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(54) **DEVICE FOR LAUNCHING INCAPACITATING PROJECTILES**

VORRICHTUNG ZUM ABSCHIESSEN VON AUSSERKRAFTSETZUNGSPROJEKTILEN

DISPOSITIF LANCEUR DE PROJECTILES D'IMMOBILISATION

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Description

[0001] The purpose of the present invention is an immobilizing projectile firing device as defined in claim 1. The immobilizing projectile firing device is magnetically attached to virtually all of the short-range weapons within the area where the projectile is fired, trapping the projectile in a muzzle and obtaining several functions from the moment of firing, for example: reducing the lethality of the shot by retaining the projectile, increasing its mass, its volume and reducing its speed, since this device utilizes the kinetic energy of the projectile to compress an internal chamber, which, when reduced in volume, violently forces the release of a secondary projectile due to the effect of air compression contained in that chamber, such as: electronic incapacitation modules, disabling chemical capsules, tranquilizer darts or simply considerable mass bodies designed to only hit the target in a non-lethal way, always utilizing the inertia and kinetic energy of a potentially lethal shot, offering a wide range of possibilities to the user without modifying the weapon or its ammunition in any way.

Background for the invention

[0002] At present within the European Union electric shock pistols (or shotguns) are subject to controversy due to various accidents that have caused serious injury or even death. These are characterized as such because the projectile is always attached to the weapon, regardless of whether it is in use or not, and gives an electric shock to the user, leaving them immobile.

[0003] To alleviate this problem, it is well known that American patent US2011203151 describes a method and apparatus for the firing of electrified firearm projectiles (a shotgun) using a cylinder head closure specially designed to avoid firing lethal ammunition. This document is especially focused on its use in shotguns and has a specific cartridge.

[0004] The main difference between the invention presented here and the American document is that the invention proposed here is a medium attached to any active short-range weapon, whereas in the American document it is confined to a medium that is introduced within the shotgun or electrified weapon that propels it at the target.

[0005] The main difference between the invention presented here and the American document lies in the fact that the invention proposed herein is a means capable of attaching itself to any active short-range weapon on the part of the user in a simple and quick way, while in the American document it is limited to a medium that is inserted into a shotgun.

[0006] The invention recommended here is also differentiated by the fact that, being an external element or means, it is the agent that makes the decision regarding its use when necessary; in addition, it is not necessary to modify active weapons of state bodies and security, so agents will not have to carry two differentiated weap-

ons and will not need a high economic disbursement, since it will only be necessary to buy the device in order to employ it.

[0007] Similarly, the solution proposed in the American patent also differs in that its immobilizing means will be exclusively an electric shock, whereas in the case of the invention proposed here it may be either an electric shock, a paralyzing gas or any other similar means.

[0008] US3895579A discloses an irritant agent device including an irritant agent element formed by an irritant agent cartridge such as a tear gas cartridge surrounded by a soft, resilient casing for protecting against physical injuries or mechanical damage at a target site and having a launching tube connected with element for facilitating the launching of the element from a barrel of a firearm. The launching tube is positioned within the casing and may be completely hidden within the casing such that no portion of the tube protrudes therefrom or may extend outwardly from the casing and be separable from the element after launching. The launching tube is also provided with a braking arrangement mounted thereon for aiding in the separation of the tube from the element after launching.

[0009] US8910411B1 discloses an auxiliary projectile for a firearm includes: an exhaust vessel to allow a bullet to pass through it yet capture muzzle blast, a barrel socket to slide onto the barrel of the firearm; and a ring magnet to attach to the end of the barrel. The exhaust vessel has opposed openings at each end to permit the unimpeded passage of the bullet discharged from a regular cartridge for a firearm. The opening nearest the muzzle is a muzzle-end opening and the opposite opening is an exit-end opening where the bullet exits. The barrel socket is attached to the exhaust vessel so as to surround the muzzle-end opening and project outward therefrom. The barrel socket is what slides over the muzzle end of the barrel of the firearm. The ring magnet fits within the barrel socket and is what attaches to the muzzle end of the firearm.

[0010] US3664263A discloses a bullet decelerator and arrestor utilizes a stacked assembly of bullet arresting discs alternating with resilient discs. The disc assembly is enclosed by pliable material and contained within a grenade assembly or other body to be accelerated by the bullet.

[0011] Finally, US2014109454A1 discloses a duplex weapon system that is capable of firing a high-mass/low-velocity ("HMLV") projectile followed by a conventional projectile such as a bullet. A barrel adapter is aligned with the bore of the barrel of a conventional firearm. The barrel adapter includes an adapter bore running completely through its length, with the adapter bore terminating in an exit in the forward portion of the barrel adapter. The HMLV projectile is slidably attached to the exterior of the barrel adapter. The HMLV projectile includes a launch tube that covers the exit of the barrel adapter. When a first cartridge is fired by the firearm, expanding propellant gas rushes down the adapter bore and out the exit. The expanding gas forces the launch tube and the

attached HMLV projectile away from the barrel adapter. The HMLV projectile then flies toward a target.

[0012] In the case of the invention described, this will not contain any cable that joins the immobilizer and the weapon, which directly affects the target being fired at. Currently, one of the drawbacks and main points of controversy regarding the use of electric pistols is that the user can use the trigger to vary the intensity and/or duration of the fire, which has caused cases of excessive use of electric power and has caused significant injuries and, in extreme cases, the death of person receiving the discharge.

[0013] This is eliminated with the invention described here, since as the projectile is independent of the will of the agent firing it, the duration of the discharge of the projectile will be predesigned and the user will not be able to vary its duration and must fire it again to increase the discharge time, minimizing the risk of a discharge that is dangerous to the physical integrity of the person receiving it.

Description of the invention

[0014] The technical problem this invention solves is obtaining a device that can be attached to a firearm (mainly a short-range weapon) to fire an immobilizing projectile at a target and to paralyze the target reducing the risk of permanent damage upon impact. To this end, the immobilizing projectile launcher according to the present invention may comprise a neodymium crown or ring, which is the same as a non-permanent bond between the weapon and the device.

[0015] It also includes a body, which incorporates a series of fins that open up to stabilize and slow it down once it is in free flight so that the secondary projectile and the body itself move at different but parallel speeds and trajectories.

[0016] Inside the body there is a system to absorb the impact of the primary projectile made of ballistic material, while compressing the air held in a posterior chamber enabled for that purpose. This compression is that which drives the secondary projectile. After that, the energy not absorbed by the reaction described above would put the rest of the device in motion. It detaches itself from the magnetic connection to the weapon and is projected along a trajectory slowed down by the fins towards the target.

[0017] Thanks to its design, the device can be attached to any type of short-range weapon, where, thanks to its magnetic union, a sufficiently durable union is generated so there is no risk of possible incidents during its use. This include detachments due to violent movements when the agent is under stress.

[0018] Similarly, by using the device presented here, the user will be able to convert a potentially lethal shot into a shot of reduced or negligible lethality because, unlike conventional electric pistols, the shot only causes a controlled shock and does not allow the user the possi-

bility of increasing or decreasing the intensity of the discharge.

[0019] Because the weapon to which the device is attached nor the ammunition it uses is not modified, its maintenance and the manufacturer's warranty (that of both the gun and the ammunition used) are not altered.

[0020] If the use of the device is not sufficiently effective or deterrent, the user will be able to dismantle the device and use their short-range weapon in a conventional manner. This means the user is properly armed in critical situations.

[0021] The use of the device presented here will allow the user's weapon to not go unused after having used it against a target, since the weapon is completely free to be used against another target under normal use. This can be vital in dangerous operations, where the user decides to use the immobilizer immediately upon encountering a target, and if that weren't not enough, or there are other targets, they can use their active weapon normally (or by attaching it to another device such as the one presented here).

[0022] Throughout the description and the claims, the word "comprises" and its variants do not intend to exclude other technical characteristics, additives, components or steps. For experts in the field, other objects, advantages and characteristics of the invention will be derived in part from the description and in part from the use of the invention. The following examples and figures are provided by way of illustration and are not intended to restrict this invention. This invention also covers all possible combinations of particular and preferred embodiments indicated herein.

Brief description of the figures

[0023] A brief description is given below of a series of illustrations that help to better understand the invention and are expressly related to an implementation of said invention that is presented as a non-limiting example.

Fig.1 shows a schematic view of the immobilizing projectile firing device attached to a weapon when triggered.

Fig.2 shows a schematic view of the immobilizing projectile firing device attached to a weapon once it has been fired from the weapon.

Fig.3 shows a schematic view of the device once the immobilizing medium leaves the device presented here.

Preferred use of the invention

[0024] A preferred use of the invention is shown in the attached figures. More specifically, the immobilizing projectile firing device, which is the object of this document, is characterized by the definition of a body (1) that attaches to a weapon (2) through its crown (3) or ring made of a high-performance magnetic material, such as neo-

dymium or alnico.

[0025] The body incorporates a series of fins (4) that will open up to slow down the body (1) once it has been fired from the weapon (2).

[0026] Internally, the body (1) presents a series of strips or fibres of a ballistic material (5) such as, for example, Dyneema® or similar, housed in an internal cavity (6) that slows down the propulsion of a primary projectile (7) fired in the weapon (2) using a dock-like effect. The action of the primary projectile (7) in the cavity (6) will activate the device, and when the fibres (5) have completely contracted, the propulsion of the secondary projectile (8) will be activated and released to be able to act against the target.

[0027] The secondary projectile (8) is located at the opposite end of the crown or ring (3) which joins the body (1) to the weapon (2).

[0028] This secondary projectile (8) may be an electric shock, a paralyzing gas, a dart, or a similar medium.

Claims

1. Immobilizing projectile firing device comprising a body (1) further comprising a crown or ring (3) in a first end arranged to be magnetically attached to a weapon (2), wherein the body (1) incorporates a series of fins (4) expandable when the body (1) has been fired in order to slow it down, the body (1) internally presents a series of strips or fibres of a ballistic material (5) lodged in an internal cavity (6) and configured to stop the propulsion of a primary projectile (7) fired by the weapon (2) and activating the body (1), and a secondary projectile (8) is located in the body (1) at an end opposite of the crown or ring (3), the device being configured such that, when the fibres of the ballistic material (5) have completely contracted by the kinetic energy of the primary projectile (7) impacting the ballistic material (5), the propulsion of the secondary projectile (8) is activated and the secondary projectile (8) is released due to the compression of air in the internal cavity (6) to be able to act against a target.
2. The device in accordance with claim 1 where the crown or ring (3) is materialized using a high-performance magnetic material, such as neodymium, alnico or a material with equivalent mechanical characteristics.
3. The device according to claim 1 where the ballistic material is Dyneema or a material with equivalent mechanical characteristics.
4. A weapon (2) **characterized in that** an immobilizing projectile firing device according to any of claims 1 to 3 is magnetically attached to the weapon's barrel through a crown or ring (3) of the body (1) of said

immobilizing projectile firing device.

Patentansprüche

1. Immobilisieren einer Projektilabschussvorrichtung, umfassend einen Körper (1), der ferner eine Krone oder einen Ring (3) in einem ersten Ende umfasst, das so angeordnet ist, dass er magnetisch an einer Waffe (2) befestigt ist, worin der Körper (1) enthält eine Reihe von Flossen (4), die sich ausdehnen lassen, wenn der Körper (1) abgefeuert wurde, um ihn zu verlangsamen; Der Körper (1) weist intern eine Reihe von Streifen oder Fasern aus ballistischem Material (5) auf, die in einem inneren Hohlraum (6) angeordnet sind und so konfiguriert sind, dass sie den Antrieb des von der Waffe (2) abgefeuerten Primärprojektils (7) stoppen und aktivieren Der Körper (1) und ein sekundäres Projektil (8) befinden sich im Körper (1) an einem der Krone oder dem Ring (3) gegenüberliegenden Ende, wobei die Vorrichtung so konfiguriert ist, dass bei den Fasern des ballistischen Materials (5)) sich durch die auf das ballistische Material (5) auftreffende kinetische Energie des Primärprojektils (7) vollständig zusammengezogen haben, der Antrieb des Sekundärprojektils (8) aktiviert wird und das Sekundärprojektil (8) aufgrund der Luftkompression in freigesetzt wird den inneren Hohlraum (6), um gegen ein Ziel wirken zu können.
2. Vorrichtung nach Anspruch 1, wobei die Krone oder der Ring (3) unter Verwendung eines magnetischen Hochleistungsmaterials wie Neodym, Alnico oder eines Materials mit äquivalenten mechanischen Eigenschaften materialisiert ist.
3. Vorrichtung nach Anspruch 1, wobei das ballistische Material Dyneema oder ein Material mit äquivalenten mechanischen Eigenschaften ist.
4. Waffe (2), die **dadurch gekennzeichnet ist, dass** eine Immobilisierungsprojektil-Abschussvorrichtung nach einem der Ansprüche 1 bis 3 durch eine Krone oder einen Ring (3) des Körpers (1) des Immobilisierungsprojektil-Abschusses magnetisch am Waffenlauf befestigt ist Gerät.

Revendications

1. Dispositif d'immobilisation de tir de projectile comprenant un corps (1) comprenant en outre une couronne ou anneau (3) dans une première extrémité agencée pour être attachée magnétiquement à une arme (2) dans laquelle le corps (1) incorpore une série d'ailettes (4) extensibles lorsque le corps (1) a été tiré pour le ralentir;

le corps (1) présente intérieurement une série de bandes ou fibres d'un matériau balistique (5) logées dans une cavité interne (6) et configurées pour arrêter la propulsion du projectile primaire (7) tiré par l'arme (2) et activant le corps (1), et un projectile secondaire (8) est situé dans le corps (1) à une extrémité opposée à la couronne ou à l'anneau (3), le dispositif étant configuré de telle sorte que, lorsque les fibres du matériau balistique (5)) ont complètement contracté par l'énergie cinétique du projectile primaire (7) impactant le matériau balistique (5), la propulsion du projectile secondaire (8) est activée et le projectile secondaire (8) est libéré en raison de la compression de l'air dans la cavité interne (6) pour pouvoir agir contre une cible.

2. Dispositif selon la revendication 1 dans lequel la couronne ou la bague (3) est matérialisée à l'aide d'un matériau magnétique performant, tel que le néodyme, l'alnico ou un matériau aux caractéristiques mécaniques équivalentes.
3. Dispositif selon la revendication 1 où le matériau balistique est du Dyneema ou un matériau à caractéristiques mécaniques équivalentes.
4. Arme (2) **caractérisée en ce qu'**un dispositif de tir de projectile d'immobilisation selon l'une quelconque des revendications 1 à 3 est attaché magnétiquement au canon de l'arme par une couronne ou anneau (3) du corps (1) dudit tir de projectile d'immobilisation.

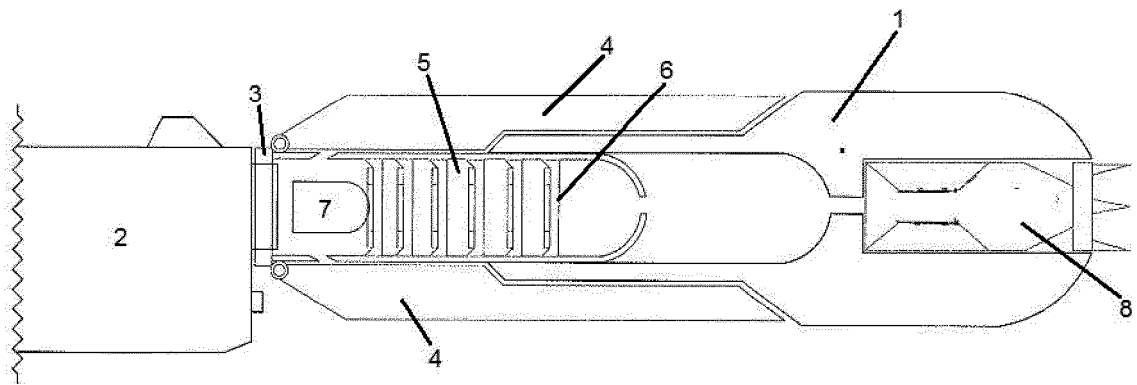


FIG. 1

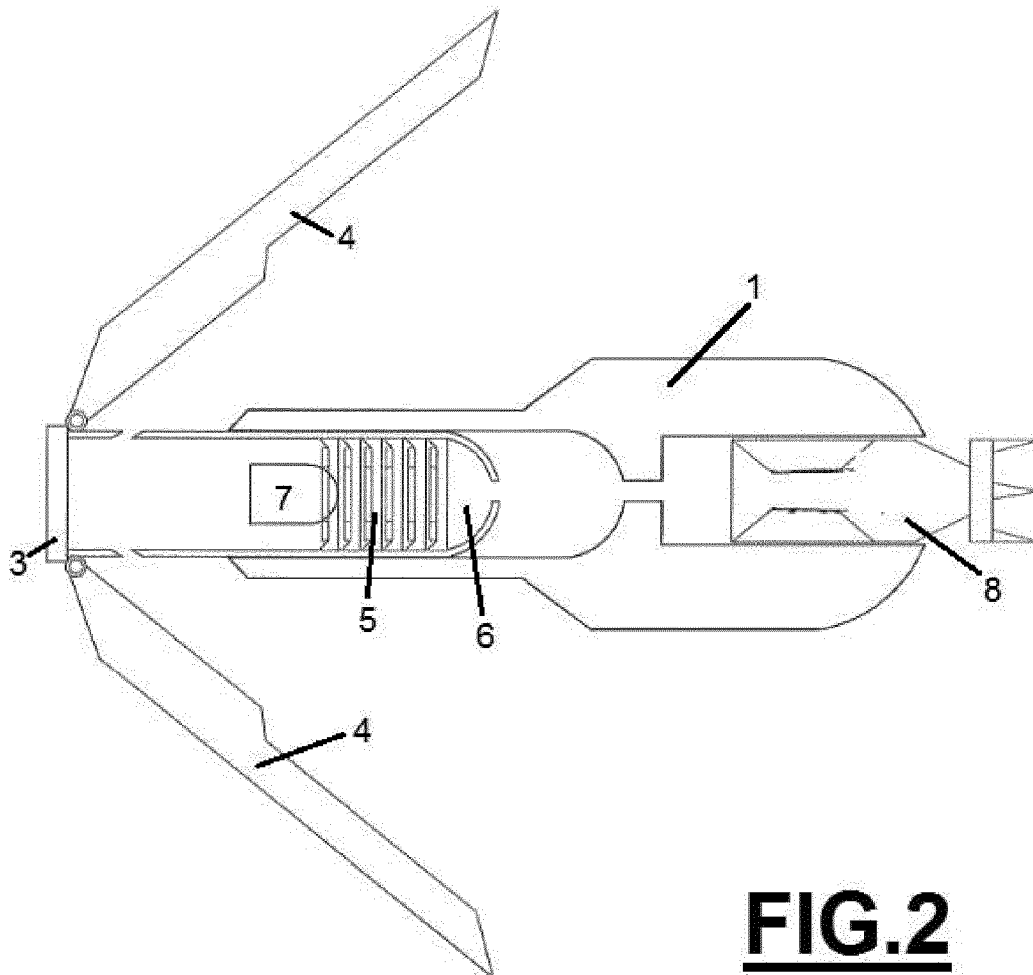
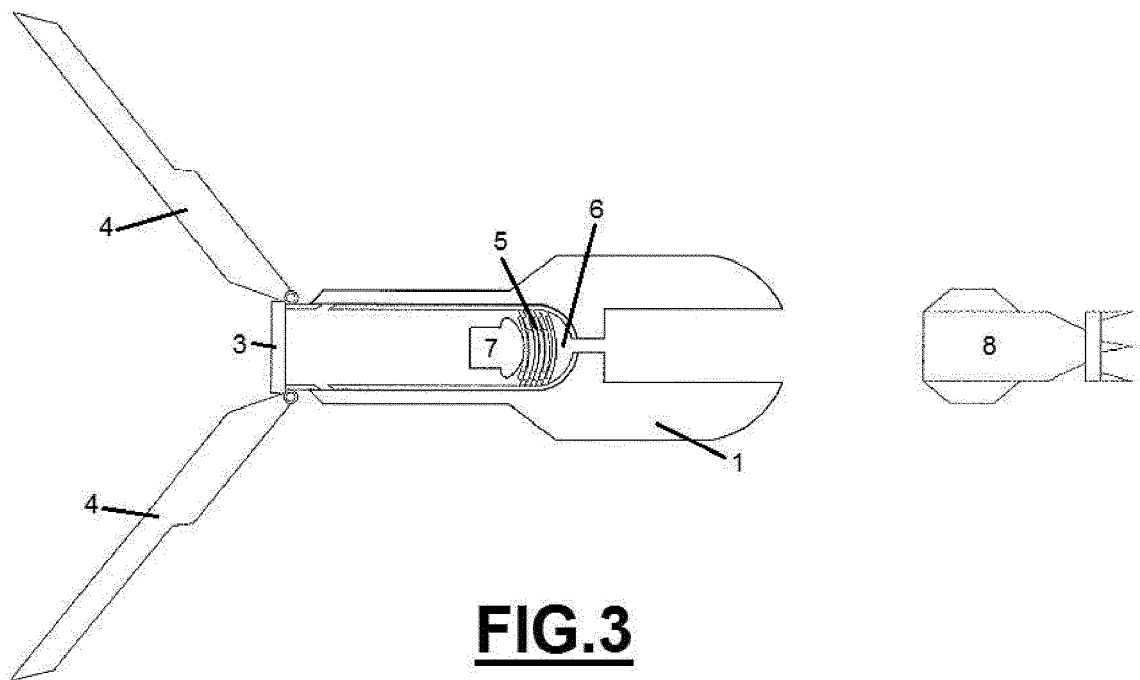


FIG. 2



REFERENCES CITED IN THE DESCRIPTION

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