(54) MODULAR GUN SLING

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(57) ABSTRACT

A modular sling for firearms, especially for tactical operators such as Military and Police officers or for others who have a need to carry a firearm. The sling is attachable to the firearm using either a single point or two-point attachment, and may include an extendable portion. The extendable portion may be replaced by a non-extendable portion in modular fashion. The sling includes a quick length adjustment module.
MODULAR GUN SLING

FIELD OF THE DISCLOSURE

[0001] This disclosure relates to slings for firearms, especially for tactical operators such as Military and Police officers including those with K-9 and other specialized mission sets, although the disclosed devices may be used by others who have a need to carry a firearm. The disclosed sling is attachable to the firearm using either a single point or two-point attachment on the firearm. This disclosure particularly addresses weapons system employment and retention while allowing the operator to maintain situational awareness and positive control of the firearm.

BACKGROUND OF THE DISCLOSURE

[0002] There are many types of gun slings available for tactical operators including single-point and two-point varieties. Each variety has arguable strengths and weaknesses depending upon the dynamics of the operating environment. Unfortunately, many gun slings increase the likelihood of a mishap from snags or loss of situational awareness due to having overly complicated adjustments and design. Many gun sling designs have limited functionality forcing the operator to alter training techniques to accommodate his equipment versus the equipment being designed around the operator’s requirements. Both Military and Police officers experience operations that often dictate required equipment. Unfortunately, these types of operations are very dynamic in nature and may require flexibility and adaptability by both the individual operator, as well as the operator’s equipment. Additionally, operators conducting similar missions may have different personal preferences.

[0003] An objective of the current design is to provide a single gun sling constructed with typical sling strapping material that adapts to the individual operator’s preferences regardless of training discipline or mission requirements. The gun sling is sufficiently modular in nature to perform the functions of both a single-point bungee style sling and as a two-point quick-adjust style sling without compromising either technique. An extendable portion may be replaced with a non-extendable portion that can be made with typical sling strapping material. The extendable portion may be a loop of bungee cord or other extendable material.

SUMMARY OF THE DISCLOSURE

[0004] Described herein is a gun sling for carrying a rifle, shotgun or other long gun that is adjustable to serve as a bungee-style single-point sling and as a two-point quick adjust sling. This is achieved by utilizing a stretchable ring (bungee or “shock-cord”) at one end of the sling, which serves a dual purpose as a stretchable portion of the sling and as a connection junction for the single-point mode. When the sling is configured in single-point mode, the stretchable (bungee) ring permits the operator to quickly extend the long gun as a striking weapon without jarring the operator’s body forward. In an alternative embodiment, the bungee ring section may be replaced by a fixed length, non-extendable section. In another alternative embodiment, the bungee ring may be replaced by a length of an extendable material such as elastic.

[0005] The long gun sling is comprised of three main sections: a first attachment section, a stationary strap length section, and a quick-adjustment section. The first attachment section may include an extendable portion, such as a bungee ring section, and includes a hook type connector to attach the sling to the rear of the rifle and which can be utilized in single-point and two-point configurations. The first attachment section attaches to the rear of the rifle at one end and to the stationary strap section of the sling at the other. The stationary strap section is comprised of a length of strapping and serves as a predominantly stationary portion of the sling; however, length can be adjusted manually dependent on the desired length. Additionally, this length of strapping also serves as the location to attach a removable shoulder pad accessory. The quick-adjustment section permits desired length adjustment by the operator with a single hand without removal of the weapons system from the operator’s body. The quick-adjustment section attaches to the stationary strap section of the sling at one end, and the other end attaches to either a forward position on the rifle for two-point mode, or to the bungee ring for single-point mode.

[0006] An objective of the current disclosure is to provide a single gun sling that adapts to the individual operator’s preferences and mission requirements regardless of training discipline. The gun sling is sufficiently modular in nature to perform the functions of both a single-point style sling as well as two-point quick-adjust style slings without compromise of either technique or operator safety due to more complicated sling systems. The gun sling is user configurable and does not limit the operator’s techniques promoting greater tactical efficiency over competing gun sling systems.

[0007] The accompanying diagrams and descriptions will aid in the visualization of the described features, and functionality of the device.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] FIG. 1A is a plan view of an embodiment of the gun sling laid out flat.
[0009] FIG. 1B is a plan view of a detachable shoulder pad that can be attached to the gun sling of FIG. 1A.
[0010] FIG. 1C is a plan view of a stock adapter accessory.
[0011] FIG. 1D is a plan view of a non-extendable connector that can be substituted for the bungee ring accessory.
[0012] FIG. 1E is a plan view depicting the non-extendable connector of FIG. 1D attached to stationary strap length of the gun sling in place of the bungee ring accessory.
[0013] FIG. 2 depicts the sling in single-point bungee configuration attached to a weapon system.
[0014] FIG. 3 depicts the sling in two-point configuration attached to a weapon system.
[0015] FIG. 4 depicts the sling with an alternative single-point mount attached to a weapons system.
[0016] FIG. 5 depicts the sling in single-point configuration attached to a weapons system as worn by a right-handed operator.
[0017] FIG. 6 depicts the sling in transition from single-point configuration to two-point configuration.
[0018] FIG. 7 depicts the sling in two-point configuration.
[0019] FIG. 8 depicts the weapon stowed on the operator’s back with the muzzle pointed in a safe direction.
[0020] FIGS. 9, 10 and 11 are a series of views depicting the sequential operation of the quick-detach mechanism.
[0021] FIG. 12 is a perspective view of one embodiment of the handle portion of the sling.
[0022] FIG. 13 is a perspective view of a tri-glide adjuster with the end of the strap tucked back.
DESCRIPTION OF THE DISCLOSED EMBODIMENT

[0023] FIG. 1A is an illustration of the gun sling 12 laid out flat and depicting three sections denominated as the first attachment section 14, the stationary strap section 16 and the quick adjustment section 18. The boundaries between the three sections are only approximations for the purpose of illustration, as the lengths of the sections may be varied depending on weapon system configuration and adjustments that can be made by the operator. FIGS. 1B, 1C and 1D show alternate accessories including a detachable shoulder pad 30 that can be affixed to the stationary strap section 16 of the gun sling 12 for added comfort or for use with larger weapon systems such as a squad automatic weapon (M249) and other similar weapon systems. Other accessories include a stock adaptor 31 (FIG. 1C) for use with weapon systems that do not have a sling attachment point between the stock and the receiver, and a non-stretchable, quick-detachable non-extendable connector 34 (FIG. 1D), which can be utilized as an alternate accessory in the first attachment section 14. It includes a snap shackle 23, snap shackle strap 25 and attachment loop 27. In an alternative embodiment, snap shackle strap 25 could include an extendable portion or its entire length could be made of an extendable material such as elastic. Attachment loop 27 attaches to stationary strap length 42 in place of the bungee ring accessory 20. Alternatively, the snap shackle strap 25 and the attachment loop 27 could be omitted entirely with the snap shackle 23 being attached directly to the stationary strap length 42. The dashed lines 48 in this and other figures represent stitching commonly used to attach an end of a strap of the kind disclosed herein to the body of the strap to form a loop. The strap of the disclosed embodiment is made with typical strapping material known to persons skilled in the art.

[0024] The stationary strap length 42 is a single length of strapping that begins with it being attached to the single loop buckle 46, then passing through the tri-glide adjuster 44, then looping around the bungee ring 29 and then passing again through the tri-glide adjuster 44. The end of the stationary strap length 42 may be secured by folding it back around and through the tri-glide adjuster 44 as is shown in FIG. 13, which promotes a more secure fit and reduces the possibility of a sag hazard presented by excess material. The same technique can be used with second tri-glide adjuster 60. The attachment to the single loop buckle 46 can also be seen in FIG. 12, where the end of the strap is fused to the body of the strap with an adhesive, stitching or welded by other means. The length of the stationary strap length 42 may be adjusted at the tri-glide adjuster 44. Once adjusted by the operator according to his preference, the stationary strap length 42 will generally remain at that length during an operation. In FIG. 12, the stationary strap length 42 is shown attached to the single loop buckle 46 having one end of the strap length 42 passing through the single loop buckle 46 and then the end being fused to the strap length 42.

[0025] The bungee ring accessory 20 serves a dual purpose: as a single quick-detachable point, when in two-point configuration; and, as a connection junction for single point mode. When the bungee ring accessory 20 is utilized in the single-point configuration, it enables the momentary extension of the weapon system by the operator and the ability to release the weapon system from the operator’s body in the event of an emergency.

[0026] The first attachment section 14 may have a bungee ring accessory 20 that is quickly detachable from the weapon. FIGS. 9, 10, and 11 are a series of views depicting the quick-detach feature of the bungee ring accessory 20 as used by an operator on an AR-style weapon system. The bungee ring accessory 20 includes a number of components starting with a snap-shackle 22 that is attached to a receiver plate sling mount 36 usually located between the stock/receiver extension 38 and the receiver 40. FIGS. 9, 10 and 11 depict only a portion of the stock/receiver extension 38. As is shown in the drawings, the stock/receiver extension 38 includes a tubular portion attached to the receiver. Some long guns do not have such a tubular portion (see FIG. 4). The sling mount shown in the figures as receiver plate sling mount 36 could also be a sling mount attached to the stock as is known to those skilled in the art, and the snap-shackle 22 could be attached to such a sling mount on the stock. The operation of the system will be essentially the same irrespective of the type of sling mount on the firearm. The snap-shackle 22 depicted in the disclosed embodiment is a standard construction having a latch 23, release pin 24, pin ring 26 and snap-shackle tab 28. As is shown sequentially in FIGS. 10 and 11, the operator must pull the snap-shackle tab 28 to release the hardware from the receiver plate sling mount 36 on the weapon. Whether attached to the receiver plate sling mount 36, or attached in one of the alternative attachment configurations discussed in this disclosure, the snap-shackle 22 operates as discussed above.

[0027] The bungee ring accessory 20 also includes a snap-shackle strap 25 and a bungee ring 29. The snap-shackle strap 25 connects the snap-shackle 22 to the bungee ring 29. In the disclosed embodiment, the bungee ring 29 is shown having a junction 29a, but the junction 29a may be eliminated if a continuous loop of extendable material is used.

[0028] Referring again to FIG. 1A, the stationary strap section 16 includes a stationary strap length 42 that has one end affixed to the single-loop buckle 46. The other end passes through a tri-glide adjuster 44, then looped around the bungee ring 29, then passes back through the tri-glide adjuster 44 and can then be manually adjusted using the tri-glide adjuster 44. Other adjusters can be substituted for the tri-glide adjuster depicted in the figures. The single-loop buckle 46 is a strap-reciprocating point coupled to the quick-adjustment strap length 52 and is the pivot point for the operator to single handedly adjust the sling length in an instant, without removing the sling from the operator’s body.

[0029] The quick-adjustment strap section 18 comprises a quick adjustment strap length 52 with a standard trigger-snap 54 or similar attachment hardware near one end of the strap length with a strap adjustor 56 or other similar hardware fitted to the quick adjustment strap length 52. The strap adjustor 56 has a single handle 58 attached to it and the strap adjustor 56 temporarily locks the quick adjustment strap length 52 in the desired increment of length. Pulling the handle 58 in one direction lengthens the strap length 52 and pulling the handle 58 in the opposite direction shortens the strap length 52.

[0030] FIG. 12 is a perspective view of a portion of the modular gun sling showing the quick adjustment strap length 52 passing through the strap adjustor 56. One end of quick adjustment strap 52 is fastened to the strap adjustor 56 at attachment rib 55. In the disclosed embodiment, this is accomplished by passing an end of the quick adjustment strap 52 around attachment rib 55 and stitching the end of the quick adjustment strap 52 to the body of the quick adjustment strap.
with stitching 48, but other attachment means could be used, such as an adhesive or rivets. The quick adjustment strap 52 then passes through the single loop buckle 46, then back to strap adjuster 56 where it passes upwardly (relative to the figure) through first slot 59, then passes downwardly through second slot 61, then through second tri-glide adjuster 60 (see FIG. 1), then around the attachment bar of trigger-snap assembly 53 and finally back through second tri-glide assembly 60. The length of quick adjustment strap 52 can be initially adjusted by means of the second tri-glide assembly 60, but thereafter the length of quick adjustment strap 52 can be quickly adjusted by pulling on handle 58 in one direction or the other. The handle 58 is attached to an interior rib 57 on the strap adjustor 56. In this embodiment, it is a single piece of strapping that loops around the interior rib 57 with the ends stitched together. The handle 58 depicted in the disclosed embodiment is a single example of one possible design of a handle. In this embodiment, the handle 58 is constructed of strapping similar to the strapping used in the stationary strap section 16 and the quick adjustment section 18. However, handle 58 may be made of other materials, for example, a rubberized handle cover or webbing, or a rigid or semi-rigid section of a polymer material. Furthermore, the handle 58 may be attached to the strap adjustor with other means such as a pivot pin or it may be rigidly attached. In this disclosure, a flexible handle 58 is preferred because it is less likely to cause interference during an operation.

FIG. 1E depicts one of the modular features of the disclosed embodiment. It shows that the non-extendable connector 34 can be substituted for the bungee ring accessory 20 in the first attachment section 14. The operator can simply detach an end of the stationary strap length 42 from the tri-glide adjuster 44, slide the bungee ring accessory 20 off and replace it with the non-extendable connector 34 with stationary strap length 42 passing through attachment loop 27. Additionally, this configuration permits full usage of the sling in both single-point and two-point modes. For single point mode, trigger-snap 54 can be attached to the attachment loop 27.

FIG. 2 depicts the sling in single-point bungee configuration. The sling 12 is attached to the weapon system by use of a common receiver plate sling mount 36 attached to the rear of the lower receiver 40 of AR-style platforms. This configuration utilizes the bungee ring accessory 20 as a connection junction for the trigger-snap 54. This mode permits full use of the bungee ring accessory 20 to momentarily extend the weapon system (as utilized during execution of a muzzle strike), and limited use of the quick-adjust mechanism comprising the strap adjustor 56 and the handle 58.

The modular construction of the disclosed sling allows for various attachment possibilities depending on the type of firearm being used and the operator’s preferences. For example, the first attachment section 14 could be omitted entirely with the strap 42 pulled through the muzzle end sling mount 70, or through the receiver plate sling mount 36, without using any hook type connector. In the same manner, the trigger-snap assembly 53 could be omitted entirely, with quick adjustment strap length 52 pulled through the receiver plate sling mount 36, or the muzzle end sling mount 70. However, as is known to those skilled in the art, a firearm can have sling attachment points at various places on the firearm, not only the attachment points depicted in the disclosed embodiment. For example, a shotgun may have an attachment loop affixed to the body of the stock and another attachment loop affixed to the magazine tube near the muzzle end of the firearm. The modular construction of the disclosed sling allows it to be attached to many types of firearms in several different ways.

FIG. 3 depicts the sling 12 in two-point configuration on an AR-style weapon system. The sling 12 is attached to the rifle at the muzzle end sling mount 70, which is depicted as a common loop style forward sling mount, by attaching the trigger-snap 54 to the muzzle end sling mount 70. FIG. 3 also shows the sling 12 mounted to the rifle near the rear of the weapon via the quick-release snap-suckle 22 at a receiver plate sling mount 36. Additional ways of attaching the sling 12 include weaving the strap through an open butt stock (not pictured), by use of the stock adapter accessory 31 (FIG. 1C), or use of other standard rifle sling hardware (not pictured) found on conventional rifles and shotguns. This mode permits full use of the quick-adjust mechanism comprising handle 58 and strap adjustor 56 as depicted in FIG. 4.

FIG. 4 depicts the sling utilized in single-point configuration on a weapons system that does not have a suitable single mount at the rear of the weapon near the receiver. Such weapons include AK-series weapons, shotguns or similar conventional weapons systems. The sling 12 is attached to the weapon system by use of the stock adapter accessory 31. The stock adapter accessory strap 33 is looped around the stock as shown in FIG. 4 and the latch 23 is attached to the stock adapter accessory ring 32. Alternatively, trigger-snap 54 can be attached to stock adapter accessory ring 32. Use of the stock adapter accessory 31 also permits the use of the sling in two-point configuration on weapons systems that have an additional forward positioned sling mount as is depicted in FIG. 3.

FIG. 5 depicts the sling 12 worn in single-point configuration by a right-handed operator. This configuration permits full utilization of the bungee ring accessory 20 (depicted in FIG. 2) to momentarily extend the weapons system for use with specialized close quarters combat techniques such as muzzle strikes.

FIG. 6 depicts the sling 12 in transition from single-point configuration to two-point configuration. The operator single-handedly detaches the trigger-snap 54 from the bungee ring 29 and reattaches it to a muzzle end sling mount 70 at the muzzle end of the weapon system.

FIG. 7 depicts the sling in two-point configuration. This mode permits full utilization of the quick-adjust mechanism comprising the handle 58 and the strap adjustor 56 by the operator to extend or shorten the desired length of the sling 12 during use.

FIG. 8 depicts the weapon stowed on the operator’s back with the muzzle pointed in a safe direction. Additionally, the quick-adjust mechanism can be fully utilized to snug the weapon to the operator’s body. This technique can also be utilized on the front of the operator’s body.

While the above description contains many specifics, these should not be construed as limitations on the scope of disclosure, but rather as an exemplification of the embodiments therein. It is to be understood that the invention is not limited to these specific embodiments. Accordingly, the invention is not limited to the precise embodiments described in detail hereinabove. With respect to the claims, it is applicant’s intention that the claims not be interpreted in accordance with the sixth paragraph of 35 U.S.C. §112 unless the term “means” is used followed by a functional statement.
Further, with respect to the claims, it should be understood that any of the claims described below may be combined for the purposes of the invention.

1. A modular sling attachable to a firearm having a stock end and a muzzle end, said firearm having either one sling attachment point in the vicinity of the stock end or a plurality of sling attachment points, at least one of said plurality of attachment points located in the vicinity of the stock end and at least another one of said plurality of attachment points located in the vicinity of the muzzle end, comprising:
   a removable first attachment section on the modular sling for attaching the modular sling to a sling attachment point in the vicinity of the stock end of the firearm;
   a stationary strap section attached to the first attachment section;
   a quick adjustment section attached to the stationary strap section;
   a connector on said quick adjustment section for attaching the quick adjustment section to an attachment point; and
   said connector adapted to be attachable to the first attachment section.

2. The modular sling of claim 1 wherein the first attachment section includes an extendable portion.

3. The modular sling of claim 2 wherein the extendable portion includes a loop of extendable material at least a portion of which is exposed.

4. The modular sling of claim 1 wherein the first attachment section includes a strap of non-extendable material.

5. A sling attachable to a firearm having a stock end and a muzzle end, said firearm having either a single sling attachment point in the vicinity of the stock end or a plurality of sling attachment points at least one of said plurality of attachment points being located in the vicinity of the stock end and at least another one of said plurality of attachment points being located in the vicinity of the muzzle end, comprising:
   a first attachment section for attaching to a sling attachment point in the vicinity of the stock end and including a loop of extendable material at least a portion of which is exposed;
   a quick adjustment strap section having an adjustable length; and
   the quick adjustment strap section having a strap length adjustor.

6-8. (canceled)

9. The sling of claim 5 wherein the strap length adjustor includes a handle having two ends, one end attached to the strap length adjustor and one end free.

10. (canceled)

11. The sling of claim 5 wherein the first attachment section includes a first hook type connector for attachment to a first sling attachment point.

12. The sling of claim 5 wherein the quick adjustment strap section includes a second hook type connector for attachment to a second sling attachment point.

13. The sling of claim 9 wherein the handle is constructed with flexible strapping material.

14. The sling of claim 9 wherein the handle includes a rigid component.

15. The sling of claim 9 wherein the handle includes a semi-rigid component.

16. The sling of claim 9 wherein the handle includes a rubberized covering.

17. The sling of claim 12 wherein the second hook type connector of claim 12 is adapted to connect to a portion of the first attachment section.

18. The sling of claim 12 wherein the second hook type connector is adapted to connect to the first hook type connector.

19. (canceled)

20. A sling for supporting a firearm, the firearm having either a single sling attachment point or a plurality of sling attachment points, comprising:
   the sling having a length, a first end and a second end;
   an extendable portion on the sling;
   the extendable portion nearer to the first end of the sling than to the second end of the sling;
   the extendable portion including a loop of extendable material at least a portion of which is exposed;
   a first attachment means coupled to the sling near the first end;
   a second attachment means coupled to the sling near the second end;
   the first attachment means configured to be attachable to one sling attachment point on the firearm;
   the second attachment means configured to be attachable to a second sling attachment point on the firearm;
   the second attachment means additionally configured to be attachable to an exposed portion of the loop of extendable material;
   a quick adjustment section having an adjustable length;
   the quick adjustment section having a strap length adjustor including a handle having two ends, one end attached to the strap length adjustor and one end free;
   wherein the sling is adapted to be attached to two attachment points on a firearm having a plurality of attachment points or to a single attachment point on a firearm having one or a plurality of attachment points.

21. A modular sling attachable to a firearm, said firearm having either one sling attachment point or a plurality of sling attachment points, comprising:
   an attachment module;
   a stationary strap module;
   a quick adjustment module;
   the attachment module including a connector attachable to a sling attachment point;
   the quick adjustment module including a connector attachable to a sling attachment point;
   the quick adjustment module further including a strap, a strap length adjustor on the strap and a handle coupled to the strap length adjustor, whereby when the handle is pulled in one direction the length of the strap increases and when the handle is pulled in the opposite direction the length of the strap decreases; and
   the handle having two ends, one end attached to the strap length adjustor and one end free.

22. The modular sling of claim 21 wherein the attachment module includes an extendable portion including a loop of extendable material at least a portion of which is exposed.

23-24. (canceled)

25. The modular sling of claim 22 wherein the connector on the quick adjustment module is attachable to the loop of extendable material.

26-28. (canceled)

29. The modular sling of claim 21 wherein the attachment module is removable from the sling prior to the sling being attached to the firearm.
30. The modular sling of claim 21 wherein the stationary strap module is adjustable in length.
31. The modular sling of claim 21 wherein the stationary strap module is positioned between the attachment module and the quick adjustment module.
32-33. (canceled)
34. The modular sling of claim 1 wherein the removable first attachment section may be omitted.
35. The modular sling of claim 1 wherein the connector on the first attachment section is a tri-glide assembly.
36. The modular sling of claim 1 wherein the removable first attachment section includes an attachment hook for attaching to the firearm.
37. The modular sling of claim 2 wherein the extendable portion includes a loop of extendable material.
38. The modular sling of claim 1 including a detachable shoulder pad affixed to the stationary strap section.
39. The modular sling of claim 9 wherein the strap adjuster further comprises a first slot and a second slot in the strap adjuster; the quick adjustment strap passing in one direction through the first slot and in the relatively opposite direction through the second slot, wherein when the handle is pulled the strap adjuster moves along the quick adjustment strap altering the length of the quick adjustment strap.
40. The modular sling of claim 1 further comprising a tri-glide adjuster on the stationary strap section for permitting the first attachment section to be removed.
41. The modular sling of claim 1 further comprising a tri-glide adjuster on the quick adjustment section for permitting the connector on the quick adjustment section to be removed.
42. The modular sling of claim 1 wherein the connector on the quick adjustment section is a hook type connector.