GUN CLEANING TOOL

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ABSTRACT

A tool for cleaning a groove, recess or channel of a firearm includes an elongated body which serves as a handle, a first arm extending at an obtuse angle from one end of the body, and a second arm extending from the other end of the body. The arms terminate at respective tips. The tips have different shapes, to enable one to clean areas of different sizes.
GUN CLEANING TOOL

[0001] This application is a continuation-in-part of copending application Ser. No. 14/329,667, filed Jul. 11, 2014.

FIELD OF THE INVENTION

[0002] The present invention relates to a cleaning tool which is useful for cleaning firearms, including rifles and shotguns.

BACKGROUND OF THE INVENTION

[0003] Deposits of dirt, moisture, metal, burnt powder and other foreign matter on the interior side walls of the shell chamber and barrel or bore of a firearm is a common problem. If left uncorrected, such deposits can not only damage or corrode the inside surfaces of the firearm but can also create dangerous conditions, particularly if the barrel or moving parts become blocked by debris.

[0004] The bore of a firearm is conventionally cleaned with an elongated metal rod which has a cleaning implement, such as a brush, cloth, or abrasive pack affixed at one end.

[0005] While cleaning the bore is a straightforward matter, cleaning recesses, grooves, channels, and cutouts of a firearm is more difficult. These areas are prone to collect deposits, which must be removed from time to time to insure effective and safe operation. The various depths and geometries of these areas present a significant challenge to a person trying to do a thorough job. No suitable tool exists for cleaning and maintaining them.

SUMMARY OF THE INVENTION

[0006] An object of the invention is to provide a device that can be used alone or with a cleaning patch to clean grooves, recesses and other difficult areas of a firearm.

[0007] These and other objects are attained by a firearm cleaning tool as described below.

[0008] The tool includes an elongated body which serves as a handle, a first arm extending from one end of the body in a first oblique direction, and a second arm extending from the other end of the body in an opposite oblique direction.

[0009] The first and second arms are preferably different; for example, one may terminate at a narrow tip, while the other may have a broad tip. One tip may be thin for narrow channels, the other thick for wider channels.

[0010] Either tip may be designed to receive a patch for applying a cleaning solution, lubricant, polish, etc.

[0011] The tip angles are chosen to allow the tool to reach the many angled channels on a firearm or other product, when one holds the tool like a pencil, as if writing. An angle of 90° is not ergonomic: the angle should be an obtuse angle, preferably about 125°, so that the user can clearly see the tip while using the tool. The tips may extend from the body in opposite but substantially parallel directions.

[0012] The thickness of the arm at the tip is chosen to correspond to the width of the firearm channel being cleaned. To improve the retention of a cleaning patch on the tool, either tip may have cuts, an aperture, or a textured surface.

[0013] The overall length of the tool must be sufficient to provide a comfortable grip for one hand of the user. A tool length of six inches or less, from tip to tip, is presently preferred.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] In the accompanying drawings,

[0015] FIG. 1 is a perspective view of a channel cleaning tool embodying the invention;

[0016] FIG. 2 is a top plan view thereof;

[0017] FIG. 3 is a bottom plan view thereof;

[0018] FIG. 4 is a side view thereof;

[0019] FIG. 5 is lengthwise perspective view thereof; and

[0020] FIG. 6 is a view like FIG. 5, with a portion of the tool cut away to show the shape of a section taken on the transverse plane 6-6 in FIG. 4.

DESCRIPTION OF THE PREFERRED EMBODIMENT

[0021] With reference to FIGS. 1-5, a gun cleaning tool embodying the invention has an elongate body 10 extending along a longitudinal axis “A” (FIG. 4). A first arm 12 and a second arm 14 extend at obtuse angles α, α’ from opposite ends of the body, along oblique axes “X” and “Y” respectively. Each obtuse angle is preferably about 125°. All three axes A, X and Y lie in a common plane, and preferably, the X and Y axes are substantially parallel. Owing to this geometry, the user can reverse the tool in his hand without changing its feel.

[0022] Referring to FIG. 1, the first arm 12 has a top surface 16 and a bottom surface 18, which extend between side surfaces 20 and 22, all terminating at a blunt end surface 24 that is substantially perpendicular to the surfaces 16, 18, 20 and 22. All the edges of the end surface are sharp, for scraping foreign material deposits from the firearm.

[0023] The second arm 14 has a top surface 16’ and a bottom surface 18’, which extend between side surfaces 20’ and 22’. The tip terminates at a blunt end surface 24’ that is substantially perpendicular to the surfaces 16’, 18’, 20’ and 22’.

[0024] The arms are substantially identical, except for the fact that one tapers or narrows so that the end surfaces 24, 24’ have substantially different size. In the illustrated embodiment, the first arm 12 has substantially constant thickness, so that it terminates at a relatively broad end surface 24, while the second arm tapers down to a relatively narrow end surface 24’. It should be noted that even the narrower tip 14 is blunt at the end, to maintain adequate tip strength.

[0025] The elongated body 10 serves as a handle for the user to grasp. Ribs 30 and 32 are formed on the top and bottom surfaces of the body, respectively. These ribs run lengthwise, parallel to the axis “A”, for a majority of the length of the body. Each rib rises from its respective body surface a distance such that the body has, in cross-section, the shape of a cross having four equal arms. The edges 34 of the ribs are rounded, and fillets 36 (see FIG. 5) are formed where the ribs meet the body surface.

[0026] FIG. 6 shows the transverse cross-section “S” of the tool body 10 at the location of the top rib 30 and the bottom rib 32. The ribs give the body a cross-shaped section and reinforce the body against bending. The non-circular cross section enables one’s fingers to “feel” the rotational position of the tool while working and thus better control the tool’s orientation than one could if the body were round. The ribs preferably have a width and height both equal to about a third of the overall width of the tool.

[0027] While the tool might conceivably be an assembly of several parts, it is presently preferred that the tool be unitary, that is, that the tips, the body and the ribs be a single continu
ous piece all made of the same material, preferably injection molded plastic. The arms must be stiff enough to resist bending and twisting, and strong enough to prevent breakage in ordinary use, and they should be made of a material which will not mar the metal surface of the firearm. Additionally, the material selected should be inexpensive, injection moldable, and resistant to chemicals. A glass fiber-reinforced polyamide (nylon) polymer such as ZYTEL is presently preferred. However, another strong polymer such as ABS (acrylonitrile butadiene styrene) might be used instead. ZYTEL is a DuPont trademark for a family of its nylon products.

Since the invention is subject to modifications and variations, it is intended that the foregoing description and the accompanying drawings shall be interpreted as only illustrative of the invention defined by the following claims.

I claim:

1. A tool for cleaning a groove, recess or channel in a firearm, said tool comprising:
   an elongated body extending along a longitudinal axis, a first arm extending from a first end of the body along a first axis lying at a first obtuse angle to said longitudinal axis, and a second arm extending from a second end of the body along a second axis lying at a second obtuse angle to said longitudinal axis, said first arm terminating at a first tip, and said second arm terminating at a second tip, each of said tips terminating at a blunt end surface having sharp edges.

2. The tool of claim 1, wherein said longitudinal axis, said first axis and said second axis lie in a common plane.

3. The tool of claim 2, wherein said first and second axes extend in opposite directions from said longitudinal axis.

4. The tool of claim 3, wherein said first and second axes are parallel to one another.

5. The tool of claim 4, wherein said first and second tips have different shapes.

6. The tool of claim 5, wherein one of said tips is smaller than the other.

7. The tool of claim 5, wherein each of said tips has a substantially rectangular cross-section for its entire length.

8. The tool of claim 7, wherein both of said tips have a uniform width.

9. The tool of claim 8, wherein one of said tips has a constant thickness and the other of said tips tapers to a lesser thickness at its distal end.

10. The tool of claim 1, wherein a central portion of the body has reinforcing ribs giving the body a cross-shaped section in a plane transverse to the longitudinal axis, both to reinforce the body against bending and to provide a textured gripping surface.

11. The tool of claim 1, wherein said tool is made of a single piece of uniform material.

12. The tool of claim 11, wherein the material is a polymeric plastic.

13. The tool of claim 12, wherein the material is injection molded.

14. The tool of claim 12, wherein the material is a fiber-reinforced polymeric plastic.

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