The present invention relates to a rail cover for a firearm rail, and more particularly to a rail cover with a base and an insert. In one embodiment, a cover for a firearm rail includes a base with an upper portion and a lower portion. The lower portion has a groove dimensioned to engage a firearm rail. The cover also includes an insert for engaging the upper portion of the base. The upper portion of the base includes an overhang dimensioned to receive the insert. The groove retains the base to a firearm rail, and the overhang retains the insert to the base. The base is substantially rigid, and the insert is substantially flexible.
PROTECTOR FOR FIREARM RAIL

FIELD OF THE INVENTION

[0001] The present invention relates to a protector for a firearm rail, and more particularly to an improved rail cover with a base and an insert.

BACKGROUND

[0002] Many types of firearm systems include one or more mounting rails for mounting accessory components to the firearm. The mounting rail may be used for mounting various accessories such as lights, laser guides, sights, grips, communication devices, and other components. A standard firearm rail includes a T-shaped cross-section and a series of crosscuts or slots for mounting and locking accessory devices to the rail. An example of a standard firearm rail is the MIL-STD 1913 rail, also known as the Picatinny rail.

[0003] Rail covers have been provided in the prior art to cover firearm rails when the rails are not in use, in order to protect the rail from damage. However, many prior art rail covers have been difficult to use. Some rail covers are mounted to the rail with a metal clip that secures the cover to one of the slots in the rail. However, after repeated use, this metal clip may become bent or deformed, may rust, and/or may cause unwanted noise by rattling against the rail. If the metal clip does not retain the proper shape and curvature, it may no longer function to firmly lock the cover to the rail. Additionally, the length of these rail covers is limited by the size and spacing of the metal clip, and therefore a portion of the firearm rail may remain exposed and unprotected. Other prior art covers are secured in place by tape, wire, or ties that are not particularly durable or effective.

[0004] Accordingly, there is a need for an improved rail cover that protects the firearm rail from damage and is easy and convenient to use.

SUMMARY OF THE INVENTION

[0005] The present invention relates to a rail cover for a firearm rail, and more particularly to a rail cover with a base and an insert. In an embodiment, the rail cover includes a rigid base that slides into place on the firearm rail. The base includes two prongs on the bottom portion of the base, and the prongs engage opposite sides of the firearm rail. The base also includes two overhangs on the top portion of the base. After the base is slid into position on the firearm rail, the insert is assembled to the base by fitting the insert below the overhangs. The two overhangs retain the insert on the base. The insert includes a tab that extends through an opening in the base to fit within a slot or crosscut on the firearm rail, thereby locking the cover into position along the rail. This rail cover locks into place with just two components, the base and the insert, and without the use of extra clips, wires, tape, or ties. The rigid, durable base protects the rail underneath, while the more flexible insert provides a comfortable gripping surface on top of the rail. The rail cover can be made in any length, to cover the desired portion of the firearm rail. The flexible insert can also provide an enclosed pocket for an accessory device such as a pressure switch.

[0006] In one embodiment, a cover for a firearm rail includes a base with an upper portion and a lower portion. The lower portion has a groove dimensioned to engage a firearm rail. The cover also includes an insert for engaging the upper portion of the base. The upper portion of the base includes an overhang dimensioned to receive the insert. The groove retains the base to a firearm rail, and the overhang retains the insert to the base. The base is substantially rigid, and the insert is substantially flexible.

[0007] In one embodiment, a cover is provided for an accessory rail having at least one slot. The cover includes a rigid base with a bottom portion with first and second opposing bottom grooves dimensioned to accept such accessory rail. The base also has a top portion with first and second opposing top grooves. The cover also includes a flexible insert with first and second opposing side edges dimensioned to mate with the first and second opposing top grooves of the top portion of the rigid base, to retain the flexible insert to the rigid base. The flexible insert has a top surface and an underside, and the underside of the flexible insert includes a tab that is dimensioned to extend into such slot.

[0008] In one embodiment, a firearm system includes a firearm accessory rail comprising at least one slot, and a rail cover for the accessory rail. The rail cover includes a relatively rigid base with a bottom portion with a channel and a top portion with a cavity, and a relatively flexible insert comprising a tab. The accessory rail extends into the channel in the bottom portion of the base, thereby retaining the base to the rail. The insert is retained in the cavity of the top portion of the base. The tab extends through an opening in the base and into the slot in the accessory rail to secure the rail cover to the accessory rail.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] FIG. 1 is an exploded view of a firearm rail cover including a base and an insert according to an embodiment of the invention.

[0010] FIG. 2 is a perspective view of an assembled rail cover mounted to a firearm rail according to an embodiment of the invention.

[0011] FIG. 3 is a vertical cross-sectional view of the rail cover of FIG. 2, taken along the line 3-3 in FIG. 2.

[0012] FIG. 4 is a lower perspective view of an assembled rail cover including a base and an insert according to an embodiment of the invention.

[0013] FIG. 5 is a perspective view of a base of a rail cover being mounted on a firearm rail according to an embodiment of the invention.

[0014] FIG. 6 is a perspective view of the base of FIG. 5 mounted on the firearm rail.

[0015] FIG. 7 is a perspective view of the base of FIG. 6 during assembly with an insert, according to an embodiment of the invention.

[0016] FIG. 8 is a perspective view of the base and insert of FIG. 7 with the insert fully assembled.

[0017] FIG. 9 is a perspective view of a rail cover mounted on a firearm rail according to an embodiment of the invention.

[0018] FIG. 10 is a lower perspective view of the rail cover of FIG. 9.

[0019] FIG. 11 is an exploded view of a firearm rail cover including a base and an insert and an accessory device according to an embodiment of the invention.

[0020] FIG. 12 is a perspective view of a rail cover mounted to a firearm, according to an embodiment of the invention.

DETAILED DESCRIPTION OF THE INVENTION

[0021] The present invention relates to a rail cover for a firearm rail, and more particularly to a rail cover with a base and an insert. In an embodiment, the rail cover includes a rigid base that slides into place on the firearm rail. The base includes two prongs on the bottom portion of the base, and the prongs engage opposite sides of the firearm rail. The base also
includes two overhangs on the top portion of the base. After the base is slid into position on the firearm rail, the insert is assembled to the base by fitting the insert below the overhangs. The two overhangs retain the insert on the base. The insert includes a tab that extends through an opening in the base to fit within a slot or crosscut on the firearm rail, thereby locking the cover into position along the rail. The rail cover locks into place with just two components, the base and the insert, and without the use of extra clips, wires, tape, or ties. The rigid, durable base protects the rail underneath, while the more flexible insert provides a comfortable gripping surface on top of the rail. The rail cover can be made in any length, to cover the desired portion of the firearm rail. The flexible insert can also provide an enclosed pocket for an accessory device such as a pressure switch.

[0022] An embodiment of the rail cover is shown in FIG. 1. The rail cover 10 includes a base 12 and an insert 14. The base 12 includes a bottom portion 16, top portion 18, and a floor 20, as shown in FIG. 1. The base 12 is mounted to a firearm rail by sliding it into place over the rail with the floor 20 sitting above the rail. The bottom portion 16 of the base 12 includes two spaced-apart prongs 22a, 22b that extend down from the floor 20 and extend along the length of the base. The prongs 22a, 22b each create a groove 24a, 24b between the prong and the bottom surface of the floor 20. Each groove 24a, 24b accepts a side edge of the firearm rail. The space between the prongs forms a channel 26 through which the firearm rail slides when the base 12 is mounted onto the rail, as described in more detail below.

[0023] The top portion 18 of the base 12 includes two spaced-apart overhangs or lips 30a, 30b that extend along the length of the base. Each overhang 30a, 30b forms a groove 32a, 32b between the overhang and the floor 20. The overhangs create a cavity 28 between them, above the floor 20. The grooves 24a, 24b may be referred to as the bottom grooves (on the top portion 16), and the grooves 32a, 32b may be referred to as the top grooves (on the top portion 18).

[0024] Turning to the insert 14, the insert 14 includes a curved top surface 34 and an underside 36. The curved top surface 34 is the surface that the user grips when the rail cover 10 is mounted on the firearm rail and assembled. The underside 36 of the insert 14 includes one or more tabs 38 that extend down from the insert 14, away from the top surface 34. These tabs 38 engage crosscuts in the firearm rail to lock the rail cover to the rail, as described in more detail below. The tabs extend through corresponding openings 40 in the floor 20 of the base 12. The insert 14 optionally includes one or more cavities 42 formed in the underside 36 of the insert 14, to reduce the mass of the insert.

[0025] In one embodiment, the cavity 42 has a curved shape that matches the curved top surface 34 of the insert, so that the insert 14 has a substantially uniform thickness, rather than being thicker in the middle than at the edges. In other embodiments the insert has other shapes, thicknesses, and sizes. As shown in FIGS. 1-2, the insert 14 can be made as one integral piece, with the material continuously molded to form the shapes and outlines of the features such as the tabs 38 and cavities 42. In this instance, the insert 14 material is continuous and solid, and does not require multiple pieces to fit together to create the shape and features of the insert 14.

[0026] FIG. 2 shows an embodiment of the rail cover 10 mounted on a firearm rail 5 with the base 12 and insert 14 assembled. The base 12 is slid into place on the rail 5, with the rail passing through the channel 26 between the prongs 22a, 22b. The rail 5 has a T-shaped cross-section (see FIG. 3), with protruding side edges 7a, 7b. The rail also includes crosscuts or slots 9 extending between the side edges 7a, 7b. The side edges of the rail 5 fit into the grooves 24a, 24b (identified in FIG. 1) formed between each prong 22a, 22b and the bottom surface of the floor 20. In other embodiments, the firearm rail can take other shapes and have other cross-sections. In such embodiments, the bottom portion of the base 12, including the prongs and grooves, is modified as necessary to accommodate the rail and mount the base to the rail.

[0027] As shown in FIGS. 1-2, the insert 14 fits into the space 28 between the overhangs 30a, 30b. The insert 14 includes two opposite side edges 44a, 44b that fit into the grooves 32a, 32b formed by the overhangs 30a, 30b. The grooves 32a, 32b and side edges 44a, 44b having mating or mating profiles so that the insert 14 fits into the base 12. However, the particular shape of these profiles is not limited to that shown in FIG. 2. In other embodiments, the profile of the side edges and grooves may take other shapes, as long as the base 12 is shaped to receive and retain the insert 14. For example, in FIG. 2, the side edges 44a, 44b and overhangs 30a, 30b are substantially slanted, forming a mating dovetail tongue and groove. In FIG. 1, the side edges 44a, 44b include a rectangular flange 44c that fits into a corresponding rectangular notch 32c in the groove below the overhang. These are just examples of the different ways that the insert 14 can fit into the base 12. In other embodiments, the insert and base may have other matching or engaging profiles.

[0028] The curved top surface 34 of the insert 14 extends between the two overhangs 30a, 30b. In some embodiments, this top surface 34 may extend higher than the overhangs, curving up as a dome to a point in the middle of the insert 14, higher than the overhangs 30a, 30b (see FIG. 3). In one embodiment, the overhangs have a top surface 31 that is slanted, with a slope that matches the slope of the top surface 34 of the insert 14 where the insert meets the overhangs. In another embodiment, the top surface 31 of the overhangs is curved, with the same curvature as the top surface 34. In various embodiments, the overhangs 30a, 30b are shaped such that when the user grips the cover 10, the top surface of the cover feels like a continuous surface, rather than having an edge, bump, or break at the interface between the insert 14 and the overhangs. In another embodiment, an edge or break is present, so that the user can identify by tactile feel where the insert is located.

[0029] In another embodiment, the top surface 34 of the insert 14 is textured to provide enhanced grip for the user (as shown in FIGS. 1-2). The top surface 34 may include a tactile feature such as a textured pattern such as small bumps, ridges, or grooves, or a rough or granular surface. The top surface 34 may include deep ribbing for enhanced grip. In another embodiment the top surface 34 includes vertical barring, or a tread design such as a waffle tread or gear tread. The texturing and/or surface features may be included on only a portion or portions of the top surface 34, or across the entire top surface 34. Optionally, the top surface 31 of the overhangs is also textured, and may match the texture of the top surface 34. In another embodiment, the top surface 31 of the overhangs is textured differently than the top surface 34 of the insert 14, so that the user can identify by tactile feel where the insert is located.

[0030] As shown in FIG. 2, when the rail cover 10 is assembled, the insert 14 sits on the top surface of the floor 20. The underside 36 of the insert 14 may be contoured or curved, and/or may be hollowed out to include cavities such as cavity 42, so that portions of the insert 14 are not in contact with the base 12 along the surface of the floor 20. In other embodiments the insert 14 has a solid or smooth underside 36 that contacts the floor 20 along the entire area of the insert 14.
[0031] A cross-sectional view of the rail cover 10' on the rail 5 is shown in FIG. 3. This figure shows the interaction of the rail 5 with the base 12 and the base 12 with the insert 14. The side edges 7a, 7b of the rail 5 mate with the grooves 24a, 24b formed by the prongs 22a, 22b on the bottom portion of the base 12. The side edges 44a, 44b of the insert 14 mate with the grooves 32a, 32b formed by the overhangs 30a, 30b of the base 12. In this way, the base 12 engages both the rail 5 and the insert 14, with the bottom portion 16 of the base engaging the rail 5, and the top portion 18 of the base engaging the insert 14.

[0032] FIG. 3 also shows optional side extensions or wings 46 on the base 12. These extensions 46 extend out from the base 12 and increase the top area of the cover 10. In the embodiment shown, the extensions 46 curve downward into the base 12. The extensions provide additional protection for the rail 5 and the prongs 22a, 22b of the base 12, by extending out and curving over the prongs. The extensions also increase the top area of the cover, providing more grip for the user. The extensions may have a textured surface as described above, optionally matching the surface of the overhangs and/or the top surface 34 of the insert 14.

[0033] FIG. 4 shows a lower perspective view of the cover 10', according to one embodiment. The prongs 22a, 22b on the bottom portion 16 of the base 12 create the channel 26 for receipt of the firearm rail. The figure also shows the extensions 46 curving over the sides of the base 12.

[0034] FIG. 4 also shows the tabs 38 of the insert 14 passing through the base 12 to engage the firearm rail. In this particular embodiment, four tabs 38 are provided, although more or fewer tabs can be used in other embodiments. The tabs 38 extend downward from the underside of the insert 14, and they pass through corresponding openings 40 formed in the floor 20 of the base 12. The tabs 38 extend into the slots 29 in the firearm rail (see FIG. 2). When the tabs 38 extend into these slots 29, they prevent movement of the rail cover 10' along the length of the rail 5, thereby effectively locking the rail 5 onto its position along the rail 5. The tabs 38 each have a length and width that is dimensioned to fit into a corresponding slot 29 on the desired rail 5. If more than one slot 38 is provided, the slots spaced apart by a selected distance to correspond to the distance between slots 29 on the desired rail 5. This enables each tab 38 to fit into one of the slots 29. In one embodiment, the tabs 38, windows 40, and prongs 22a, 22b are dimensioned to fit within the M11.-STD 1913 rail.

[0035] Assembly of a rail cover 10 onto a firearm rail 5 is shown in FIGS. 5-8. First, as shown in FIG. 5, the base 12 is slid over the rail 5 from an open end of the rail. The prongs 22a, 22b on the bottom portion of the base 12 engage the side edges 7a, 7b of the rail 5, such that the rail can slide through the channel 26 between the prongs. The base 12 can slide along the rail 5 to any desired position along the rail. The prongs 22a, 22b allow the base to slide along the length of the rail, but they prevent the base from moving perpendicularly off the rail. The prongs hook the base onto the rail such that the only permitted movement of the base is a sliding movement along the length of the rail.

[0036] In one embodiment, the prongs 22a, 22b are substantially rigid, meaning that they do not flex in order to receive the rail 5 between them. The prongs are designed to substantially (although not necessarily exactly) match the cross-sectional profile of the rail, as described previously, so that they receive the rail between them (see FIG. 3). It is the mechanical mating of the prongs and the rail that mounts the base 12 to the rail, rather than any flexing or tension in the material of the base 12. In such an embodiment, the base 12 is made of a substantially rigid material such as a hard plastic material. In one embodiment the base 12 is made of a polymer such as a 15-30% glass-filled nylon. In another embodiment the base 12 is made of aluminum. These materials is substantially rigid, even though they may provide some small amount of flexure that is inherent in the material itself. The rigid, durable material of the base 12 protects the underlying rail 5 from damage, such as when the firearm is dropped or impacted.

[0037] Returning to the assembly of the cover onto the rail, FIG. 6 shows the base 12 positioned on the rail 5. After sliding the base 12 onto the rail from an open end of the rail (as shown in FIG. 5), the base 12 is slid to the desired longitudinal position along the length of the rail 5. The base 12 can be positioned at any desired location along the length of the rail 5. Once the base is at the desired location, it should be adjusted as necessary to align the openings 40 with the corresponding crosscuts 9. This alignment will enable the tabs 38 from the insert 14 to extend through the openings 40 into the crosscuts 9, to lock the base 12 and insert 14 to the rail 5 (as shown in FIGS. 7-8).

[0038] After the base 12 has been positioned as shown in FIG. 6, the insert 14 is then assembled to the base by clipping it below the overhangs 30a, 30b, as shown in FIG. 7. The insert 14 is assembled to the base 12 by inserting one side edge 44a of the insert below one overhang 30a of the base 12. The tab(s) 38 of the insert should be aligned with the opening(s) 40 in the base (see FIG. 6). The insert 14 is then pushed down to fit the opposite side edge 44b under the opposite overhang 30b. The final assembled cover 100 is shown in FIG. 8. The insert 14 is securely mounted to the base 12 by the overhangs 30a, 30b that retain the side edges 44a, 44b of the insert 14. The tabs 38 of the insert 14 extend into corresponding crosscuts 9, thereby preventing the cover 100 from sliding along the rail 5.

[0039] In one embodiment, the insert 14 is made of a material that is substantially flexible, and more flexible than the base 12. For example, in one embodiment the insert 14 is made from a soft or flexible polymer or an elastomer such as polyurethane or rubber. In another embodiment the insert 14 is made from a thermoplastic elastomer such as Santoprene™ (Exxon Mobil Corp., Irving, Tex.). In these embodiments, the insert 14 is flexible, so that it deforms when pressed, providing a comfortable grip for the user, and enabling the insert 14 to be inserted into the base 12 beneath the overhangs 30a, 30b. The insert is also resilient, so that it regains its shape after being depressed.

[0040] In one embodiment, the base is molded from nylon with a 15% glass fiber fill, and the insert is an elastomer material (such as Pelthane) with a shore hardness (durometer) of approximately 70. In another embodiment the hardness (durometer) is between about 48 and 70. In one embodiment the base is substantially rigid, and more rigid than the insert. In one embodiment the hardness of the base is above about 70, and the hardness of the insert is below about 70.

[0041] In one embodiment, when the insert 14 is pressed into the base 12, the insert 14 itself flexes and bends to move the second side edge 44b below the overhang 30b. The overhangs 30a, 30b themselves may also flex slightly, due to the inherent flexure in the material of the base 12. However, the base 12 itself (including the overhangs) is substantially rigid, and the insert 14 is comparatively and relatively flexible. The insert 14 undergoes more bending or flexing than does the base 12 when the insert 14 is mounted to the base 12.

[0042] To remove the cover, the process is reversed. The user grips the insert 14 from the side and lifts it up out of the
overhang 30b, to the position shown in FIG. 7. The user can then remove the insert 14 from the base 12, and then slide the base 12 off of the rail 5.

Another embodiment of the invention is shown in FIGS. 9-10, demonstrating the ability of the cover to be made in various lengths L1, L2, L3, etc. For example, L1, L2, or L3 may be approximately 1.25 inches, or 4 inches, or 6 inches, or other desired lengths. The cover 100 can be made in any desired length, to cover all or a desired portion of the rail 5. The number of tabs 38 extending from the bottom portion 16 of the base 12 can be adjusted based on the length of the cover and the number of tabs desired. For example, tabs can be provided at several spaced locations along the length of the cover, or only at the two opposite ends of the cover, or only at one end or one location on the cover. Even when the cover has a longer length, it may include only one tab to lock the cover in place. However, when the cover has a longer length, it may be desired to provide more than one tab, in order to more securely lock the cover in place.

In one embodiment, as shown in FIG. 9, the insert 14 includes a logo, image, or writing 50 on the curved top surface 34. For example, the insert 14 can be imprinted with information that identifies a type of rail (such as the rail that the cover is designed to fit), or the logo of a particular firearm manufacturer, or the insert’s name, or information used by the military to catalogue or identify equipment or users, or aesthetic designs, or any other type of information. This information can be molded, stamped, imprinted, raised, printed, or similarly provided on the top surface 34 of the insert 14.

Another embodiment of a cover 200 is shown in FIG. 11. In this embodiment, an insert 214 includes a pocket 260 that is formed in the underside 236 of the insert 214 to accept an accessory device 270 into the pocket 260. The pocket 260 is sized and shaped to match the particular accessory device, so that the device 270 can snugly fit into the pocket 260 underneath the insert 214. For example, in one embodiment the accessory device 270 is a pressure switch 272, and the pocket 260 is dimensioned (its width, length, depth, shape) to receive the pressure switch and snugly fit the pressure switch into the pocket 260. In another embodiment, the device is a blue tooth switch, which can be used to operate remote blue tooth devices such as communication devices. For example, the device 270 could be a blue tooth actuator used to wirelessly turn on and off remote blue tooth electronics.

The accessory device 270 is fitted into the pocket 260 on the underside of the insert 214, and then the insert 214 is assembled onto the base 212 on the firearm rail in the same manner as described above. The accessory device is thus trapped between the insert and the base. The accessory device is held securely in this position, as the base retains the insert at overhangs 230a, 230b, and the insert retains the accessory device. The accessory device is not only securely held in place, but is also protected from exposure to the environment, by completely covering it and trapping it between the insert and the base. In one embodiment the insert 214 is transparent and the accessory device is visible through the insert.

The insert 214 is relatively flexible or pliant as compared to the base 212, and the top surface 234 of the insert is flexible and depressible. The material of the insert is resilient such that it recovers its shape after it is flexed or depressed. Additionally, the thickness of the insert above the pocket 260 is small enough that the insert can bend into the pocket. Accordingly, the accessory device located in the pocket 260, trapped between the insert and the base, can be operated by pushing on the top surface 234 of the insert. For example, where the accessory device is a pressure switch 272, the switch can be operated by pressing down on the top surface 234 of the insert, which bends and flexes and transmits pressure to the pressure switch. The pressure switch 272 is then compressed between the rigid floor 220 of the base 212 and the pressure on the top surface 234. Thus the pressure switch can be operated by pushing on the top surface 234. The pressure switch can be connected to another device such as a light, laser, telescopic sight, or another device, which can be turned on and off or controlled by the pressure applied to the pressure switch. The area of the top surface 234 directly above the pocket 260 may be textured differently than the rest of the surface 234 so that the user can identify by tactile feel where to push to operate the switch.

To connect the pressure switch (or other accessory device) in the pocket 260 to another device (such as a light), the insert 214 may include a groove 262 extending from one end of the pocket 260 along the underside 236, around the tabs 238, to an end of the insert (see FIG. 11). A wire 274 from the pressure switch (or other device in the pocket 260) can fit into this groove and connect to another device. The groove is optional, as the device in the pocket may not connect to another device or may connect wirelessly. The groove can be dimensioned as needed to accommodate a wire.

In one embodiment the accessory device 270 is removable from the pocket 260 and replaceable with a different accessory device. The insert 214 is removed from the base 212, and the device 270 is removed from the pocket 260. Another device can then be inserted into the pocket for another application or exercise. Alternatively, on one embodiment, the accessory device 270 is secured into the pocket 260 and is not intended to be removed. For example, the device 270 can be held in place by an adhesive such as glue or tape, or the material for the insert could be molded around the switch, fully enclosing it into the pocket 260.

In another embodiment, the insert may include multiple separate pockets 260 spaced apart from each other to accept multiple accessory devices, such as pressure switches or blue tooth device switches. As an example, an insert that is 6 inches in length can include three separate pockets 260. Each switch can each be connected to and used to operate a different device. The top surface of the insert can include separate textured areas above each switch, each area having a different texture or surface feature providing a different tactile feel, so that the user can identify where each switch is located and where to apply pressure to the top surface to operate a particular switch. For example, the different textures on the top surface can include rough texturing, grooves, ridges, dimples, lines, outlines, depressions, and/or other surface features.

In one embodiment, both the insert and the base are manufactured by injection molding techniques. The insert can be formed as one integral, continuous piece. The base can also be formed as one integral, continuous piece, rather than separate pieces fitted together. In other embodiments the base and/or insert may be machined, such as when the base is made from aluminum.

In another embodiment, the insert and the base are both substantially rigid, rather than providing an insert that is more flexible than the base. The insert and base may have the same shapes and components as described above, but rather than flexing the insert to fit into the base, the two parts snap-fit together. The interface geometry may be adjusted as necessary to enable parts to receive each other in a snap-fit. This design may be preferred in applications where the cover may be subjected to hazardous substances, and the rigid insert can be more easily sterilized or cleaned.
Another embodiment of the invention is shown in FIG. 12. An assembled cover 100" is shown mounted to a firearm accessory rail 5 on a firearm 52. The rigid base of the cover provides protection for the rail 5, to prevent the rail from becoming scratched, dented, or deformed, which could cause the rail to be unusable for attaching accessory devices. The flexible insert provides the user with a comfortable grip. The cover 100" can be easily assembled onto or removed from the firearm 52 as needed, with only two pieces (the grip and the insert) needed to securely mount the cover to the rail. The length of the cover can be selected to cover a desired portion of the rail.

Although the present invention has been described and illustrated in respect to exemplary embodiments, it is to be understood that it is not to be so limited, since changes and modifications may be made therein which are within the full intended scope of this invention as hereinafter claimed. For example, the particular shape of the insert, whether domed, flat, slanted, or flanged, can vary, as can the shape of the base. The insert and base can be adjusted to accommodate varying types of mounting rails.

What is claimed is:
1. A cover for a firearm rail, comprising:
   a base comprising an upper portion and a lower portion, the lower portion comprising a groove dimensioned to engage such firearm rail; and
   an insert for engaging the upper portion of the base;
   wherein the upper portion of the base comprises an overhang dimensioned to receive the insert,
   wherein the groove retains the base to such firearm rail and the overhang retains the insert to the base, and wherein the base is substantially rigid and the insert is substantially flexible.
2. The cover of claim 1, wherein the insert comprises a tab and the base comprises an opening, and wherein the tab extends through the opening in the base to engage such firearm rail, and wherein the tab is dimensioned to engage a crosscut in such firearm rail, to position the base along the firearm rail.
3. The cover of claim 1, wherein the base comprises a wing extending from the overhang.
4. The cover of claim 1, wherein a top surface of the insert is textured.
5. The cover of claim 4, wherein a top surface of the overhang is textured to match the top surface of the insert.
6. The cover of claim 1, wherein the base comprises aluminum or a glass-filled polymer.
7. The cover of claim 1, wherein the insert comprises a flexible elastomer.
8. The cover of claim 1, wherein information is provided on the top surface of the insert.
9. The cover of claim 1, wherein the insert comprises a hollowed-out portion.
10. The cover of claim 1, wherein the insert comprises a top surface opposite an underside, and wherein the underside of the insert comprises a pocket dimensioned to receive an accessory device.
11. The cover of claim 10, wherein the accessory device comprises a pressure switch, and wherein the pressure switch is inserted into the pocket and is trapped between the base and the insert.
12. A cover for an accessory rail having at least one slot, comprising:
   a rigid base comprising a bottom portion with first and second opposing bottom grooves dimensioned to accept such accessory rail, and comprising a top portion with first and second opposing top grooves; and
   a flexible insert comprising first and second opposing side edges dimensioned to mate with the first and second opposing top grooves of the top portion of the base, to retain the insert to the base, wherein the insert comprises a top surface and an underside, and wherein the underside of the insert comprises a tab that is dimensioned to extend through the base and into such slot in the accessory rail.
13. The cover of claim 12, wherein the bottom portion of the base comprises first and second prongs that form the first and second bottom grooves, and wherein the top portion of the base comprises first and second overhangs that form the first and second top grooves.
14. The cover of claim 13, wherein the top surface of the insert is textured, and wherein the overhangs are textured to match the textured top surface of the insert.
15. The cover of claim 12, wherein the underside of the insert comprises a pocket dimensioned to receive a pressure switch, and wherein the top surface of the insert comprises an area above the pocket, the area having a surface feature for locating the pocket by tactile feel.
16. A firearm system comprising:
   a firearm accessory rail comprising at least one slot; and
   a rail cover mounted to the accessory rail, the rail cover comprising:
   a base comprising a bottom portion with a channel and a top portion with a cavity; and
   an insert comprising a tab,
   wherein the accessory rail extends into the channel in the bottom portion of the base, thereby retaining the base to the rail,
   wherein the insert is retained in the cavity of the top portion of the base, and
   wherein the tab extends through an opening in the base and into the slot in the accessory rail to mount the rail cover to the accessory rail.
17. The firearm system of claim 16, wherein the base is relatively rigid and the insert is relatively flexible.
18. The firearm system of claim 17, wherein the insert comprises a textured top surface.
19. The firearm system of claim 18, wherein the base comprises first and second overhangs that define the cavity between them, and wherein the first and second overhangs retain the insert to the base.
20. The firearm system of claim 19, wherein the insert comprises an underside having a cavity.

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