



US 20060010744A1

(19) **United States**

(12) **Patent Application Publication**  
**Schumacher**

(10) **Pub. No.: US 2006/0010744 A1**

(43) **Pub. Date: Jan. 19, 2006**

(54) **FIREARMS HAVING A BARCODE ON AN EXTERNAL SURFACE AND METHODS FOR PRODUCING THE SAME**

(30) **Foreign Application Priority Data**

Nov. 21, 2002 (DE)..... 102 54 433.6

(76) Inventor: **Michael Schumacher**, Fluorn-Winzeln (DE)

**Publication Classification**

Correspondence Address:  
**HANLEY, FLIGHT & ZIMMERMAN, LLC**  
**20 N. WACKER DRIVE**  
**SUITE 4220**  
**CHICAGO, IL 60606 (US)**

(51) **Int. Cl.**  
**F41A 9/53 (2006.01)**

(52) **U.S. Cl.** ..... **42/1.01**

(21) Appl. No.: **11/133,742**

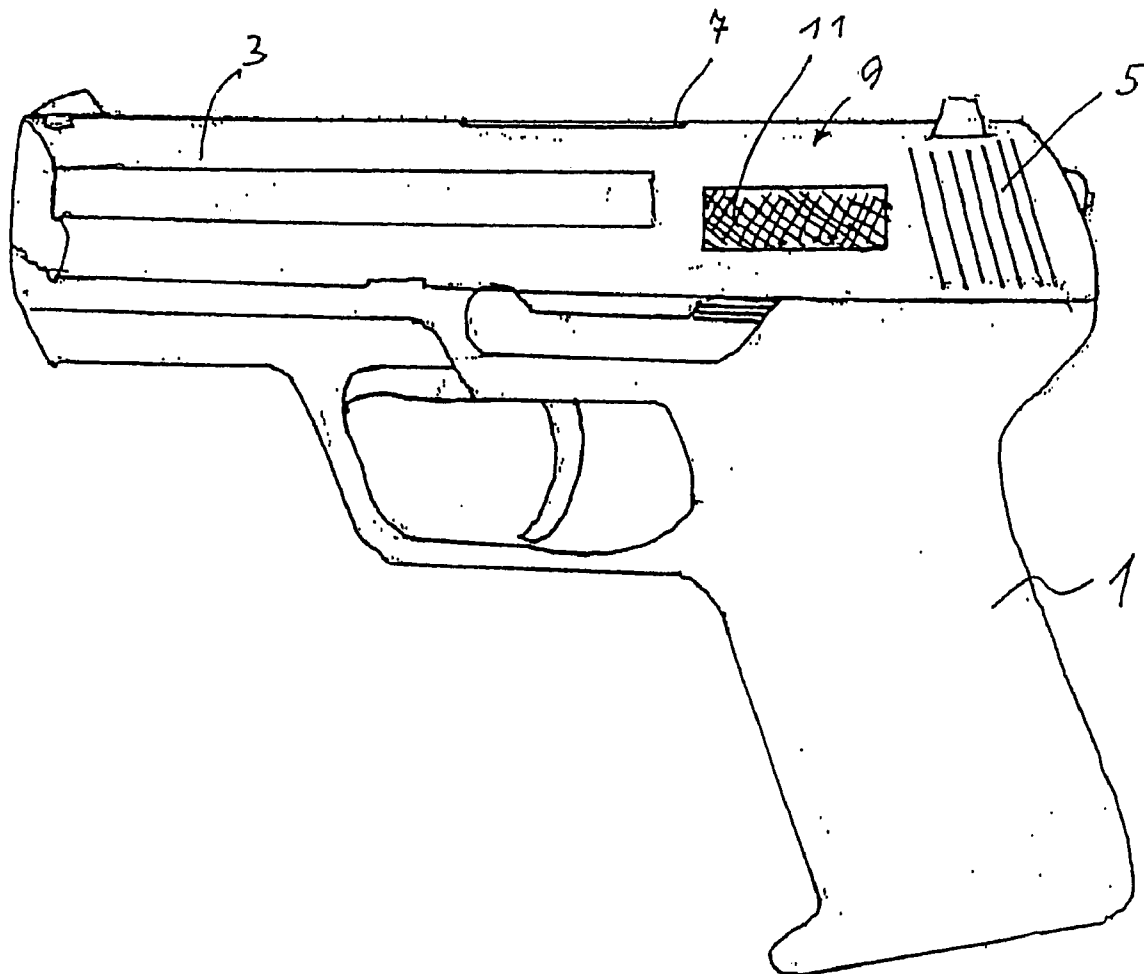
(57) **ABSTRACT**

(22) Filed: **May 20, 2005**

**Related U.S. Application Data**

(63) Continuation of application No. PCT/EP03/13039, filed on Nov. 20, 2003.

Firearms having a barcode on an external surface and methods of providing the same are disclosed. An illustrated firearm includes a substantially even exterior metal surface that has a barcode formed therein. The barcode includes fine grooves or bars such that the exterior metal surface appears raised in an area of the barcode.



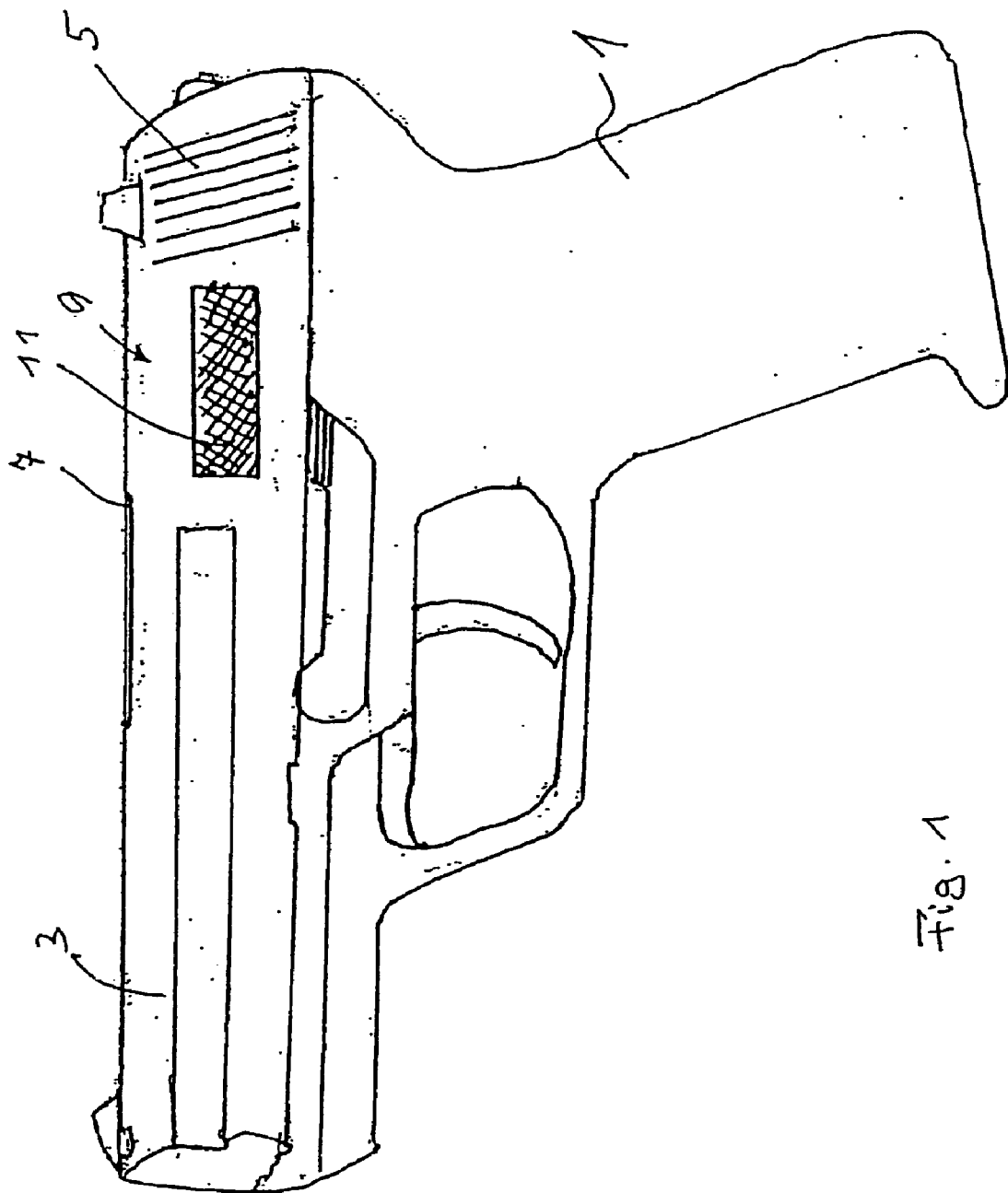


Fig. 1

**FIREARMS HAVING A BARCODE ON AN  
EXTERNAL SURFACE AND METHODS FOR  
PRODUCING THE SAME**

RELATED APPLICATION

[0001] This patent is a continuation of International Patent Application Serial No. PCT/EP2003/013039, filed Nov. 20, 2003, which is hereby incorporated herein by reference in its entirety.

FIELD OF THE DISCLOSURE

[0002] This disclosure relates generally to firearms and, more particularly, to firearms having a barcode on an external surface and methods of producing the same.

BACKGROUND

[0003] In the second half of the 19th century, it was common to engrave, chisel or otherwise brand the serial numbers and the name of the manufacturer of the weapon (i.e. model-related identifying information) into the metal or wood of a hand gun. It was also known to engrave, chisel or otherwise brand weapons with individual identifiers like names and dedications as well as formation and operating instructions such as those used with military weapons. On standard-issue weapons, it is sometimes possible to find an entire list of formations, via which the military history of the weapon can be read from its introduction to its discharge.

[0004] While engraving, chiseling or branding are advantageous techniques for marking a firearm because they are permanent and do not require flat or even surfaces, engraving, chiseling and/or branding require a lot of surface space on the weapon and do not always guarantee that all of the engraved, chiseled or branded characters of the mark will be clearly legible. In addition, engraving chiseling and/or otherwise branding characters onto a firearm are extremely complicated techniques and, because of the toll they take on the metal surface, may lead to undesirable stress concentrations on heavily loaded, thin parts. In view of these issues, engraving is usually only performed on expensive civilian weapons.

[0005] More recently, so-called electrowriters were sometimes used to create marks or other notations on firearms. Electrowriters allowed markings to even be placed on firearms with surface ornamentation and/or other filigree such as, for example, modern automatic pistols without dismantling the weapon into individual parts, compressing the weapon by stamping, or heat-damaging the weapon.

[0006] A more recent method of applying markings containing manufacturer, sales and/or other information is through barcoding. A barcode consists of a row of parallel bars with different widths and/or at different distances from each other. The bars are attached to a contrasting base, which in turn is affixed to the weapon packaging or the weapon itself. A barcode is usually read with a reader device that can decode the barcode without problems. The layperson cannot read the information on the barcode without a reader. As a general rule, a barcode must be applied to a more or less even surface. As used in this patent, a surface is "even" if it is even enough to allow the quick and trouble-free reading of a barcode applied to it. Because the barcode is applied to the weapon via a base, this type of barcode is rather easy to remove or damage such that it can no longer be read.

[0007] DE 100 62 239 A1 illustrates a prior art attempt to apply a barcode to a weapon. In that document, unbeknownst to the user of the weapon, a barcode is included in the millings for the engagement of the slide. Only millings that are clearly undamaged can be seen because they have omissions. A disadvantage of this barcode marking is that the marking is relatively short such that only a few characters of the weapon identification number can be included.

[0008] An example weapon marking in the prior art that includes a greater number of characters is described in U.S. Pat. No. 6,432,559. However, this patent includes the information marker on the weapon in a highly integrated manner. The information carriers are molded or ingrained in the weapon such that the information is not optically visible from the outside of the weapon.

[0009] A challenge encountered specifically with military weapons is that the surfaces of military weapons should be as inconspicuous as possible, (i.e. non-reflective and with unclear contours). Insofar as a military weapon has a smooth, level surface, then this surface should be designed as matte as possible. However, the surfaces must not be too roughly processed, since otherwise material inaccuracies and errors can develop or remain undetected. Until now, this problem has been poorly addressed by first working the surface to a certain accuracy, and then reworking this surface, which is quite time-consuming. The reworking is usually performed chemically so as not to stress the material parts, which are often designed as thin as permissible in order to minimize the weight of the weapon.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] **FIG. 1** is a perspective view of an example standard-issue weapon with markings constructed in accordance with the teachings of the invention.

DETAILED DESCRIPTION

[0011] Throughout this patent, position designations such as "above," "below," "top," "forward," "rear," etc. are referenced to a firearm held in a normal firing position (i.e., pointed away from the shooter in a generally horizontal direction).

[0012] **FIG. 1** illustrates an example pistol constructed in accordance with the teachings of the invention. The bottom part of the illustrated pistol has a handle **1** made out of reinforced plastic. An outwardly open metal plate (not shown here) containing the serial number and, if applicable, firing characters is embedded into the handle **1**. The surface of the handle **1** can accommodate a variety of designs such as, for example, fish scales, raisings, or other emblems and insignia (e.g., national emblems) requested by purchasers, particularly high-volume purchasers.

[0013] As shown in **FIG. 1**, a slide **3** made of specially treated steel is attached in a moveable manner to the top of the handle **1** in a known manner. The front part of this slide **3** may contain information such as, for example, manufacturer identifiers, firing characters, etc. The back part of the slide **3** has grooves **5** such that a user can securely grip the slide **3** during reloading. The surface of the front and back parts of the slide **3** are thus sufficiently raised or otherwise designed to avoid or reduce the amount of light the surfaces reflect.

[0014] The middle part of the slide **3** looks different. There is an ejection window **7** located along the middle part of the slide **3** on the top of the weapon. Discharged cartridges are ejected through the window **7** when the weapon is fired and cocked or reloaded. The back part of the ejection window **7** is the part of the weapon that receives the highest amount of stress during firing. In the illustrated example, the slide **3** has an even or smooth, level surface **9**, which may reflect light rays. This surface **9** could be reworked in order to be less reflective, thus making the weapon less conspicuous, but this must be done very carefully since each sharp edge that is cut in the steel can cause breakages and/or weaken the material. This is highly undesirable in this region of the weapon because this region is subject to the highest stresses.

[0015] In the illustrated example, a large part of the level surface **9** is taken up by a barcode surface **11**. The barcode surface **11** is shown in FIG. 1 with cross-hatching to accentuate its presence. Using a laser, the barcode surface **11** is branded relatively finely and evenly with a barcode. This ensures that no undefined sharp edges can be formed in the barcode. Moreover, due to its fineness, the barcode can accommodate a longer message (i.e., include more data).

[0016] The barcode surface **11** breaks and distorts the surface **9** so the surface **9** is less smooth and less light is reflected. Consequently, the surface **9** can no longer be recognized as the surface of a weapon, even if other parts are still recognizable. The barcode **11** provides permanent identifying information that is less easily recognizable but is easily readable with a barcode reader or decoder. The barcode **11** is worked into the even metal surface **9** such that the bars or the spaces between the bars of the barcode **11** are formed by fine grooves or bars. Because the barcode **11** provides the dual functions of carrying a message and operating as a textured or otherwise uneven surface that dampens the reflection of light thereby making the weapon less conspicuous, the relatively high cost of the barcode **11** is justifiable.

[0017] While it was known in the prior art to attach a barcode to a firearm, embodying a barcode directly into the surface of a firearm is new. Prior to the invention of this patent, it was not clear that etching a barcode into a surface of a weapon would produce a readable code because of the lack of color contrast between the barcode and its background. Etching a barcode into a firearm so that it is readable without the presence of a contrasting color background is new, and the success of this technique was unexpected. It turned out that the different reflections with malleable or, better, negatively formed bars enables a reliable reading, even though there is no color contrast. It does not matter how deep the bars or spaces are. In fact, the bars can be relatively flat and still provide a proper reading.

[0018] As stated above, the barcode **11** forms a raised surface that is arranged within the metal surface **9** and, thus, changes the contour of the surface **9** and dampens or prevents the reflection of light from the surface **9**. While the mechanical raising of a surface section **9** for the purpose of reducing the reflection and blurring of the contours is too time-consuming to be used in the mass production of standard-issue weapons, and while the insertion of a barcode **11** into an even metal surface **9** is also too time-consuming for the same reasons, the barcode surface **11** of the illustrated example is used for two completely contrasting purposes,

which surprisingly ensures a positive balance of costs. While too complicated for either of the individual purposes alone, an engraved or otherwise constructed barcode surface **11** is sufficiently economical because it simultaneously achieves both purposes.

[0019] In order to optimize the optical effect of the barcode **11** to camouflage the inherently conspicuous level surface **9**, it is preferable that the barcode **11** takes up a significant portion of the level surface **9** and/or subdivides this level surface **9**. The barcode can be used for any type of firearm. However, because the size of a meaningful barcode surface **11** is limited, the size of the level surface **9** that can be effectively camouflaged by the barcode surface **11** is also limited. For this reason, the barcode surface **11** is preferably used with a firearm such as, for example, an automatic pistol with a plastic handle where the barcode is applied to or worked into at least one side of the slide **3**.

[0020] There are portions of a firearm that are less desirable for placement of the barcode **11**. For instance, in the case of a handheld firearm with a handle that is made of plastic or coated with plastic, a barcode cannot be inserted permanently enough into the handle because the physical properties of the plastic are insufficient to adequately support the fine separation of the bars or grooves of the barcode.

[0021] On the other hand, a barcode attached to the slide **3** can be read easily and without problems using a conventional machine vision reader device. However, the surface of the slide **3** offers a conspicuous surface that is exposed to the highest mechanical stresses. For this reason, the welding or the milling out of the barcode **11** means a high thermal or mechanical impairment of the strength of the slide **3** that is not ideal, as described above.

[0022] One of ordinary skill in the art would appreciate that the barcode **11** may be inserted in different ways, e.g. through engraving. However, the barcode **11** is preferably branded into the even metal surface **9** through a laser treatment. The stability of a barcode **11** in this location is, thus, guaranteed. The, at first, very complicated laser device can be fully electronically and automatically controlled so that the text of the barcode is free of human error or other idiosyncrasies of the operating personnel. The branding is extremely gentle on the material since the heating of the metal of the level surface **9** only reaches a very low level, so that the material is only damaged in a defined and specific manner over a shallow depth. This material depth lies within the tolerance field of the material thickness. The formation of the bars or grooves takes place with the highest precision, but is nevertheless very quick. The cost for a branding procedure is very low so that the high costs of obtaining the laser device are quickly amortized.

[0023] Although certain example methods, apparatus and articles of manufacture have been described herein, the scope of coverage of this patent is not limited thereto. On the contrary, this patent covers all methods, apparatus and articles of manufacture fairly falling within the scope of the appended claims either literally or under the doctrine of equivalents.

What is claimed is:

1. A firearm comprising:  
a substantially even exterior metal surface; and

a barcode, formed in the even exterior metal surface, the barcode including fine grooves or bars such that the exterior metal surface appears raised in an area of the barcode.

2. A firearm as defined in claim 1, wherein the barcode includes information and provides an at least partially non-reflective surface for the firearm.

3. A firearm as defined in claim 1, wherein the barcode comprises a substantial portion of the exterior metal surface.

4. A firearm as defined in claim 1, wherein the barcode subdivides the metal surface.

5. A firearm as defined in claim 1, wherein the firearm is an automatic pistol further comprising:

a plastic handle; and

a slide.

6. A firearm as defined in claim 5, wherein the barcode is located on the slide.

7. A firearm as defined in claim 1, wherein there is no color contrast between the barcode and the exterior metal surface.

8. A method of manufacturing a firearm comprising:

providing information to be encoded onto a firearm;

providing an exterior metal surface on the firearm; and

performing a laser treatment to the exterior surface of the firearm to brand the exterior surface with a barcode including the information.

9. A method of manufacturing a firearm as defined in claim 8, wherein performing the laser treatment forms the barcode and dampens light reflection from the exterior surface.

\* \* \* \* \*