PIVOTABLE ACCESSORY MOUNT

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ABSTRACT
An accessory mount for a firearm includes a base and an accessory receiver adapted for rotation about an adjustment axis with respect to the base. According to one embodiment, the base is secured to a mounting rail secured to the firearm and includes first and second portions removable attached to each other by a fastener to facilitate attachment of the base to the mounting rail. According to one embodiment, a pin is received by the base and by spaced support members of the accessory receiver to provide a rotatable connection. A locking mechanism locks the accessory receiver against relative rotation with respect to the base in one of a plurality of angular positions.
FIG. 6
FIG. 13
PIVOTABLE ACCESSORY MOUNT

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims priority from U.S. provisional application No. 60/850,936, filed Oct. 11, 2006, the entire disclosure of which is hereby incorporated by reference.

FIELD OF THE INVENTION

[0002] The present invention relates generally to firearms accessories and, more particularly, to a pivotably adjustable accessory mount for mounting an accessory to a firearm.

BACKGROUND OF THE INVENTION

[0003] It is known to provide an accessory mount for attaching an accessory, such as an illumination light, to a firearm. Accessory mounts typically include a base portion having a mounting rail that is secured to the firearm. The mounting rail (e.g., a Picatinny or Weaver rail) provides a standardized mounting platform for attachment of accessories to a firearm.

SUMMARY OF THE INVENTION

[0004] According to the present invention, an accessory mount is provided for mounting an accessory, such as a light, to a mounting rail on a firearm. The accessory mount is pivotable to the rail to provide selection of the angular orientation of the light with respect to the firearm.

[0005] The accessory mount includes an accessory receiver adapted for receiving and supporting an accessory. According to one embodiment, the accessory receiver includes a body defining a rounded bore for receiving an accessory having a rounded exterior surface. The accessory mount also includes a base adapted for attachment to a rail mount system. According to one embodiment, the base includes opposite legs each defining a notch for receiving opposite side edges of the rail system in the manner of a dovetail connection.

[0006] The accessory receiver is rotatably connected to the base for selected angles of rotation with respect to the rail. According to one embodiment, the base is received between spaced support posts of the receiver. The accessory mount includes a pin received in aligned openings in the support posts of the receiver and passes through a bore defined by the base for rotatably connecting the receiver to the base.

[0007] The accessory mount includes a locking mechanism adapted for locking the receiver and the base against relative rotation in one of multiple selected angular positions. According to one embodiment, the locking mechanism includes tab projections carried by one of the receiver and the base adapted for receipt in slot openings defined by the other one of the receiver and the base. According to one presently preferred embodiment, the tab projections are located on one of the support posts of the receiver and are received in slot openings defined by the base.

[0008] The accessory mount preferably includes a spring arranged to urge the tab projections and slot openings of the locking mechanism towards each other for securing the accessory receiver to the base in one of the angular positions. According to one embodiment, the spring is a compression spring received on the pin and contacting a first support post of the receiver and the base at opposite ends of the spring to bias the base towards the second support post of the receiver.

[0009] According to one embodiment, the base of the accessory mount includes a leg defining a rail-receiving notch that is removably attached to the base to facilitate attachment of the base to a rail mounting system. Preferably, the leg of the base is attached using a fastener.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] For the purpose of illustrating the invention, the drawings show a form of the invention that is presently preferred. However, it should be understood that this invention is not limited to the precise arrangements and instrumentalities shown.

[0011] FIG. 1 is a side view of a pivotable accessory mount according to the present invention received on an accessory rail secured to a pistol model, the accessory mount supporting a light such that the light is located beneath the barrel of the pistol model substantially in line with the barrel and the grip of the pistol model.

[0012] FIG. 2 is a front perspective view of the accessory mount, rail, light, and pistol model of FIG. 1.

[0013] FIG. 3 is an enlarged front perspective view of the accessory mount, rail, light, and a portion of the pistol model of FIG. 1.

[0014] FIG. 4 is a rear perspective view of the accessory mount, rail, light and a portion of the pistol model of FIG. 1.

[0015] FIG. 5 is a front end view of the accessory mount, rail, and pistol model of FIG. 1 shown without the light.

[0016] FIG. 6 is a front perspective view of the accessory mount, rail, light and pistol model of FIG. 1, an accessory receiver of the accessory mount pivoted approximately 45 degrees in a clockwise direction, when viewed from the front (i.e., barrel) end of the pistol model, with respect to a base of the accessory mount from the position shown in FIGS. 1 through 5.

[0017] FIG. 7 is a front end view of the accessory mount, rail, and pistol model of FIG. 6 shown without the light.

[0018] FIG. 8 is a front end view of the accessory mount, rail, and pistol model of FIG. 1 shown without the light and with the accessory receiver of the accessory mount pivoted approximately 90 degrees in a clockwise direction, when viewed from the front end of the pistol model, with respect to the base of the accessory mount from the position shown in FIGS. 1 through 5.

[0019] FIG. 9 is a front end view of the accessory mount, rail, and pistol model of FIG. 1 shown without the light and with the accessory receiver of the accessory mount pivoted approximately 90 degrees in a counter-clockwise direction, when viewed from the front end of the pistol model, with respect to the base of the accessory mount from the position shown in FIGS. 1 through 5.

[0020] FIG. 10 is a side perspective view of the accessory mount of FIGS. 1 through 9 removed from the rail and pistol model shown with the base of the accessory mount in an engaged position with respect to the accessory receiver of the accessory mount.

[0021] FIG. 11 is a rear perspective view of the accessory mount of FIG. 10 shown with the base of the accessory mount retracted with respect to the accessory receiver of the accessory mount from the engaged position of FIG. 10.

[0022] FIGS. 12 and 13 are side views of the accessory mount of FIG. 11 showing tab projections of the accessory receiver of the accessory mount, the accessory mount shown with a portion of the base removed for clarity of view.
FIG. 14 is an end view of the base of the accessory mount illustrating slot openings of the base adapted for receipt of the tab projections of the accessory receiver.

FIG. 15 is a partial view of the accessory receiver of the accessory mount illustrating the tab projections of the accessory receiver.

FIG. 16 is a top perspective view of the accessory mount showing the base of the accessory mount.

DETAILED DESCRIPTION OF THE INVENTION

Referring to the drawings, where like numerals identify like elements, there is shown an accessory mount 10 according to an exemplary embodiment of the invention. The accessory mount 10 includes an accessory receiver 12 adapted to receive and support an accessory, such as a light 14, and a base 16 adapted for receipt by an accessory rail system, such as rail system 18. As described below in greater detail, the accessory receiver 12 of the accessory mount 10 is adapted for pivot with respect to the base 16 of the accessory mount 10, mount is adapted. To facilitate illustration of the invention, the accessory mount 10 is shown received by the accessory rail system 18, which has been secured to a plastic model 1911 pistol 20 with a mounting rail attached forward of the trigger guard. It should be understood, however, that the accessory mount 10 is not limited to use with any particular accessory rail system or on any particular firearm. Rail systems of the depicted type are available from Command Arms Accessories.

The accessory receiver 12 of the accessory mount 10 includes an elongated body 22 defining an inner bore 24. The inner bore 24 of body 22 has a rounded inner surface 26 facilitating receipt by the receiver 12 of an accessory having an elongated and generally rounded exterior such as the handle portion of a battery-powered light 14. It should be understood that the invention is not limited in scope to rounded bores receiving rounded accessories, however, and that bores and accessories having non-round configuration could be used.

The accessory receiver 12 includes a pair of support posts 28, 30 extending from one side of the body 22 of the receiver 12. As shown, the support posts 28, 30 are spaced apart from each other to provide for receipt of the base 16 of the accessory mount 10 between the support posts 28, 30. As may be seen in FIG. 10, the accessory mount 10 includes an elongated pin 32 for rotatably connecting the base 16 of the accessory mount 10 between the support posts 28, 30 of the accessory receiver 12. The pin 32 is received in aligned openings of the support posts 28, of the accessory receiver and through a bore 34 defined by the base 16.

The accessory mount 10 includes a compression spring 36 received on the pin 32. The compression spring 36 contacts support post 28 of accessory receiver 12 at one end of the spring 36 and an annular shoulder defined within the bore 34 of the base 16 at an opposite end of the spring 36. As should be understood, the action of the compression spring tends to urge the base 16 of accessory mount 10 away from support post 28 of accessory receiver 12 and towards support post 30.

Referring to FIGS. 11-15, the accessory mount 10 includes a locking mechanism 38 adapted for locking the accessory receiver 12 and base 16 of the accessory mount 10 against relative rotation in one of a plurality of preset angular positions. The locking mechanism 38 includes tab projections 40 carried by support post 30 that are adapted for receipt by slot openings 42 defined by the base 16. As shown in FIG. 15, the support post 30 includes three tab projections 40 angularly spaced from each other at 90 degree intervals about a lower half of the pin 32 (from the point of view shown in FIG. 15). As shown in FIG. 14, the base 16 of accessory mount 10 includes 8 slot openings 42 spaced from each other at 45 degree intervals about a centrally-located circular recess 44. This arrangement provides preset angular positions located at 45 degree intervals in which the tab projections 40 can engage the slot openings 42 to lock the receiver 12 and base 16 against relative rotation. It should be understood that it is not required that the support post 30 include 3 tab projections 40 and that the support post 30 could include only one tab projection 40 to provide the desired locking feature. The inclusion of 3 tab projections 40 as shown, however, provides added stability and balance for the locking mechanism 38.

To operate the locking mechanism 38, a user applies force to the receiver 12 to overcome the biasing force of the compression spring 36 to draw the base 16 away from the support post 30 and toward support post 28. In this condition, which is shown in FIGS. 11-13, the tab projections 40 are retracted (i.e., disengaged) from the slot openings 42, thereby permitting relative rotation between the receiver 12 and base 16 of the accessory mount 10.

Referring to FIGS. 1 through 4, the accessory mount 10 is shown in a first position in which the receiver 12 is located below the barrel of the pistol model 20 (from the point of view shown in FIG. 5) substantially in line with both the barrel and the grip of the pistol model 20. Referring to FIGS. 14 and 15, the first position would result if the tab projections 40 of the locking mechanism 38 inserted into the slot openings 42 of the locking mechanism 38 in the orientation shown in FIGS. 14 and 15.

Referring to FIGS. 6 and 7, the accessory receiver 12 of the accessory mount 10 has been pivoted with respect to the base 16 of the accessory mount 10 to a second position. As shown in FIG. 7, the second position for the accessory receiver 12 is located 45 degrees in a clockwise direction (from the point of view shown in FIGS. 5 and 7) from that of the first position.

Referring to FIG. 8, the accessory receiver 12 of the accessory mount 10 has been pivoted with respect to the base 16 to a third position. As seen by comparing FIGS. 5 and 8, the third position for the accessory receiver 12 is located 90 degrees in a clockwise direction (from the point of view shown in FIGS. 5 and 8) from that of the first position.

Referring to FIG. 9, the accessory receiver 12 of the accessory mount 10 has been pivoted with respect to the base 16 to a fourth position. As seen by comparing FIGS. 5 and 9, the fourth position for the accessory receiver 12 is located 90 degrees in a counter-clockwise direction (from the point of view shown in FIGS. 5 and 9) from that of the first position. It should be understood that the accessory receiver 12 of the accessory mount 10 is also adapted to locate the accessory receiver 12 in a fifth position (not shown) with respect to the base 16 in which the accessory receiver 12 is located 45 degrees in a counter-clockwise direction (from the point of view shown in FIG. 5) from that of the first position.

The number of slot openings 42 provided in the base 16 of the accessory mount 10 could be varied from that shown such that the number of potential positions could be varied. Also it is not required that the tab projections 40 are included on the receiver 12 for engagement with slot openings 42 on the base 16. The interfitting elements of the locking mecha-
nism 38 could be switched such that slot openings are defined by the receiver 12 for receiving tab projections carried by the base 16.  

[0037] The base 16 of accessory mount 10 includes first and second legs 46, 48 located on opposite sides of the base 16. Each of the legs 46, 48 defines an elongated notch 50 on an inner surface of the leg 46, 48. As shown in FIG. 5 for example, the notches 50 in the base legs 46, 48 are adapted to receive opposite side edges of the rail system 18 in the manner of a dove-tail connection for securing the base 16 to the rail system 18. As described above, the rail system 18 is known and no further description is needed.  

[0038] Referring to FIGS. 13 and 16, the second leg 48 of base 16 is removably secured to the base 16 to facilitate attachment of the base to rail system 18. As shown in FIG. 16, the base 16 of accessory mount 10 includes a fastener 52 for securing the second leg 48 to the base 16. In FIG. 13, the base 16 is shown with the second leg 48 removed.  

[0039] The foregoing describes the invention in terms of embodiments foreseen by the inventor for which an enabling description was available, notwithstanding that insubstantial modifications of the invention, not presently foreseen, may nonetheless represent equivalents thereto.  

What is claimed is:  

1. An accessory mount for a firearm comprising:  
a base adapted for mounting onto a firearm; and  
an accessory receiver adapted for receiving and supporting  
a firearm accessory, the accessory receiver adapted for rotation about an adjustment axis with respect to the base for adjusting the angular orientation of the accessory receiver.  

2. The accessory mount of claim 1, wherein the base is received on an accessory mounting rail secured to the firearm.  

3. The accessory mount of claim 2, wherein the base defines an interior having angled surfaces providing a dove-tail connection with the accessory mounting rail.  

4. The accessory mount of claim 1, wherein the accessory receiver includes an elongated body defining an inner bore for receiving an elongated portion of the firearm accessory.  

5. The accessory mount of claim 1, wherein the accessory receiver includes a pair of support members spaced apart from each other such that the base is located between the support members, and wherein the accessory mount includes an elongated pin received by the support members and the base along the adjustment axis for rotatably connecting the accessory receiver to the base.  

6. The accessory mount of claim 5 further comprising a locking mechanism for locking the accessory receiver with respect to the base in one of a plurality of angular positions.  

7. The accessory mount of claim 6, wherein the locking mechanism includes a plurality of projections defined by either one of the base and the accessory receiver and a plurality of openings defined by the other one of the base and the accessory receiver, the projections adapted for receipt by the openings such that relative rotation between the accessory receiver and the base is limited.  

8. The accessory mount of claim 7, wherein the projections are defined on one of the support members of the accessory receiver and the openings are defined by the base.  

9. The accessory mount of claim 7, wherein the pin is slidably received by the base to provide for relative longitudinal movement between the base and the accessory receiver along the adjustment axis for movement between an engaged position and a disengaged position of the locking mechanism, relative rotation between the accessory receiver and the base being respectively disabled and enabled when the locking mechanism is located in the engaged and disengaged positions.  

10. The accessory mount of claim 7, wherein the locking mechanism further includes a spring located between the base and one of the support members and adapted to bias the accessory receiver and base towards the engaged position for the locking mechanism.  

11. The accessory mount of claim 2, wherein the base includes first and second portions removably secured to each other by a fastener to facilitate a releasable attachment between the base and the accessory mounting rail.  

12. An accessory mount for a firearm comprising:  
a base adapted for attachment to a mounting rail secured to the firearm;  
an accessory receiver adapted for receiving and supporting  
a firearm accessory, the accessory receiver adapted for rotation about an adjustment axis with respect to the base for adjusting the angular orientation of the accessory receiver; and  
a locking mechanism for locking the accessory receiver against relative rotation with respect to the base in one of a plurality of angular positions.  

13. The accessory mount of claim 12, wherein the locking mechanism includes a plurality of projections defined by either one of the base and the accessory receiver and a plurality of openings defined by the other one of the base and the accessory receiver, the projections adapted for receipt by the openings such that relative rotation between the accessory receiver and the base is limited.  

14. The accessory mount of claim 13, wherein movement between the plurality of angular positions is achieved by relative rotation between the plurality of projections and the plurality of openings of the locking mechanism about the adjustment axis.  

15. The accessory mount of claim 14, wherein the plurality of projections include eight tabs spaced about the adjustment axis at 45 degree intervals and wherein the plurality of openings include three slot openings spaced about one-half of the adjustment axis at 90 degree intervals.

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