An electronic safety and control device for firearms, applicable to guns or rifles has an electronic board with a microchip of wireless communication with a computerized remote control center, and with a GPS location system. An electronic locking/unlocking system is associated with the safety lock and the hammer of the weapon linked to the electronic board and rechargeable battery. The control center automatically causes the activation or not of an of the elements on the device. Also, the device optionally includes, linked to the electronic board, a deactivation system, for example consisting of a micro-primer built next to the hammer, main micro-camera in the rear of the weapon, a secondary micro-camera on the front, and/or a microphone and speaker,
ELECTRONIC SAFETY AND CONTROL DEVICE FOR FIREARMS

CROSS-REFERENCE TO RELATED U.S. APPLICATIONS

[0001] Not applicable.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] Not applicable.

NAMES OF PARTIES TO A JOINT RESEARCH AGREEMENT

[0003] Not applicable.

REFERENCE TO AN APPENDIX SUBMITTED ON COMPACT DISC

[0004] Not applicable.

BACKGROUND OF THE INVENTION

[0005] 1. Field of the Invention

[0006] The field of application of the present invention falls within the sector of industry dedicated to the manufacture of firearms, focusing particularly on the scope of safety and control systems of said type of weapons.


[0008] As is known, firearms, in addition to armies and forces or security forces, are possessed by individual users which, in many cases, do not have them as a tool for hunting or sports, but as a security element for their protection or for any other cause, not to mention individuals who may possess them for illicit uses. This means that, in natty cases, the use and control of said weapons is not as safe as it could be giving rise, as it has sadly happened too often, to undesirable situations of robberies, murders of innocent people or massacres in schools, etc., due to either the weapon having been stolen and fallen into inappropriate hands or due to the user suffering from any type of disorder.

[0009] To avoid such situations it would be desirable, therefore, to provide to firearms, at least to that of new manufacture, but without discarding those existing, with control, monitoring, and safety mechanisms which to a greater extent impede or restrict possible misuse thereof by blocking the hammer or even disabling the mechanism.

[0010] It should be noted, moreover, that even though there are multiple types of weapons with different safety systems, none is known that incorporates an electronic safety and control device such as that is advocated here, or presenting technical, structural, and constituent characteristics as claimed.

BRIEF SUMMARY OF THE INVENTION

[0011] The invention, as stated the wording of the present specification, relates to an electronic safety and control device for firearms, which provides a number of advantages to the function to which is intended as well as innovative technical, structural, and constituent characteristics, which will be described in more detail later and make it a remarkable novelty within its field of application.

[0012] More particularly, the object of the invention is focused on a device designed to be built in the firearms, particularly automatic or semi-automatic guns or rifles, with the purpose of allowing a strict control over its use and prevent unwanted risk situations, for which said device is configured as a set of electronic elements that are incorporated into the weapon, allowing, using wireless communication technology, a communication in real time with a remote control and monitoring center, previously established, since it includes a location system of the weapon and at least one element linked to the safety lock of the weapon in such a way that, upon the actuating, causes said communication is automatically activated and, if necessary, blocks the hammer mechanism preventing the weapon to be used, even allowing it permanent deactivation.

[0013] Thus, the electronic safety and control device for firearms proposed by the invention is configured as a remarkable novelty within its field of application, since, according to its implementation and exhaustively, the objectives previously designated as suitable are successfully reached, being the characteristic details that make it possible, conveniently collected in the final claims accompanying to the present description of the same.

[0014] In particular, what the invention recommends is an electronic safety and control device for firearms, preferably guns or rifles, essentially comprising the following elements:

[0015] An electronic board with microchip and wireless communication technology for transmitting data, or data and voice, of the type used by mobile telephony, and also provided with GPS (Global Positioning System) location system. Said board is built in the weapon body, for example in the butt, being the cited two-way wireless communication with a computerized and remote control center, specially intended for this purpose, so that said control center receives data from the board that transforms into information so that it is processed and in turn, receives data from said control center to automatically activate or not of any of the elements on the device to which it is linked.

[0016] An electronic system, for example of integrated circuit, for locking/unlocking associated with the safety lock of the weapon and linked to said board so that acts on the hammer and in such a way that, when the user triggers the safety lock, the control center is automatically aware of this and so that the triggering of the hammer can be controlled, from this.

[0017] A supply unit, preferably formed by a small rechargeable battery, and that feeds with electric power the different elements of the device.

[0018] In addition, the device may also include the following additional elements:

[0019] A weapon deactivation system, for example consisting of other integrated circuit associated with a micro-primer built next to the hammer, and that will be suitably equipped with the specific charge for damaging it enough so that the weapon can not be used anymore but without damaging the user of the same, being said system also linked to the electronic board to act on the actuation of the same based on the control perfumed from the remote control center.

[0020] A main micro-video camera, located at the rear of the weapon and linked to the electronic board, so that, through it, the person who is handling the weapon can be displayed in the control center.

[0021] A secondary micro-video camera, in this case located at the front of the weapon, for example under the
barrel, and also linked to the electronic board, so that, through it, the target to which the weapon points can be displayed in the control center.

[0022] And finally, also optionally a microphone and a speaker, preferably arranged at the rear of the weapon so that the sound of the user’s voice easily reaches, also being linked to the electronic board, so that in the control center, it is possible receive the sound picked up by the same, as well as speak into it. Logically for said option, the connection of wireless communication between weapon and control center must be using bidirectional voice transmission line.

[0023] It should be noted moreover that the described elements will be conveniently integrated into the weapon so that their manipulation is not possible without leaving evidence of it in the control center, for example by incorporating some kind of electronic sensor able to detect such manipulation.

[0024] This achieves a very strict control of the use of weapons that incorporate said device, being their operation as follows:

[0025] When purchasing the weapon, the supplying settlement, in addition to permits and authorizations required according to the corresponding legislation, can perform a first control by associating said weapon to the user buyer (and eventually to any other authorized person or family member that is also expected can be a user of the same weapon) by associating a photograph of said user(s) with a single code entered on the electronic board of the weapon, and that will be the sign for the wireless communications between weapon and control center, being introduced such codes and photograph(s) along with the other user’s data in the database of the remote control center, which should be controlled by the competent authority and, allegedly, should bear the cost of the communication system, although this is an aspect that does not directly affect the device object of the invention.

[0026] In this way, every time the user triggers the weapon safety lock, the remote control center automatically will be aware of this and, thanks to the GPS location system, said control center may be able to know the location of the weapon at all times.

[0027] Also, it is envisaged that the control center has a specific software that can activate and deactivate automatically every one of the weapons equipped with the device of the invention, by blocking the hammer of the same and/or by activating the deactivation mechanism, without requiring that the user remove said safety lock. Thus, for example, said automatic activation can be programmed to occur every time that any of such weapons enter an previously defined area of special sensitivity, e.g. schools, hospitals, meeting places, official establishments. Such programming, moreover, can be performed so that said areas are permanent or to enlarge or modify them on a temporary basis, as appropriate, for example if it has to hold an event of special importance in a specific place and it is wanted to increase the security.

[0028] Apart from this, when user uses the weapon, once it has removed the safety lock and the weapon automatically communicates with the remote control center, in the said center, the computer system can obtain images both of the person who handles the weapon and of the target to which points, and as well as capture any existing sound around the weapon.

[0029] Exceptionally said display and listening, besides by the computer system of the control center, can be performed, if necessary, and at any given time, by specialized personnel, which, logically, can perform such visual and voice communication with carrier of the weapon in a much more direct way, for example, to verify that it is one of the authorized persons, to verify that it is not being used in an improper action, or to know another data.

[0030] In the light of the above, it is found that the electronic safety and control device for firearms represents an innovation of structural and constitutive characteristics unknown so far to this end, reasons which in combination with its practical utility, provide it with enough basis to obtain the exclusivity privilege which is applied for.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0031] In order to complement the description that is being carried out and with the object to help to a better understanding of the invention, a set of drawings is accompanied to the present specification, as an integral part thereof, in which with an illustrative and non-limiting character, the following has been represented.

[0032] FIG. 1 shows a side elevation schematic view of an exemplary firearm to which has been incorporated the electronic safety and control device object of the invention, and being appreciated therein the main elements comprising it.

[0033] FIG. 2 shows an elevation view of the exemplary weapon with the device of the invention shown in the preceding figure, represented in this case by its opposite side.

[0034] FIG. 3 shows an elevation view of the same exemplary weapon with the device of the invention shown in the FIGS. 1 and 2, represented in this case half-disassembled, so that the incorporation of the micro-primer inside, next to the hammer, can be seen.

[0035] FIG. 4 shows a schematic representation of the wireless communication between the weapon equipped with the device of the invention with the remote control center.

DETAILED DESCRIPTION OF THE INVENTION

[0036] In light of the previously mentioned figures, and according to the enumeration adopted, an example of a preferred and non-limiting embodiment of the device object of the invention can be observed therein, which comprises the parts and elements which are indicated and described in more detail below.

[0037] Thus, as shown in said figures, the device in question comprises an electronic board (1) with microchip of wireless communication with a computerized remote control center (2), which is provided with GPS location system and is built in the weapon (3), for example in the area of the butt (4), since said weapon consists of a gun, as in the example shown, or a rifle, preferably automatic or semiautomatic. It also comprises an electronic locking/unlocking system associated with the safety lock (5) and the hammer (6) of the weapon and linked to the electronic board (1); and a rechargeable battery (7), that electrically feeds the different elements on the device.

[0038] In addition, the device also includes the incorporation of a weapon deactivation system. For example, a micro-primer (11) is built next to the hammer (6), which is also linked to the electronic board (1); a main micro-camera (8) is located at the rear of the weapon (3) to capture the image of the weapon’s carrier and linked to the electronic board (1) and, also optionally, a secondary micro-camera (9), located at
the front of the weapon to capture the target to which the weapon points, for example under the barrel, and also linked to the electronic board (1).

Finally, and also optionally, the device also comprises the incorporation of a microphone and speaker (10), also linked to the electronic board (1) and arranged, preferably, in the lateral rear area of the weapon to facilitate the capture of sound of the weapon’s carrier thereof.

Having sufficiently described the nature of the present invention, as well as the way of putting it into practice, it is not considered necessary to further extend its description for any person skilled in the art to understand its scope and the advantages derived therefrom, stating that, within its essence, the described device can be put into practice in other embodiments which differ only in detail from the one indicated by way of example, and which are also covered by the protection which is sought provided that its fundamental principle is not altered, changed or modified.

1. Electronic safety and control device for firearms, applicable to automatic or semi-automatic guns or rifles, characterized in that it comprises an electronic board with a microchip and wireless communication technology for transmitting data, or data and voice, and with GPS location system; an electronic locking/unlocking system associated with the safety lock and the hammer of the weapon and linked to the electronic board; and a rechargeable battery that electrically feeds the different elements on the device; and where the cited wireless communication of the electronic board is performed with a computerized remote control center that receives data from the board and transforms them into information so that it is processed and, in turn, sends data to the board automatically causing the activation or not of any of the elements on the device to which it is linked.

2. The electronic safety and control device for firearms, according to the claim 1, characterized in that it also comprises a weapon deactivation system linked to the electronic board.

3. The electronic safety and control device for firearms, according to the claim 2, characterized in that the weapon deactivation system comprises a micro-primer built next to the hammer.

4. The electronic safety and control device for firearms, according to claim 1, characterized in that it also comprises a main micro-video camera located at the rear of the weapon and linked to the electronic board.

5. The electronic safety and control device for firearms, according to claim 1, characterized in that it also comprises a secondary micro-video camera located at the front of the weapon and linked to the electronic board.

6. The electronic safety and control device for firearms, according to any claim 1, characterized in that it also comprises a microphone and speaker linked to the electronic board.

7. The electronic safety and control device for firearms, according to the claim 6, characterized in that the microphone and speaker are arranged on the lateral rear of the weapon.

8. The electronic safety and control device for firearms, according to claim 1, characterized in that the electronic board is arranged and built in the area of the butt of the weapon.