A charging handle for a rifle or semi-automatic rifle with a user portion positioned to provide maximum user comfort and minimum interference with accessories mounted on the rifle.
ERGONOMIC CHARGING HANDLE FOR A RIFLE

CROSS REFERENCE TO RELATED APPLICATION(S)

This application claims the benefit of U.S. Provisional Application No. 61/072,385 filed on Mar. 31, 2008, which is incorporated herein by reference as if fully set forth.

BACKGROUND OF THE INVENTION

The present invention pertains to a charging handle for a rifle or a semi-automatic rifle where the charging handle is mounted on the actuation device of the rifle in close proximity to a receiver rail on the rifle, the receiver rail being used to mount an accessory such as an optical device or sights for the rifle.

Prior art devices relied upon a charging handle that was angled upwardly toward the rail mounted on the receiver/barrel of the rifle thus making it difficult for the user of the rifle to actuate the charging handle without the user’s fingers interfering with the optics or a sight mounted on the receiver rail of the rifle.

SUMMARY OF THE INVENTION

The present invention relates to a charging handle that is provided with adequate clearance so that the operator’s hand, whether bare or covered with gloves, or any other part of the user’s body engaging the charging handle, does so without interference with the optics or any sights mounted on the receiver rail of the rifle.

According to the present invention, the charging handle is set at an angle and is of a length that permits the user to easily grasp the charging handle and apply force necessary to actuate the rifle.

Therefore in one aspect, the present invention is an ergonomic charging handle for actuating an automatic or semi-automatic rifle comprising a body having a first or tab portion to be fitted to the actuating mechanism of the rifle, a second or user portion of the body disposed at an angle to the tab portion so that when the body is assembled on the rifle the handle portion extends away from accessories mounted on a barrel of the rifle in the vicinity of the actuating mechanism of the rifle.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will hereinafter be described in conjunction with the appended drawing figures wherein like numerals denote like elements.

FIG. 1a is a front elevational view of a portion of a rifle with a charging handle according to the prior art;

FIG. 1b is a front elevational view of a portion of a rifle such as the rifle in FIG. 1a with a charging handle according to the present invention;

FIG. 1c is a schematic front elevational view of the rifle of FIG. 1b with another embodiment of the charging handle of the present invention;

FIG. 2a is a front elevational view of a charging handle according to the present invention;

FIG. 2b is a top plan view of the device of FIG. 2a;

FIG. 2c is a bottom plan view of the device of FIG. 2a;

FIG. 2d is a fragmentary view of the charging handle of the present invention illustrating curvature of a portion of the device;

FIG. 3a is a front elevational view of a charging handle according to the present invention illustrating certain dimensional relationships of the device according to the present invention;

FIG. 3b is a top plan view of the device of FIG. 3a;

FIG. 3c is a front elevational view of an alternate embodiment of a charging handle according to the present invention; and

FIG. 3d is a top plan view of another embodiment of a charging handle according to the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The ensuing detailed description provides preferred exemplary embodiments only, and is not intended to limit the scope, applicability, or configuration of the invention. Rather, the ensuing detailed description of the preferred exemplary embodiments will provide those skilled in the art with an enabling description for implementing the preferred exemplary embodiments of the invention. It being understood that various changes may be made in the function and arrangement of elements without departing from the spirit and scope of the invention, as set forth in the appended claims.

The present invention pertains to a charging handle that is used for a rifle such as a SigSauer 55X series rifle manufactured and sold by SigSauer of Exeter, N.H.

Referring to FIG. 1a, a rifle 10 such as the SigSauer series 55X, in particular the SigSauer 556 combination rifle/pistol 10 is fitted with a charging handle 12 which is in turn connected to the actuator or bolt portion of the rifle 10.

On top of the barrel 18 of the rifle 10 is a rail 16 to receive a sight or optical device 14. As shown in FIG. 1a, the charging handle 12 is positioned so that when a user of the rifle 10 grasps the charging handle 12, it is possible that the user’s fingers, especially when the user is wearing a glove, can come into contact with the optical device 14 thus making it difficult to actuate the charging handle 12.

FIG. 1b shows the rifle 10 of FIG. 1a provided with a charging handle 20 according to one embodiment of the present invention.

FIG. 1c shows the rifle 10 of FIG. 1a provided with a charging handle 21 according to another embodiment of the present invention.

Referring to FIGS. 2a, 2b, and 2c, the charging handle 20 according to the present invention comprises a first portion 22, the dimensions and shape of which are dictated by the rifle to which the charging handle 20 will be fitted.

The second portion 24 of charging handle 20 is shown disposed in an angular relationship to portion 22 and may contain surface patterns or textures 26 that aid in the user’s grip of the charging handle 20.

The curvature of the portion 24 of the charging handle 20 is shown in FIG. 2d.

Referring to FIG. 3a, the relationship between portions 22 and 24 of charging handle 20 are illustrated.

In the illustration of FIG. 3a, the angular relationship A is between 0 (FIG. 1c) to less than 90 degrees (FIG. 1b). The angular relationship A is based upon the portion 22 being placed in the receiver of the rifle perpendicular to the receiver of the rifle in a plane that is generally taken through the barrel of the rifle in a horizontal direction. Thus the second
portion 23 of handle 21 can extend perpendicular to the longitudinal axis of the receiver/barrel as shown in FIG. 1c. As shown in FIG. 1b, the second portion of handle 20 can extend at an angle measured as a negative angle from the tab portion 22 of handle 20.

[0030] The dimension B, which is the length of portion 24, can be of any length suitable to accomplish the aim of the invention which is to provide an ergonomic handle that will provide the user with the maximum comfort and ability to actuate the rifle.

[0031] Referring to FIG. 3c, the portion 28 of a charging handle 20 can be made longer to accommodate the particular needs of a user of the device.

[0032] Referring to FIG. 3d, the portion 32 of the charging handle 30 can be made with one or more finger grips as shown.

[0033] The device of the present invention provides an operator with the ability to move the charging handle using his or her hand, fingers, gloved hand or any other device or body part away from the optics or sight mounted on the rifle.

[0034] The angle and length of the portion of the charging handle contacted by the operator can be made to accommodate the best position for a rifle to which the device of the invention can be applied.

[0035] As stated above, the portion of the actuator or charging handle contacted by the operator in a normal operating position can be provided with a surface that enhances the grip of the user. The surface can be provided with machined grooves, knobs, indentations or the like or can be provided with a non-slip surface.

[0036] The charging handle according to the invention is preferably made of high strength steel. However, the device of the present invention can be made from any ferrous, non-ferrous, composite or synthetic material that meets the desired mechanical and physical properties of the charging handle.

[0037] The charging handle according to the invention can be manufactured by any of the conventional manufacturing processes such as machining, forging, casting, molding, layering and the like.

[0038] As used herein, the term actuating mechanism can be used to describe a bolt, rod or piston.

Having thus described my invention what is desired to be secured by Letters Patent of the United States is set forth in the appending claims.

1. An ergonomic charging handle for actuating an automatic or semi-automatic rifle comprising:
   a. a body having a first or tab portion to be fitted to the actuating mechanism of the rifle;
   b. a second or user portion of said body disposed at an angle to said tab portion so that when said body is assembled on said rifle said handle portion extends away from accessories mounted on a barrel of said rifle in the vicinity of said actuating mechanism of said rifle.

2. An ergonomic charging handle according to claim 1 wherein said angle is 0° to less than 90° measured from a horizontal plane passing perpendicular through a longitudinal axis of the barrel of said rifle.

3. An ergonomic charging handle according to claim 1 wherein said user portion is sized to permit an operator to easily engage and operate said charging handle with one hand, finger, gloved hand, body parts or mechanical device.

4. A charging handle according to claim 1 wherein said user portion is provided with an enhanced gripping or contact surface.

5. A charging handle according to claim 1 fabricated from metal, high strength steel, synthetic material, reinforced synthetic materials, reinforced carbon fiber composites and the like.

6. A charging handle according to claim 1 can be fabricated by one of casting, forging, machining, molding and the like.