION

Firearm sight assemblies generally include an ocular or sight that is attached to the firearm to assist the shooter with aligning the bore of the firearm with an intended target. Commonly, the shooter adjusts either of the sight relative to the firearm, or the orientation of the sight relative to the target, to accommodate different shooting conditions such as windage and/or projectile inclination or declination conditions that may exist between the shooter and the intended target. Advancements in firearm capabilities and sighting and/or target lighting systems have resulted in firearm sighting systems and shooting conditions wherein shooters commonly desire to quickly, efficiently, and accurately associated one or more sighting devices relative to the underlying firearm and more suitable to a giving shooting condition. Further, different shooting conditions can present situations where it is desired to associate multiple sighting accessories, such as scopes, sights, lights, magnifiers, etc., relative to the underlying firearm in a manner wherein the discrete devices cooperate with one another in a manner wherein both devices are used concurrently during shooting activities.

Regardless of the intended use of one sighting device, multiple sighting devices, or the desire to change the discrete sighting devices to accommodate different shooting conditions, positioning of the discrete sighting devices relative to the underlying firearm must be highly repeatable to mitigate repeated sighting in of the firearm each time an additional or alternate sighting device is associated with the line of sight of the firearm. Failure to adequately attend to the repeatability of the association of the sighting accessories with the underlying firearm can render the underlying firearm unsuitable to achieve a requisite or desired degree of accuracy associated with subsequent use of the firearm with the respective or desired underlying sighting accessories.

Still further, many firearm sighting accessories are commonly provided with unique connection methodologies associated with securing the underlying accessory relative to an underlying firearm. Lack of uniformity or ability to cooperate between discrete sighting accessories and respective underlying accessory mounting systems detracts from the ability of the user to quickly and accurately associate discrete sighting accessories with firearms equipped with dissimilar accessory mounting systems. Configuring a discrete firearm for use with discrete firearm accessories that have been previously configured for use with another firearm having a dissimilar accessory mounting system is not an activity that can be commonly or conveniently completed in the field or during shooting activities. Further, such activities commonly require access to specialized tools or the like to effectuate the respective dissociation between a respective accessory and the underlying accessory mounting systems and subsequent association of the discrete accessory with an accessory mounting system having an alternate configuration but a configuration suitable for use or cooperation with an alternate accessory mounting system. Still further, accessories configured for cooperation or operation with one accessory mounting system commonly require additional mounting members or structures to achieve a desired operative association between such an accessory and an alternate accessory mounting system. Such considerations detract from the ability to quickly and repeatably associate a discrete accessory between respective firearms.

Accordingly, there is a need for a firearm accessory mounting system that can be quickly and accurately associated with alternate firearms. There is a further need for a firearm accessory mounting system that is configured to cooperate with a variety of discrete accessories and configured to cooperate with different mounting methodologies associated with commercially available sighting accessories.

SUMMARY OF THE INVENTION

The present invention discloses a firearm accessory mounting system or assembly and method of forming a firearm accessory mounting system that allows an accessory associated with the accessory mount system to be aligned for use with the underlying firearm and subsequently removed and repeatably associated with a mount plate secured to the firearm for subsequent use of the respective accessory in association with the respective firearm.

One aspect of the application discloses a firearm accessory mount assembly having a base that removably cooperates with a mount plate affixed to a receiver of an underlying firearm. An accessory support is constructed to be secured to the base such that a longitudinal axis of the accessory support is adjustable in a lateral direction relative to a longitudinal axis of the mount plate. The accessory mount assembly is constructed to achieve a desired longitudinal alignment of an accessory and the underlying firearm when the firearm is in use and such that the accessory and mount assembly can be readily removed and repeatably associated with an underlying firearm when use of the accessory is desired.

Another aspect of the application that is useable or combinable with the above features and aspects discloses a firearm accessory mounting system that includes a base that is constructed to removably cooperate with a mount plate that is affixed to a receiver of an underlying firearm. An accessory support is constructed to be secured to base such that a longitudinal axis of the accessory support is adjustable in a lateral direction relative to a longitudinal axis of the mount plate. A first engagement interface and a second engagement interface are formed between the base and the accessory support. The first engagement interface and the second engagement interface are constructed to provide an orthogonal association of the accessory support relative to the base throughout a range of adjustment of the accessory support relative to the base with respect to the lateral and longitudinal directions.

Another aspect of the application that is useable or combinable with the above features and aspects discloses a firearm accessory mounting system that includes a base and an accessory support. The base includes a channel formed in a firearm facing side of the base and that is constructed to slideably cooperate with a mount plate secured to a receiver of a firearm. The accessory support is constructed to cooperate with the base. A first channel and a second channel are defined by one of the base of the accessory support and a first projection and a second projection are defined by the other of the base and the accessory support. The first projection is constructed to cooperate with the first channel and the second projection is constructed to cooperate with the second channel to align a longitudinal axis of the base with a longitudinal axis of the accessory support when the accessory support is secured to the base. The first projection and the second projection are constructed to removeably engage with a respective one of the first channel and the second channel in a vertical direction.

Another aspect of the application that is useable or combinable with the above features and aspects discloses a method of forming a firearm accessory mounting system that includes providing a base that removably cooperates with a mount plate secured to a rearward portion of a firearm. A first and a second base indexing structure are defined by a vertically facing surface of the base. A plurality of accessory mounts are provided that each cooperate with the base. A first and a second accessory mount indexing structure are defined by a downward facing surface of each of the plurality of accessory mounts such that the first accessory mount indexing structure is configured to slideably cooperate with the first base indexing structure and the second accessory mount indexing structure is configured to slideably cooperate with the second base indexing structure when a respective one of the plurality of accessory mounts is vertically translated relative to the base such that each of the first and second accessory mount indexing structures engage a respective one of the first base indexing structure and the second base indexing structure when a respective accessory mount is secured to the base.

These and various other aspects, features, and advantages of the present invention will be made apparent from the following detailed description and the drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

The drawings illustrate various preferred embodiments presently contemplated for carrying out the invention.

FIG. **1** is a partial perspective view of a firearm having a mount plate secured thereto and that is constructed to removeably cooperate with the accessory mounting system according to the present invention;

FIG. **2** is a side elevation view of the firearm shown in FIG. **1** with an accessory mounting system according to the present invention engaged with the mount plate of the underlying firearm;

FIG. **3** is a perspective view of the firearm accessory mounting system shown in FIG. **2** removed from the firearm;

FIG. **4** is a perspective view of a firearm facing side of the accessory mounting system shown in FIG. **3**;

FIG. **5** is a top plan view of the accessory mounting system shown in FIG. **4**;

FIG. **6** is a view similar to FIG. **3** and shows the accessory support disengaged from the base of the accessory mounting system;

FIG. **7** is a perspective cross section view of the firearm accessory mounting system taken along line **7-7** shown in FIG. **5**;

FIG. **8** is a view similar to FIG. **7** taken along line **8-8** shown in FIG. **5**;

FIG. **9** is an elevational cross section view of the accessory mounting system taken along line **9-9** shown in FIG. **5**;

FIG. **10** is a view similar to FIG. **3** and shows an alternate accessory support associated with the base of the accessory support system;

FIG. **11** is a top plan view of the accessory support system shown in FIG. **10**;

FIG. **12** is a view similar to FIG. **10** and shows another alternate accessory support associated with the base of the accessory mounting system shown in FIG. **3**;

FIG. **13** is a view similar to FIG. **12** and shows another alternate accessory support associated with the base of the accessory mounting system shown in FIG. **3**;

FIG. **14** is a more top oriented perspective view of the accessory mounting system shown in FIG. **13**;

FIG. **15** is a view similar to FIG. **13** and shows another accessory support associated with the base of the accessory mounting system shown in FIG. **3**;

FIG. **16** is a view similar to FIG. **14** of the accessory mounting system shown in FIG. **15**;

FIG. **17** is a view similar to FIG. **13** and shows an accessory support in the form of a scope ring assembly associated with the base of the accessory mounting system shown in FIG. **3**;

FIG. **18** is an exploded perspective view of the accessory mounting system shown in FIG. **17**;

FIG. **19** is as atmosphere facing side elevation view of the base of the accessory mounting system shown in FIG. **3**;

FIG. **20** bottom plan view of the base shown in FIG. **19**;

FIG. **21** is a firearm facing side elevation view of the base shown in FIG. **19**;

FIG. **22** is top plan view of the base shown in FIG. **19**;

FIG. **23** is a rear elevation view of the base shown in FIG. **19**; and

FIG. **24** is a forward elevation view of the base shown in FIG. **19**.

DETAILED DESCRIPTION

FIG. **1** shows a receiver **20** of a firearm **22** having a mount plate **24** affixed thereto and FIG. **2** shows firearm **22** with an accessory mounting system or assembly **26** according to the present invention operatively associated with mount plate **24**. Mount plate **24** is constructed to slideably receive an accessory mount assembly **26** according to the present invention. Those skilled in the art will readily recognize firearm **22** as a WASR10 or AK47 style firearm wherein mount plate **24** is secured to receiver **20** via one more rivets **28**, fasteners, or the like. That is, mount plate **24** is generally not adjustable relative to receiver **20** once secured thereto but provides a robust and secure interface for securing accessories or accessory mount assemblies as disclosed in the present application relative to the underlying firearm **22**. It should be appreciated that mount plate **24** can be secured to a receiver or stock associated with the underlying firearm **22**.

Mount plate **24** includes a rear facing surface **30**, an upward facing surface **32**, a downward facing surface **34**, and a forward facing surface **36** that each extend in a generally outward lateral direction relative to a plane defined by a sidewall **38** of receiver **20**. Mount plate **24** extends in a longitudinal direction, indicated by line **40**, which is

generally aligned with the longitudinal axis of receiver **20**. A longitudinal center portion **42** of mount plate **24** is constructed to cooperate with a release assembly **44** attached or otherwise associated with a base **46** of accessory mount assembly **26**. Release assembly **44** is preferably provided in a quick-release methodology wherein release assembly **44** can be engaged and disengaged from mount plate **24** in a preferably tool-less manner.

As shown in FIG. **2**, release assembly **44** includes a handle **46** that is rotatable relative to base **46** between a closed position, as shown in FIG. **2**, and an open position that is generally rearward of the orientation shown in FIG. **2**. It should be appreciated that the axis of rotation associated with operation of handle **46** would be perpendicular relative to the view shown in FIG. **2**. When in the closed position, release assembly **44** secures base **46** relative to mount plate **24** and when in the open position, base **46** is slidable in a longitudinal direction, indicated by arrow **48**, relative to mount plate **24** to accommodate the selective placement and/or removal of accessory mount assembly **26** relative to the underlying firearm **22**. Preferably, when release assembly **24** is "open", base **46**, and a respective accessory mount or support associated therewith, are slideable in a generally rearward direction relative to firearm **22** to effectuate the desired removal of the respective accessory mounting system or assembly **26** therefrom.

Accessory mount assembly **26** includes an accessory support **50** that can be secured to base **46**. As disclosed further below, an engagement interface **52** is formed between accessory support **50** and base **46** to accommodate the desired lateral relative positioning of accessory support **50**, and thereby any sighting or lighting accessory associated therewith, with respect to base **46** when base **46** is secured to underlying firearm **22**. As also disclosed below, engagement interface **52** provides an orthogonal lateral or perpendicular translation of accessory support **50** relative to base **46** to achieve the desired alignment of an accessory associated therewith relative to operation of the underlying firearm **22**. Preferably, the cooperation between discrete accessory supports **50** and base **46** includes at least two, similarly constructed, engagement interfaces associated with the cooperation of discrete accessory supports **50** and the underlying base **46**.

FIGS. **3-9** show various views of accessory support assembly **26** with quick release assembly **44** removed therefrom and accessory support assembly **26** removed from firearm **22**. For clarity, various fasteners have also been removed from assembly **26**. Referring to FIGS. **3-9** and **19-24**, base **46** is defined by a body **54** having an atmosphere facing side **56** and a mount plate facing side **58** that is generally opposite thereto. Mount plate facing side **58** of body **54** of base **46** includes a channel **60** that is defined by an open end **62** and a closed end **64** relative to a longitudinal axis of channel **60**.

A rib **66** extends along at least a portion of a top surface of channels **60** and is constructed to abut top surface **32** of mount plate **24** when base **46** is engaged therewith. An end wall **68** associated with closed end **64** of channel **60** is constructed to abut rear facing surface **30** of mount plate **24** when base **46** is engaged therewith. Engagement between end wall **68** and rear facing surface **30** provides a repeatable association between base **46** and mount plate **24** in a longitudinal direction generally aligned with the bore of firearm **22**.

Body **54** of base **46** includes a cutout **70** associated with accommodating quick release assembly **44** supported by base **46**. Quick release assembly **44** is constructed to include a projection that is translatable in a generally vertical direction, indicated by arrow **72**, relative to body **54** of base **46** during operation of handle **47**. When oriented in the closed position, quick release assembly **44** biases lip **66** into engagement with top surface **32** of mount plate **24** and the overlapping portion of quick release assembly **44** engages lower facing surface **34** in an overlapping orientation thereby securing base **46** relative to mount plate **24**.

Abutting engagement between end wall **68** of base **46** and surface **30** of mount plate **24**, and the selectively operable closure associated with release assembly **44** provides a readily repeatable orientation of base **46** relative to mount plate **24** during placement and removal of accessory mount system **26** to the underlying firearm **20**.

A top surface **78** of base **46** includes a pair of channels **80**, **82** that each have a generally trapezoidal shaped cross-sectional areas. Said in another way, the cross sectional area associated with channels **80**, **82** decreases as the channels progress in a downward direction relative to top surface **78** of base **46** such that channels **80**, **82** have a tapered or trapezoidal cross sectional shape when considered in laterally extending directions that oriented transverse to a longitudinal axis of the base **46** that is aligned with a bore of an underlying firearm. The generally open or non-overlying shape associated with channels **80**, **82** allows expedient association of a discrete accessory mount relative thereto and allows such an association in a manner that mitigates the collection of dirt, debris, or other obstructions which could detract from a suitable robust and positionally secure connection associated with the engagement interface **52** therebetween.

A threaded opening **88** is associated with each channel **80**, **82** and is constructed to receive a fastener (not shown) associated with securing a respective accessory support or mount **50** relative to base **46**. As disclosed further below, the cooperation between accessory mount **50** and base **46** is constructed to allow limited lateral translation, or translation in a direction that is normal to the axis associated with the bore of the underlying firearm, between accessory mount **50** and base **46** to provide a useable orientation of accessories associated with accessory mount **50** relative to the underlying firearm.

Referring to FIGS. **3-7**, accessory mount **50** is defined by a body **100** having a lower end **102**, an upper end **104**, and one or more posts **108** that extend between lower end **102** and upper end **104** of body **100**. Understandably, posts **108** could be provided in a more solid configuration but doing so could negatively impact the weight associated with utilization of accessory mounting system **26**. Referring to FIG. **5**, posts **108** are shaped to offset the longitudinal axis, indicated by line **110**, associated with lower end **102** of body **100** from a longitudinal axis, indicated by line **112**, associated with upper end **104** of body **100**. The lateral distance between axes **110**, **112** generally represents the distance between the sidewall associated with receiver **20** and the center line associated with the bore of the firearm.

Respective projections **114**, **116** extend in a generally downward direction relative to lower end **102** of body **100** of accessory mount **50**. Projections **114**, **116** are oriented and shaped to cooperate with respective channels **80**, **82** defined by base **46**. Referring to FIG. **9**, projections **114**, **116** are flanked by lands **118** so as to provide a generally continuous contact engagement associated with the engagement interface **52** between the contacting portions of base **46** and accessory support **50** when a respective accessory mount is associated with base **46**. Referring to FIGS. **3**, **5**, and **7**, an oblong opening **120** is associated with an upward facing

surface of accessory support **50** and generally aligned with a relative one of downward extending projections **114**, **116**. Openings **120** generally define a seat **124** and a through bore **126** associated with accommodating passage of a fastener (not shown) into operative engagement with threaded openings **88** defined by base **46**.

The generally oblong shape associated with openings **120** and bore **126** accommodates lateral orthogonal translation, indicated by line **130** (FIG. **5**), of accessory support **50** relative to base **46**. Such a construction allows the desired spacing between axis **112** associated with accessory support **50** relative to axis **110** associated with base **46** during a sighting operation when a respective accessory is associated with accessory mount **50**. Once oriented in the desired position relative to one another and the underlying firearm, the fasteners associated with openings **120** and bores **126** can be tightened thereby fixing the relative orientation between base **46** and accessory support **50** and thereby the relative position of an accessory associated therewith relative to an underlying firearm **22**. The generally tapered, but laterally orthogonal, orientation between channels **80**, **82** and respective projections **114**, **116** facilitates orthogonal lateral translation of accessory support **50** relative to base **46**, and thereby adjustment of the accessory relative to a bore of the underlying firearm **22**, during the initial configuration of accessory mount assembly **26** with an underlying firearm.

Upper surface **104** of accessory support **50** includes a plurality of corresponding projections **160** and grooves **162**, commonly understood as a picatinny rail configuration, which define an accessory engagement interface **164**. Opposing sides **166**, **168** of engagement interface **164** include overlapping edges configured to cooperate with a securing mechanism and/or quick release assembly such as quick release assembly **44**. Projections **166** and grooves **162** provide an adjustable longitudinal engagement between accessories associated therewith and the underlying engagement interface **164** whereas opposing edges **166**, **168** provide a secure connection methodology associated with the engagement of an accessory with the engagement interface **164**. Said in another way, when accessories are associated with the engagement interface **164**, the engagement of the accessory with projections **160** and recesses **164** and respective edges **166**, **168** of engagement interface **164** provides a secure physical association between the respective accessory and accessory mount **50**. Once associated with the engagement interface **164** and accessory support **50** is secured to base **46**, operation of quick release assembly **44** provides repeatable association of the respective accessory and accessory mount system **26**, relative to the underlying firearm **22**.

It should further be appreciated that not all accessories are configured to cooperate with a picatinny type rail engagement interface such as engagement interface **164**. FIGS. **10-18** show various accessory mounts according to alternate embodiments of the present invention. It is appreciated that the accessory mounts shown in the appending drawings are merely exemplary of accessory mounts that are constructed to cooperate with various firearm accessories and that constructions and configurations of the accessory mounts beyond those shown herein are envisioned and within the scope of the appending claims. Regardless of the accessory intended to be connected to a firearm or the specific connection of the accessory mount associated therewith, each accessory mount includes a lower facing structure that is constructed to cooperate with a base having a construction similar to base **46**. It is further appreciated that it may be advantageous to some users to have multiple bases **46** and multiple accessory mounts associated with discrete bases, whether the accessory mounts have the same or dissimilar constructions, to facilitate expeditious association of various shooting accessories with a common firearm as a the situation or user preferences may dictate. FIGS. **10-18** show exemplary accessory mounts associated with base **46** for use with firearm **22**.

Referring to FIGS. **10** and **11**, an accessory support or mount **200** according to another embodiment of the invention includes a first end **202** that is constructed to cooperate with base **46** and a second end **204** having an alternate accessory engagement interface **206** formed thereat. As alluded to above, the engagement interface associated with the lower end of accessory support **200** is the same as the engagement interface **52** described above with accessory mount or support **50** such that accessory mount or support **200** cooperates with base **46** in the same manner as described above with respect to accessory support **50**.

Engagement interface **206** includes a generally elongated rail **208** having a channel **210** and a plurality of openings **212** formed therethrough. Channel **210** includes opposing tapered sidewalls **214**, **216** associated with channel **210** and opposing sidewalls **218**, **220** associated therewith. Channel **210** is shaped to laterally index a respective accessory relative to accessory mount **200** and openings **212** are oriented to cooperate with a post associated therewith and/or receiver fastener associated with securing a respective accessory relative to accessory mount **200**. As mentioned above, engagement interface **52** between accessory mount **200** and base **46** is the same as described above so as to facilitate orthogonal lateral translation of accessory mount **200** relative to base **46** during alignment or sighting operations.

FIG. **12** shows an accessory mount **300** according to another embodiment of the invention engaged with base **46**. Engagement interface **52** between accessory mount **300** and base **46** is generally similar in construction and operation is that described above with respect to accessory mount **50**. Accessory mount **300** includes accessory engagement interface **302** that includes a channel **304** generally defined by opposing sidewalls **306**, **308** defined by accessory mount **300**. A projection **310** extends from accessory mount **300** proximate channel **304** and is constructed and oriented to index in accessory, such as a dot sight, relative to engagement interface **304**. One or more openings **312** pass in a vertical direction through accessory mount **300** relative to channel **304** and are offset from projection **310**. Openings **312** are oriented and constructed to cooperate with a post associated with a respective accessory and/or receive a respective fastener associated with securing the respective accessory relative to accessory engagement interface **302**.

FIGS. **13** and **14**, show yet another alternative accessory mount **400** associated with base **46** via engagement interface **52**. Accessory mount **400** includes an accessory engagement interface **402** that is somewhat similar to engagement interface **204** but has a shorter longitudinal length relative thereto. Accessory engagement interface **402** is defined by a channel **404** defined by opposing tapered sidewalls **406**, **408** and respective top walls **410**, **412** associated therewith. One or more openings **414** extend in a generally vertical direction through accessory mount **400** and are associated with channel **404** and facilitate cooperation and indexing of the respective accessory relative thereto. Engagement interface **52** between accessory mount **400** and base **46** is similar to

that described above such that accessory mount **400** is laterally translatable relative to base **46** during sighting operations.

FIGS. **15** and **16** show an accessory mount **500** according to another embodiment of the invention. Accessory mount **500** cooperates with base **46** so as to provide the laterally orthogonal adjustable engagement interface **52** therebetween. Accessory engagement interface **502** defined by accessory mount **500** includes a channel **504** that is flanked by opposing sidewalls **506**, **508**. One or more openings **510** are associated with accessory engagement interface **502** and offset from channel **504** for securing accessories having alternate engagement interfaces relative to accessory mount **500**.

FIGS. **17** and **18** show an accessory mount **600** according to another embodiment of the invention engaged with base **46** so as to maintain the operability of engagement interface **52** as described above. Accessory mount **600** includes an accessory engagement interface **602** generally defined by a channel **604** and one or more openings **606**, **608** somewhat similar to accessory mount **500**. Engagement interface **602** associated with accessory mount **600** is constructed to cooperate with an accessory securing arrangement in the form of a scope ring **610**. Scope ring **610** includes a first or lower portion **612** and an upper portion **614** that is constructed to be secured to the lower portion **612**. Lower portion **612** of scope ring **610** includes opposing cutouts **616** oriented and constructed to secure lower portion **612** of scope ring **610** relative to engagement interface **602** of accessory mount **600**. Association of respective fasteners (not shown) with respective openings **618** associated with upper portion **614** of scope ring **610** and operatively engage with respective threaded openings **620** of lower portion **612** of scope ring **610** defines a generally circular cross-sectional opening **624** configured to receive circular sighting optics such as scopes or the like.

Scope ring **610** is constructed to securely engage a respective scope associated with opening **624** and be secured to accessory interface **602** associated with accessory mount **600** and secured to base **46** such that once the desired lateral orientation of accessory mount **600** relative to base **46** is obtained, such as during a sighting operation, accessory mount assembly **600**, and the scope associated therewith, can be readily and repeatedly associated with the underlying firearm via the desired selective engagement and disengagement of base **46** from mount plate **20**.

Each of the mount assemblies disclosed herein provide firearm accessory mounting arrangements that allows a shooter to quickly and repeatably configure a firearm assembly for shooting with the assistance of an accessory or displacement of the accessory from the underlying firearm. Each mount assembly is further constructed to provide an adjustable cooperation between the respective accessory mount and the underlying base that provides improved longitudinal and lateral adjustment of the orientation of the accessory relative to the underlying firearm to provide the desired relief and/or positioning of the accessory relative to the underlying firearm to achieve the desired operability of the respective accessory.

Referring to FIGS. **19-24**, which each shows a discrete respective orthogonal side of base **46** with the quick release assembly and any respective accessory support removed therefrom, the generally spaced association of channels **80**, **82** along the longitudinal axis of body **54** and the orthogonally extending direction associated with the orientation of channels **80**, **82** relative to the firearm facing channel **60** associated with engaging the mount plate secured to an underlying firearm allow base **46** to be repeatedly associated with an underlying firearm and provides a highly repeatable orthogonal orientation of the discrete accessory mounts relative to the underlying base. Said in another way, the spaced relationship and upwardly facing open construction of channels **80**, **82** provides a tactile indication as to the desired orientation of a respective accessory support relative to base **46** upon even loose association of a respective accessory support with base **46**. When a respective accessory support is secured to base **46** via engagement of fasteners with threaded openings **88**, the cooperation of the projections associated with a lower facing side of the respective accessory support with the plurality of surfaces associated with channels **80**, **82** defined by base **46** provides a robust fore, aft, and rotational directions fixed connection between a respective accessory support and base **46**. Further, the substantially open and non-overlapping construction associated with the cooperation of the projections and channels **80**, **82** allows the expedient remove of debris or other obstructions which could hinder the desired secure mechanical connection between a discrete accessory mount and base **46**.

The present invention has been described in terms of a preferred embodiment directed to an assembly as generally shown in the drawings. It is recognized that equivalents, alternatives, and modifications, aside from those expressly stated, the summarized embodiments, or the embodiment shown in the drawings, are possible and within the scope of the appending claims. The appending claims cover all such alternatives and equivalents.

What is claimed is:

1. A firearm accessory mounting system comprising:

a base that is constructed to removably cooperate with a mount plate that is affixed to a receiver of an underlying firearm;

an accessory support that is constructed to be secured to the base such that a longitudinal axis of the accessory support is adjustable in a lateral direction relative to a longitudinal axis of the mount plate; and

an engagement interface formed between the base and the accessory support, the engagement interface being constructed to provide an orthogonal association of the accessory support relative to the base throughout a range of adjustment of the accessory support relative to the base with respect to the lateral direction,

wherein the engagement interface is defined by a respective channel formed in at least one of the base and the accessory support and a respective projection formed in the other of the at least one of the base and the accessory support,

wherein the channel and projection are constructed to engage one another from a vertical direction for retention to one another when the base is secured to the mount plate,

wherein a cross sectional area of each of the channel and the projection decrease as the channel and the projection progress in a downward direction relative to a top surface of the base, and

wherein each of the channel and the projection are configured to receive a fastener therethrough while allowing selectively slidable lateral orthogonal translation of the accessory support relative to the base.

2. The firearm accessory mounting system of claim **1** further comprising a quick release supported by the base and operable between an open position wherein the base is movable relative to the mount plate and a closed position wherein the base is secured to the mount plate in a manner

that tolerates operation of the underlying firearm without translation of the base relative to the mount plate.

3. The firearm accessory mounting system of claim 1 wherein the channel and the projection have corresponding trapezoidal shapes.

4. The firearm accessory mounting system of claim 1 further comprising a fastener associated with a fastener passage through the channel and the projection.

5. The firearm accessory mounting system of claim 4 wherein the fastener passage associated with the accessory support has an oblong shape defined by an axis that extends in the lateral direction.

6. The firearm accessory mounting system of claim 1 wherein the engagement interface is further defined as a first engagement interface, and further comprises a second engagement interface, wherein the first and second engagement interfaces each comprise a channel formed in the base and a projection defined by the accessory support.

7. The firearm accessory mounting system of claim 1 further comprising a plurality of accessory supports wherein each respective accessory support is constructed to interchangeably cooperate with the base via the engagement interface.

8. The firearm accessory mounting system of claim 1 wherein the accessory support includes an accessory engagement interface comprising a plurality of projections and grooves for securing an accessory.

9. The firearm accessory mounting system of claim 1 wherein the channel is formed in the base and the projection is defined by the accessory support, and further comprising a fastener passage associated with the channel and projection.

10. A firearm accessory mounting system comprising:

a base having a channel formed in a firearm facing side of the base and constructed to slideably cooperate with a mount plate secured to a receiver of a firearm;

an accessory support constructed to cooperate with the base, the accessory support including an accessory engagement interface for securing an accessory;

a first channel and a second channel defined by one of the base and the accessory support; and

a first projection and a second projection defined by the other of the base and the accessory support, the first projection being constructed to cooperate with the first channel and the second projection being constructed to cooperate with the second channel to align a longitudinal axis of the base with a longitudinal axis of the accessory support when the accessory support is secured to the base,

wherein the first projection and the second projection are constructed to removeably engage with a respective one of the first channel and the second channel in a vertical direction for retention to one another,

wherein a respective cross sectional area of each of the first channel, the second channel, the first projection, and the second projection decreases as each respective one of the first channel, the second channel, the first projection, and the second channel progresses in a downward direction relative to a top surface of the base, and

wherein each of the first channel and the first projection are configured to receive a first fastener therethrough, and each of the second channel and the second projection are configured to receive a second fastener therethrough, while allowing selectively slideable lateral orthogonal translation of the accessory support relative to the base.

11. The firearm accessory mounting system of claim 10 wherein the first and second channels are defined by the base and the first and second projections are defined by the accessory support, and wherein the accessory support further comprises a first oblong opening and a second oblong opening that each extend through the accessory support in a vertical direction wherein each of the first oblong opening and the second oblong opening is aligned with a respective pair of the first channel and the first projection and the second channel and the second projection.

12. The firearm accessory mounting system of claim 11 further comprising a fastener constructed to pass through a respective one of the first oblong opening and the second oblong opening and cooperate with a respective threaded passage defined by the base.

13. The firearm accessory mounting system of claim 10 further comprising a quick release assembly supported by the base and operable to selectively secure the base to the mount plate.

14. The firearm accessory mounting system of 10 further comprising a plurality of accessory supports wherein each accessory support is constructed to interchangeably cooperate with the base.

15. The firearm accessory mounting system of claim 10 wherein each of the first projection and the second projection and the first channel and the second channel have a tapered cross sectional shape.

16. A method of forming a firearm accessory mounting system, the method comprising:

providing a base that removably cooperates with a mount plate secured to a rearward portion of a firearm;

defining a first and a second base indexing structure with a vertically facing surface of the base;

providing a plurality of accessory mounts that each cooperate with the base and are securable relative thereto at a single respective longitudinal position;

defining a first and a second accessory mount indexing structure with a downward facing surface of each of the plurality of accessory mounts such that the first accessory mount indexing structure is configured to slideably cooperate with the first base indexing structure and the second accessory mount indexing structure is configured to slideably cooperate with the second base indexing structure when a respective one of the plurality of accessory mounts is vertically translated relative to the base such that each of the first and second accessory mount indexing structures are constructed to engage a respective one of the first base indexing structure and the second base indexing structure in a vertical direction for retention to one another when a respective accessory mount is secured to the base, wherein a cross sectional area of each of the first and second base indexing structures decrease as the base indexing structure progresses in a downward direction relative to a top surface of the base; and

providing an accessory engagement interface supported by the plurality of accessory mounts, the accessory engagement interface for selectively securing an accessory relative to the firearm, and

wherein each of the first base indexing structure and the first accessory mount indexing structure are configured to receive a first fastener therethrough, and each of the second base indexing structure and the second accessory mount indexing structure are configured to receive a second fastener therethrough, while allowing selectively slideable lateral orthogonal translation of the accessory support relative to the base.

17. The method of claim 16 wherein each of the plurality of accessory mounts include an opening that is aligned with each of the first and second accessory mount indexing structures.

18. The method of claim 17 further comprising forming each opening to have an oblong shape.

19. The method of claim 16 further comprising forming a threaded passage in the base that is aligned with each of the first base indexing structure and the second base indexing structure and configured to cooperate with a respective fastener associated with a respective opening formed in a respective one of the plurality of accessory mounts when the respective one of the accessory mounts is secured thereto.

20. The method of claim 16 further comprising a plurality of fasteners wherein each fastener passes through a respective one of the plurality of accessory mounts and cooperates with the base to secure the respective one of the plurality of accessory mounts relative to the base.

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