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(54) FIRING CARTRIDGE AND REMOTE-ACTING ELECTROSHOCK WEAPON FOR THE USE OF A CARTRIDGE

(57) State of the art:

The invention relates to shooting cartridges of non-lethal remote electroshock weapons (DESHO) and to the DESHO for using such cartridges.

Field of the invention is non-lethal remote-action weapon with electric means of damaging biological targets.

The technical result is creation of a shooting cartridge DESHO with an internal source of energy for initiating a propellant charge, and technologically simple samples of DESHO, including multi-charged, insensitive to electrostatic discharges, allowing use thereof under any atmospheric conditions, with the possibility of contact use or demonstration of a damaging electric discharge, DESHO with attached shooting cartridge, and with reduced overall dimensions.

The shooting cartridge has gun barrels with probes and a current conductor located in the probes or cavities for the current lead, a propellant charge and a source or generator of electrical or mechanical energy for initiating the propellant charge driven by means of a DESHO part.

DESHO for use of the cartridge has a housing, a source of electrical energy, a generator of high-voltage damaging pulses, a switch of the generator of high-voltage damaging pulses, pockets for installing cartridges or a magazine or a magwell for several cartridges, an element of action powered by a source or generator of initiating a shooter's shot and a switch for the generator of high-voltage damaging pulses interacting with the element of action.

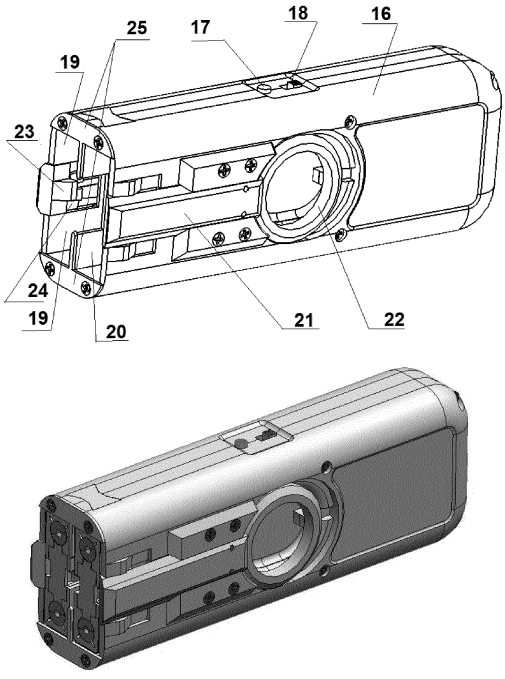

FIG. 3

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Description

Field of the invention

[0001] The invention relates to shooting cartridges of non-lethal remote electroshock weapons (DESHO) and to DESHO for using such cartridges.

State of the art

[0002] A shooting cartridge DESHO according to Russian Federation patent No. 2351871 is known [1]. which is selected as an analogue of the proposed invention. The cartridge consists of an inner plastic case with gun barrels in which probes (projectiles) are installed, with devices for fixing on the target (needles with grooves) and propelling charges equipped with a pyrotechnic propellant composition sensitive to a high-voltage electrospark initiating pulse. The propellant electrodes are connected to each other by a connecting conductor laid outside the inner case. A cavity is located between the gun barrels, divided into two parts by a partition. In each of the two parts of the cavity (pockets), there is a laying of an electric wire (current lead) belonging to one gun barrel, one end of which is connected to one of the probes, and the other to the cartridge case and is a current-supplying electrode. The inner case is placed in the outer case and fastened to it by means of a non-separable connection. When fired, the propelling charges initiated by a combat high-voltage electro-spark discharge DESHO supplied to the combat electrodes of the DESHO and then to the propellant charges of the cartridge, accelerate the probes that are ejected from the channels to the target (the offender). During the flight of the probes, the current lead is veered from the cartridge pockets until the projectile hits the target and is fixed on it by the device for fixing on the target.

[0003] The disadvantage of the prototype cartridge is the impossibility of firing one cartridge when another cartridge (or several cartridges) is located close to it. With the close arrangement of cartridges in multiply charged DESHOs, for example, in pockets or in a magazine or in a permanent store, the initiation of the first cartridge causes the initiation of the nearest cartridge and subsequent cartridges, since the length of the high-voltage electrospark damaging discharge, which is simultaneously the initiating discharge of the cartridge pyrotechnic throwing devices. For effective damaging targets with an electroshock weapon (breakdown of dense clothing), a significant length of the spark penetration distance through the air is required, equal to 20-40 mm. At the same time, taking into account the sliding discharge inevitably developing on the surfaces of the DESHO (which can exceed the distance of the air spark discharge at the same high voltage potential by more than two times), almost all cartridges in the cage (or cartridges compactly located next to each other in the pockets of the multiply charged DESHO) can be initiated simultaneously with the mechanical destruction of the DESHO housing or the simultaneous ejection of all probes at the target. The length of the creeping discharge is increased even further by the atmospheric conditions that create a conductive film or layer on the outer and inner surfaces of the DESHO (for example, wet weather, rain, sleet, fog, sea fog and salt spray). In all these cases, a shot from a multi-charge DESHO with the indicated cartridge device causes inevitable abnormal operation of all (or most) of the charged cartridges when the first cartridge is initiated.

[0004] Thus, the inevitable initiation of neighboring cartridges during the initiation of the first cartridge in the compact designs of the DESHO forces to increase the distances between the cartridges, which increases the dimensions of the multi-charge DESHO to unacceptable sizes for wearing on the body, which is proved by the practice of using the DESHO in different countries since the invention of the first DESHO in the USA in 1970.

[0005] Another disadvantage of the prototype cartridge is the possibility of the cartridge being triggered outside the DESHO (for example, loading or discharging the DESHO with cartridges) when exposed to an electrostatic discharge accumulated on the user's clothing and body. Such an abnormal actuation is possible when an electrostatic discharge skips to any of the current-supplying electrodes, then to a conductive stack of an electric wire, and then through one propellant charge along a connecting conductor to a second propellant charge and to an electric capacity of an electric wire stack. In this case, both propelling charges are initiated with an abnormal operation of the cartridge with the release of striking probes with sharp needles and possible mechanical injury to the user at close range.

[0006] In addition to the listed disadvantages, the DESHO based on the prototype cartridge does not have the ability to demonstrate the combat discharge to the enemy (for the purpose of psychological influence to reduce aggressiveness before using in contact or firing) or contact use with an attached cartridge, since when the combat high-voltage potential is applied to the combat electrodes, the DESHO, which always adjoins also to the current-supplying electrodes of the cartridge, by the immediate initiation of the propellant charges of the cartridge with the production of a shot are followed. Thus, DESHO based on the prototype cartridge can be used in contact (or a demonstration of a combat electric discharge is made) only with the cartridge disconnected from the weapon, which excludes its rapid remote use if necessary.

[0007] A shooting cartridge DESHO according to Russian Federation patent No. 2 632 828 is known [2], which with a certain degree of similarity can be taken as the prototype. The cartridge consists of a case or an outer and an inner case made of plastic with two gun barrel in which probes are installed with conductors laying in their cavities and with devices for fixing on targets and propelling charges equipped with a pyrotechnic propellant that is sensitive to a high-voltage electro-spark initiating

pulse. The initiating electrodes of the propelling charges emerging from the inner barrel cavities of the case are isolated from each other by an elastic or viscoplastic electrical insulating material with a thickness that does not allow its electrical breakdown at an idle potential of the damaging high-voltage electric spark discharge DESHO. If a shot is required, the insulating material between the electrodes of the propellant charges is destroyed by piercing it with a conductive needle, wherein the electrodes are electrically connected and the electro-spark pulse passing through the propellant charges initiates them with the production of a shot. Propellant charges accelerate probes that are ejected from the gun barrels to the target. During the flight of the probes, a conductor is pulled out of their cavities until the projectile strikes the target and is fixed on it by a device for fixing on the target. Such a cartridge design does not have the disadvantages described for the analogue. The disadvantage of such a cartridge design is the need for puncture mechanisms in the DESHO and, in connection with this, an increase in the dimensions of the DESHO itself, where a separate volume should be provided to accommodate said mechanism. At the same time, as mentioned above, the DESHO should have dimensions that are acceptable for long-term wearing on the body, and especially the DESHO, which is not a police type, which is used quite often in connection with the official functions of a law enforcement officer, but a civilian purpose, which is used very rarely (probably) but it should be worn constantly. Another disadvantage of the design of the considered cartridge is the technological complexity of the making of an elastic insulating layer of the required electrical strength with a minimum thickness and conditions to prevent aging of elastic compounds with a loss of elastic properties and properties of the required electrical strength during the shelf life of the cartridges.

[0008] A patent search did not find direct prototype of the claimed device from the prior art.

Disclosure of the invention

[0009] The aim of the invention is to create a DESHO shooting cartridge free from the drawbacks of an analogue and similarity of a prototype, which makes it possible to create technologically simple DESHO samples, including multiply charged ones, insensitive to electrostatic discharges and allowing their use under any atmospheric conditions, with the possibility of contact application or demonstration of a damaging electric discharge DESHO with attached shooting cartridge. Also, the aim of the invention is to create samples of a multiply charged DESHO with reduced overall dimensions, resulting from the absence of the need to have additional volumes inside the DESHO housing to separate the cartridges from each other or to accommodate large-scale devices for initiating cartridges for a shot in the DESHO itself.

[0010] The essence of the invention lies in the fact that the shooting cartridge of the remote electroshock weapon comprises a case with gun barrels and projectiles with devices for securing to targets, conductors laid in projectiles or cavities of the case, at least one propellant charge, a source or generator of electrical or mechanical energy is installed in the case for initiation of a propellant charge with electrical or mechanical initiation, which is activated by pressing or impact transmitted from the element of action of the remote electroshock weapon or by moving the cartridge case relative to the remote electroshock weapon by the element of action of the remote electroshock weapon.

[0011] An additional feature is that the electric power generator is a piezo electric hit or push type generator.

[0012] An additional feature is that the source of electrical energy is an electrical battery or accumulator.

[0013] An additional feature is that the mechanical energy generator is a pre-tensioned or tensioned before firing elastic body.

[0014] An additional feature is that the source or generator of electrical or mechanical energy has an intermediate-transfer starting element for interaction with the element of action of the electroshock weapon.

[0015] An additional feature is that the source or generator of electrical energy or an intermediate transfer starting element is movably sealed.

[0016] Remote electroshock weapon comprises a housing, a source of electrical energy, a generator of high-voltage damaging pulses, at least one pocket for installing a shooting cartridge with a source or generator of initiation of a propellant charge, or a magazine or a cramp for a clip for several shooting cartridges, at least one element of action of the weapon on the source or a generator for initiating a shot of a shooting cartridge by pressing or hitting or sliding the cartridge relative to the housing of the weapon and a switch of the generator of high-voltage damaging pulses interacting with the element of action.

[0017] An additional feature is that the weapon element of action is a pusher or rod connected to a trigger, a key or a kind of ring, interacting with the switch of the generator of high-voltage damaging pulses and the shooting cartridge with the possibility of disconnecting from the shooting cartridge when it is extracted from the weapon after firing.

[0018] An additional feature is that the element of action is a rod or a pusher, or a feeder connected to an electromechanical actuator by an activated trigger and interacting with the switch of the generator of high-voltage damaging pulses.

[0019] An additional feature is that the element of action has an additional elastic element for transmitting the impact to the source or generator of initiation of the shooting cartridge or to the shooting cartridge.

Brief Description of Drawings

[0020]

FIG. 1. One of the possible embodiments of the shooting cartridge (appearance, two images).

FIG. 2. One of the possible embodiments of the shooting cartridge (cut, two images).

FIG. 3. One of the possible embodiments of DESHO (appearance, two images). Top image with shooting cartridges removed, bottom image with shooting cartridges installed (charged).

FIG. 4. One of the possible embodiments of DESHO (two images, one half of the split case is shown, the other half of the case is removed).

FIG. 5. One of the possible embodiments of DESHO (when shooting). External view: top image up to the moment of the shot, bottom image at the moment of the shot, the ejected probes and probe plugs are visible.

FIG. 6. One of the possible DESHO embodiments (two images, at the moment of cartridge extraction, the trigger rod bent to extract the cartridge is visible).

FIG. 7. Photographs of the double-charged DESHO from FIG. 3 compared to DESHO of the company OOO "MART GROUP".

Implementation of the invention

[0021] FIG. 1. The shooting cartridge consists of a polymer housing 1 with a polymer cover 2 for the cavity for placing an electric power generator, a polymer engine 3 of the electric power generator, gun barrels 4 with plugs for probes and leads 5 of conductors (see below).

[0022] FIG. 2. In the housing 1, the gun barrels 4 are made, in which the probes 6 are placed with the device 7 for fixing on the target (needles with barbs) and the laying of the current lead 8 in the inner cavity of the probe with the leads 5 of the current lead 8 on the outer surface of the housing 1. In the cavity 9 of the housing 1, there is an electric power generator in the considered version in the form of an electric piezo electric generator 10 of an impact type, one electrode 11 of which is in contact with one initiating electrode of the pyrotechnic source 12 of throwing energy with electric spark initiation, and the second electrode 13 of which is located near (with a small spark gap or directly touches) another initiating electrode of the pyrotechnic source 12 of throwing energy. The movable engine 3 (an intermediate-transfer starting element of interaction between the parts of the generator or power source and the element of action of the weapon) interacts with the pressure element of the electric piezo electric generator 10, activating it when the engine moves backward relative to the outputs of the gun barrels. Channel 14 provides fluid communication between the gun barrels 4 and the throwing energy source 12. Between the probes 6 and the ends of the gun barrels there are non-conductive wads 15 sealing the gun barrels. As the shock-type piezo electric generator in the considered embodiment of the device, a standard readily available "piezo electric element" for gas lighters is used, which is produced in many countries of the world, wherein the cost of such a piezo electric generator, for example, made in China is not more than US $0.10-0.30 [3].

[0023] The cartridge works as follows. When the weapon element of action (trigger piece or trigger element) of the DESHO presses on the engine 3, the latter moves inside the cavity 9 compressing the inner spring with the striker of the electric piezo generator 10. At the end of the stroke of the engine 3, the spring with the striker is released and strikes with the striker on the piezo element of the electric piezo generator 10. The piezo generator 10 generates a high-voltage electrical pulse, which is supplied through the electrodes 11 and 13 of the electric piezo electric generator 10 to the electrodes of the pyrotechnic source 12 of throwing energy. The throwing energy source 12 is initiated by an electric spark discharge and the combustion gases of pyrotechnical composition are fed through the channel 14 to the gun barrels 4 acting on the wads 15 and through them accelerating the probes 6 located in the gun barrels, which probes fly out of the gun barrels and fly to the target veering the current lead laid therein. In another embodiment of the cartridge, the current lead can be laid not inside the probes, but in additional cavities of the cartridge.

[0024] In another embodiment of the cartridge, instead of the electric piezo electric generator 10, a chemical source of electricity in the form of a battery or accumulator can be installed in the cavity 9, which source has a push switch interacting with the engine 3 or directly with the trigger piece or the DESHO element and a pyrotechnic source of throwing energy being initiated by Joule heat (for example, heated wire bridge). As a chemical source of electricity, it is advisable to use batteries or accumulators with a long-term storage without significant loss of electrical capacity, for example, micro-lithium ones for Bluetooth headsets, the range of which is extremely wide in many countries of the world, and the cost of such a headset, for example, made in China is not more than US $0.10-0.50 [4].

[0025] In another version of the cartridge, a source of mechanical energy can be installed in the cavity 9 instead of the piezo electric generator, for example, in the form of a pre-tensioned spring released when pressed by the trigger piece or by the DESHO element on the engine 3 or by the trigger piece or the DESHO element pensioned at the moment of pressing on the engine 3 and released in the end of its stroke, which spring is equipped with a striker and a pyrotechnic source of throwing energy with the initiation with a strike (for example, a percussion fuse detonator).

[0026] Accordingly, in various versions (designated for the use of different types of sources or generators of electrical or mechanical energy to initiate a propellant charge), a pyrotechnic source of throwing energy can be ohmic (Joule heat) (electrocapsule, electric igniter), electro-spark, or percussion fuse detonator initiation (percussion igniter). The use of an ohmic-type electric igniter is less preferable than an electric-spark igniter due to the high cost of ohmic-type electric igniters. The use of a

percussion cap igniter is also less preferable as compared to an electric spark igniter due to the complexity and high cost of a striking mechanism of miniature dimensions placed in the cavity of the cartridge.

[0027] The claimed design of the cartridge, despite the use of an electric spark initiation of the pyrotechnic source of energy for throwing probes with conductors, is completely protected from the possibility of triggering the pyrotechnic source of energy for throwing probes from electrostatic discharges accumulating on the user's body when loading, unloading and wearing a weapon, since the electrostatic potential hitting the initiation electrodes of the pyrotechnic source throwing energies are impossible due to the impossibility of electric spark breakdown from current conductors 8 to the initiating electrode of the pyrotechnic source of throwing energy through sealed and non-conductive wads 15 and channel 14, the half parts of which are obviously longer than the length of the spark channel in case of a static discharge from the human body, and the capacity of the piezo electric element is obviously less than the capacity necessary for the development of an electric spark discharge with an energy sufficient to initiate a pyrocharge.

[0028] To exclude the possibility of moisture or other foreign substances entering the cavity 9 and further to the energy source or generator and disabling them, the source or generator of electrical or mechanical energy to initiate a propellant charge or engine 3 (can be movably sealed with plastic, elastic or viscoplastic substances, for example, solid grease or sealants with the properties of ensuring its mobility after long-term storage. In the embodiments of the cartridge with a source of electrical energy in the form of a battery or accumulator, the role of an intermediate-transfer starting element can be played directly by a micro-button switch, which in this case is also sealed, for example, with an elastic membrane.

[0029] The piezo electric generator, as well as the generator of mechanical energy, both with a spring element tensioned during the shot and with a pre-tensioned spring element can be stored practically indefinitely. The chemical source of electricity, for example, a lithium battery or accumulator, can remain operational for at least 1 year or more with a loss in electrical capacity of only a few percent.

[0030] FIG. 3. Double-charge DESHO consists of a split (of two halves) polymer case 16 in which a button switch 17 of the generator of high-voltage damaging pulses, a slide switch fuse 18 are installed, pockets 19 are made for installing shooting cartridges (as described in FIG. 1 and FIG. 2) with a partition 20 between them, two-sided (on both halves of the case) movable and elastic polymer tripping levers 21 with trigger rings 22, teeth 23 and spring-loaded disconnectors 24 located in the rod. Combat electrodes 25 are located on the front end of the case 16. The trigger rod acts as an action element of the weapon (trigger piece or trigger element) of the DESHO. However, since the trigger ring is part of the trigger rod, the trigger ring or, for example, a trigger in a different design of the weapon is also an element of action or at least an integral part of the weapon element of action powered by a source or generator of electrical or mechanical energy to initiate the propellant charge of the cartridge.

[0031] FIG. 4. The electroshock weapon has a generator of high-voltage damaging pulses 26 located in the housing 16 (in the upper image the generator of high-voltage pulses is removed from the half of the housing, in the lower image it is inserted into the housing), a source of electrical energy in the form of a battery 27, a switch 28 of the generator of high-voltage damaging pulses electrically connected parallel to the switch 17. In the cavity 29 (made in each half of the split case 16) there is an ejector 30 with an ejection spring 31, and spring-loaded disconnectors 24 mounted on the trigger rod 21. The high voltage potential from the generator of high-voltage damaging pulses 26 is supplied to the combat electrodes 25. The second half of the split case, which is not shown in FIG. 4, also comprises a switch 28 (also electrically connected in parallel with the switch 17), an ejector 30 with a spring 31 and spring-loaded disconnectors 24 mounted on the second trigger rod 21.

[0032] FIG. 5. When loading an electroshock weapon, the shooting cartridges are inserted into the pockets 19, while the ejectors 30 compress the ejection springs 31, the projections of the cartridge engines 3 buried in the cartridge case jump over the teeth 23 of the elastic trigger rods 21. This fixes the cartridges in the pockets 19. The force of the tensioned ejection springs 31 are much less than the force required to press the sliders 3 when the cartridge is fired. If it is necessary to make shots, the user released the safety catch 18 with his (her) thumb, which catch is mainly a slide switch for supplying power to the electronic circuit of the generator of high-voltage damaging pulses. When the user's thumb presses (back relative to the housing 16) on the trigger ring 22, the rod 21 connected to it by the tooth 23 presses the cartridge slide 3 until the cartridge piezo electric generator 10 is triggered and the pyrotechnic source 12 of the probe throwing energy is initiated. A shot is fired and probes 6 fly at the target with current conductors 8 veered from them. At the end of the trigger ring 22 backward, its rear protrusion 32, entering when the ring moves back into the inner cavity of the case 16, presses the switch 28 of the high-voltage damaging pulse generator, switching it on, when damaging high-voltage pulses are supplied to the combat electrodes 25, and from them to the leads 5 of conductors of the cartridges. Thus, a high-voltage damaging voltage of electric current is supplied to the probes flying at the target with current conductors, acting on the target when hitting it and fixing the fired probes thereon (using the devices 7 for holding onto the target). At the end of the stroke of the rod 21 with the ring 22 backward, the protrusions of the disconnectors 24, under the action of the compressed spring, come out of the rod into the recesses 33 of the housing 16 opposite the slopes 34 of the housing. When one cartridge is fired, the potential of

the high-voltage damaging voltage also falls on the leads 5 of the conductors of the second cartridge, but the initiation of the pyrotechnic source 12 of the energy of throwing the probes of the second cartridge does not occur due to the fact that the high-voltage potential does not affect the initiating electrodes of the pyrotechnic source 12 of the second cartridge.

[0033] FIG. 6. After firing a shot and immobilizing the offender, the user with the weapon pulls the trigger ring 22 (forward relative to the case 16) with his thumb, while the protrusions of the disconnectors 24 of the lever 21 run over the bevels 34 of the case 16 and raise (squeeze) the end of the elastic lever 21 from the case 16 and wherein the tooth 23 comes out of engagement with the projection of the engine 3 of the cartridge recessed into the cartridge. The released cartridge, together with the current leads going to the target, is thrown out of the pocket 19 by the ejector 30 under the action of the ejection spring 31 compressed when charging. Thus, the fired cartridge is instantly extracted and the user can quickly install a new shooting cartridge into an empty pocket. To produce the next shot, the user with the weapon presses the trigger ring 22 of the rod 21 on the other side of the weapon, wherein the shot and the extraction of the second cartridge occurs according to the algorithm described above.

[0034] If it is necessary to exert a contact effect on the offender or to demonstrate to him an electric discharge without firing shots, the user removes the weapon from the fuse switch 18 and presses the button of the switch 17 of the generator of high-voltage damaging pulses with his (her) thumb. In this case, damaging voltage appears between the electrodes 25. At the same time, pressing the weapon with electrodes to the offender's body, the user can produce a contact effect or, at a distance from the offender, demonstrate an electric spark discharge, reducing the offender's aggression. In this case, the firing of probes from the shooting cartridges loaded into the pockets of the weapon does not occur due to the fact that the potential of high-voltage damaging pulses does not fall on the electrodes of the pyrotechnic sources 12 of cartridge throwing energy and cannot initiate them. Alternatively, the starting rod 21 may have its own backward spring. In this case, the trigger ring 22 can be replaced with a different shape of the trigger element (for example, the trigger), which does not provide the possibility of both pressing with a thumb (finger) and pushing it off in the opposite direction (which may be unusual for users despite the familiarity with the shape of the trigger element in the form of a ring in samples of the firearms). The trigger rod can also have a special stopper that stops it in the pressed position on the shot. In this case, the user, by stopping the pull rod 21 in the pressed position, can perform long-term immobilization of the offender without constantly pressing the trigger ring or other trigger element.

[0035] If necessary, the weapon is unloaded by pressing the ends of the rods 21 upward relative to the weapon housing 16 by the user. In this case, the cartridges are ejected from the pockets 19 under the action of ejectors 30.

[0036] In another embodiment, the weapon with described in FIG. 1 and FIG. 2. Cartridges can be designed as single-shot (in fact, half of the housing of the two-shot DESHO described above), as well as multi-shot with magazine or climb loading, both with a constant magazine, and with a replaceable clip with a spring-loaded magazine or magazine with shooting cartridges similar to cartridges in permanent magazines or replaceable firearms clips. In the multiple-charge embodiment of the weapon, when the user presses the trigger element of the weapon, for example, the trigger or key), the cartridge is fed from the magazine or clip forward relative to the weapon using a feeder acting due to the user's muscular force or an electric drive (for example, an electromechanical actuator of a particular design), wherein an ejection spring is located between the feeder and the cartridge, which spring is compressed by the feeder before starting the actual forward feed of the cartridge. In the front end of the weapon housing, a movable sear is fixed, with which, when the cartridge case moves forward under the action of the feeder, the engine 3 interacts. Thus, when firing a shot, the feeder first compresses the ejection spring, which, having completely compressed, begins to transfer the feeder force to the cartridge. Free running forward of the cartridge is prevented by the sear against which the engine 3 rests upon. When the cartridge case moves forward under the action of the feeder force through the compressed ejection spring, the engine 3 compresses the spring of the electric piezo generator 10 until the electric piezo generator is triggered and the pyrotechnic source of energy for throwing the cartridge probes is initiated. A shot occurs and the conductors fly towards the target. In the case of placement in the cartridge cavity of a power source for initiating a pyrotechnic source of throwing energy in the form of a accumulator or a battery, the feeder, shifting the cartridge, presses the button of the micro-switch installed inside the cartridge, which micro-switch supplies electric current to the electric igniter of the pyrotechnic source of throwing energy, thereby providing initiating and firing. After firing a shot and immobilizing the offender, when the user releases the trigger element of the weapon, the sear releases the cartridge, which, under the action of the ejection spring compressed by the feeder, is thrown forward from the weapon along with the conductors that hit the target. After that, the feeder, together with the already released ejection spring, moves back and the next cartridge rises to the place freed from the extracted cartridge under the action of the spring of the magazine or clip. The described algorithm of shots is repeated until the cartridges in the magazine or clip are used up. Another embodiment of the multiple-charge weapon is also possible, wherein the extraction of the spent cartridge does not take place under the action of the ejection spring compressed by the feeder before the actual forward feed of the cartridge begins, but using a long stroke of the feeder

under the action of an electromechanical actuator until the spent cartridge is completely withdrawn outside the housing of the weapon. Another embodiment of the multiple-charge weapon is also possible, wherein a movable element, driven by an actuator or directly by the muscular force of the shooter, presses on the engine 3, initiating the cartridge's shot, and the cartridge is ejected using another actuator until the spent cartridge is completely withdrawn outside the housing of the weapon as forward, and sideways after the release of the engine 3 from the movable part producing clicking on it. In the above embodiments with the use of electromechanical actuators, the trigger or key is also an element of action or at least an integral part of an element (or unit) of action of the weapon on a source or generator of electrical or mechanical energy to initiate the propellant charge of the cartridge.

[0037] FIG. 7. Dimensions of the double-charge DESHO according to FIG. 3 in comparison with the DESHO of the company OOO "MART GROUP" (Russia). Compared with the claimed device, the DESHO of the company OOO "MART GROUP" is only a single-shot DESHO without the possibility of contact action or demonstration of the damaging high-voltage electric discharge to the offender with an attached shooting cartridge, and without the possibility of rapid extraction of the spent cartridge for subsequent reloading.

[0038] List of cited sources:

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Claims

1. A shooting cartridge of a remote electroshock weapon comprising a housing with gun barrels and projectiles with devices for fixing on targets, conductors laid in the projectiles or cavities of the housing, at least one propellant charge, wherein a source or generator of electrical or mechanical initiation energy with electrical or mechanical initiation activated by pressing or impact transmitted from the element of action of the remote electroshock weapon is installed in the housing or by moving the cartridge case relative to the remote electroshock weapon by the element of action of the remote electroshock weapon.

2. The shooting cartridge according to claim 1, wherein the electric power generator is a piezo electroshock or push-type generator.

3. The shooting cartridge of claim. 1, wherein the source of electrical energy is an electrical battery or accumulator.

4. Shooting cartridge according to claim 1, wherein the mechanical energy generator is a pre-tensioned or tensioned before firing elastic body.

5. Shooting cartridge according to claim. 1, wherein the source or generator of electrical or mechanical energy has an intermediate-transfer trigger element interacting with the element of action of the electroshock weapon.

6. The shooting cartridge according to claim 1, wherein the source or generator of electrical energy or the intermediate-transfer trigger element is movably sealed.

7. Remote electroshock weapon comprising a housing, a source of electrical energy, a generator of high-voltage damaging pulses comprising at least one pocket for installing a shooting cartridge with a source or generator of initiation of a propellant charge or a magazine or a magwell for several shooting cartridges, at least one element of the weapon's impact on the source or generator of the initiation of the shooting cartridge shot by pressing or hitting or moving the cartridge relative to the weapon housing and the switch of the generator of high-voltage damaging pulses interacting with the element of action.

8. Remote electroshock weapon according to claim 7, wherein the element of action of the weapon is a pusher or rod connected to the trigger, key or kind of ring, interacting with the switch of the generator of high-voltage damaging pulses, and wherein the shooting cartridge is configured to disconnect from the shooting cartridge when extracted from the weapon after the shot.

9. Remote electroshock weapon according to claim 7, wherein the element of action is a rod or pusher or feeder connected to an electromechanical actuator by an activated trigger and interacting with the switch of the generator of high-voltage damaging pulses.

10. Remote electroshock weapon according to claim 7, wherein the element of action has an additional elastic element for transmitting the impact to the source or generator of initiation of the shooting cartridge shot or to the shooting cartridge.

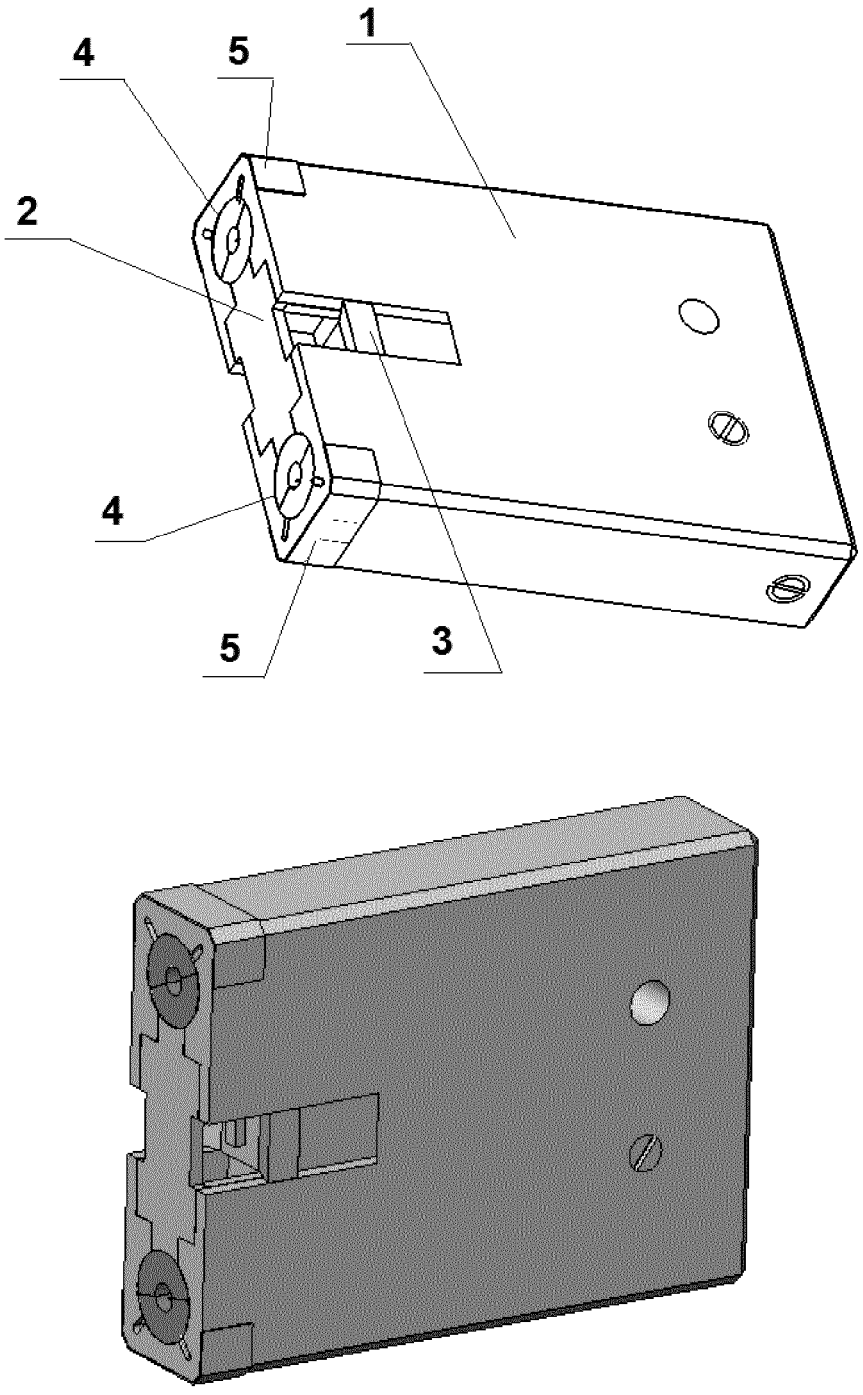


FIG.1

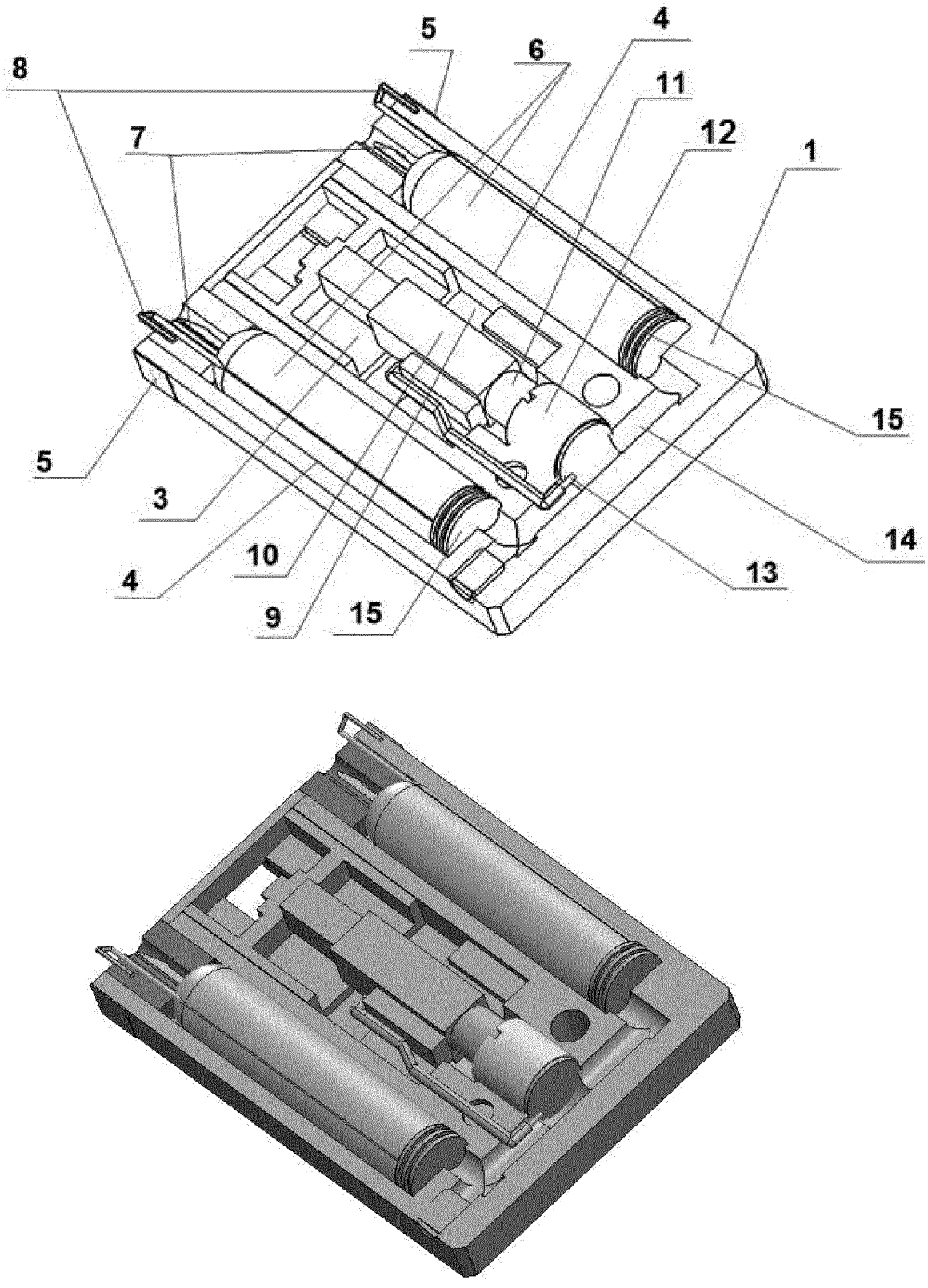


FIG. 2

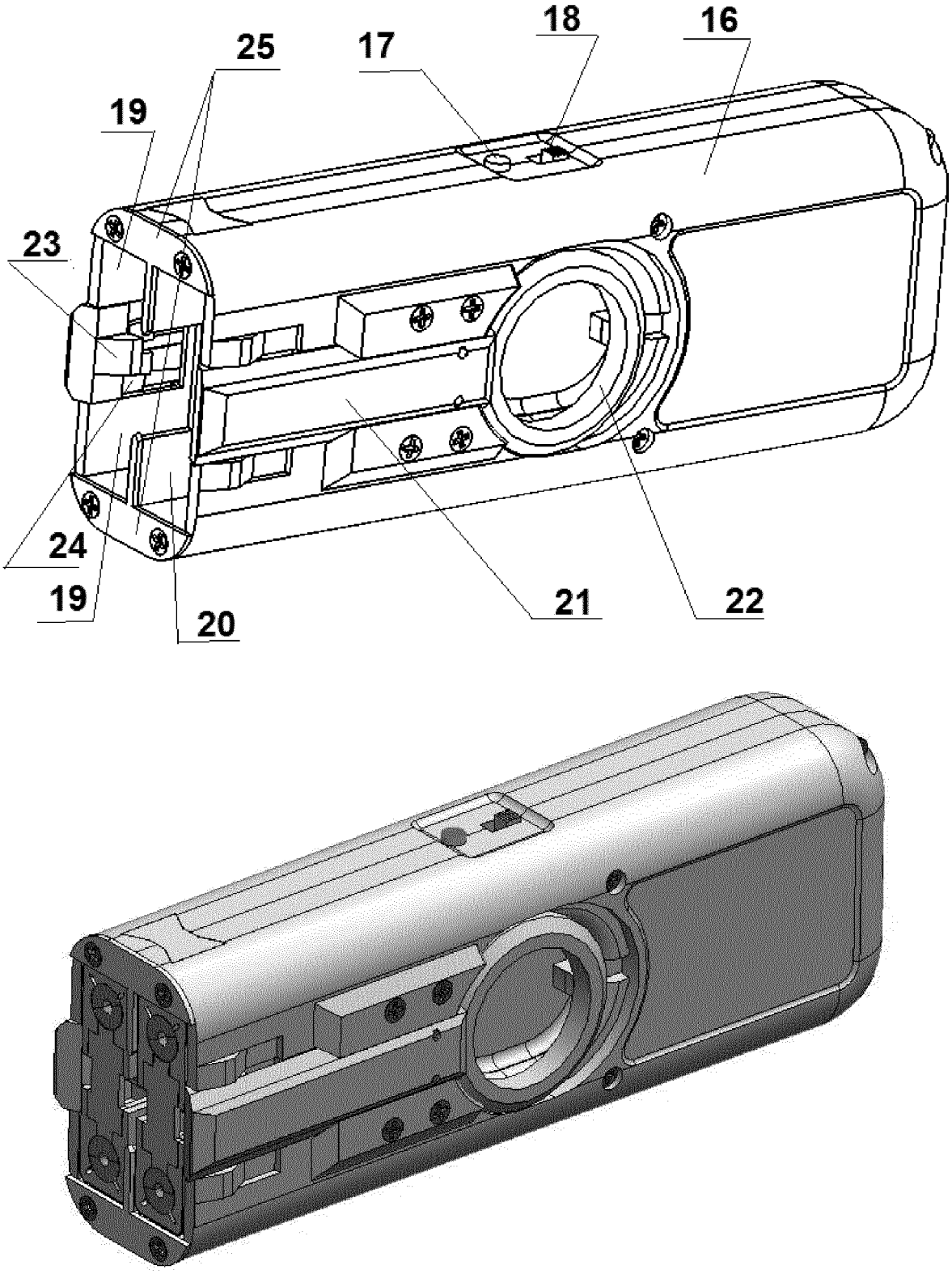


FIG. 3

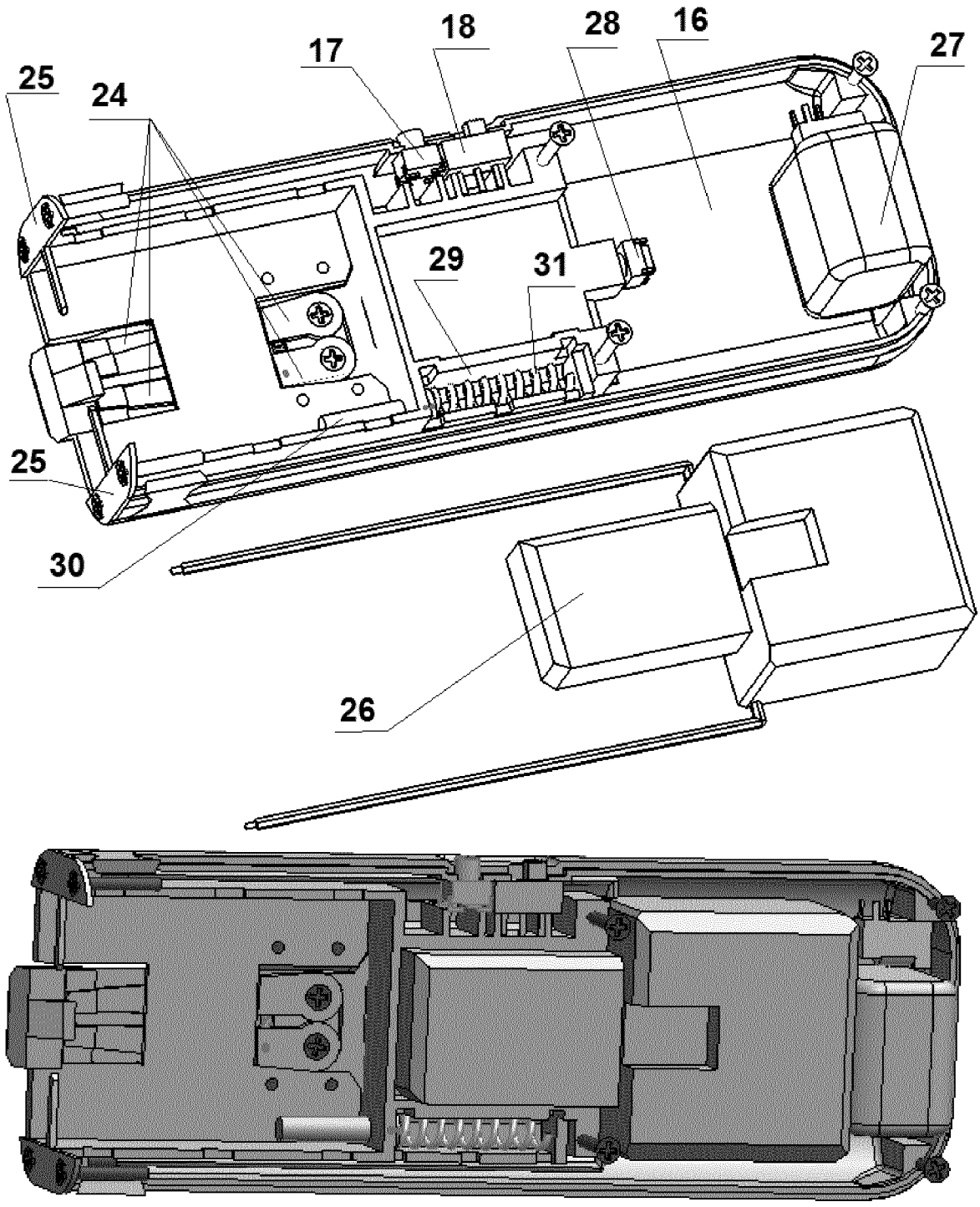
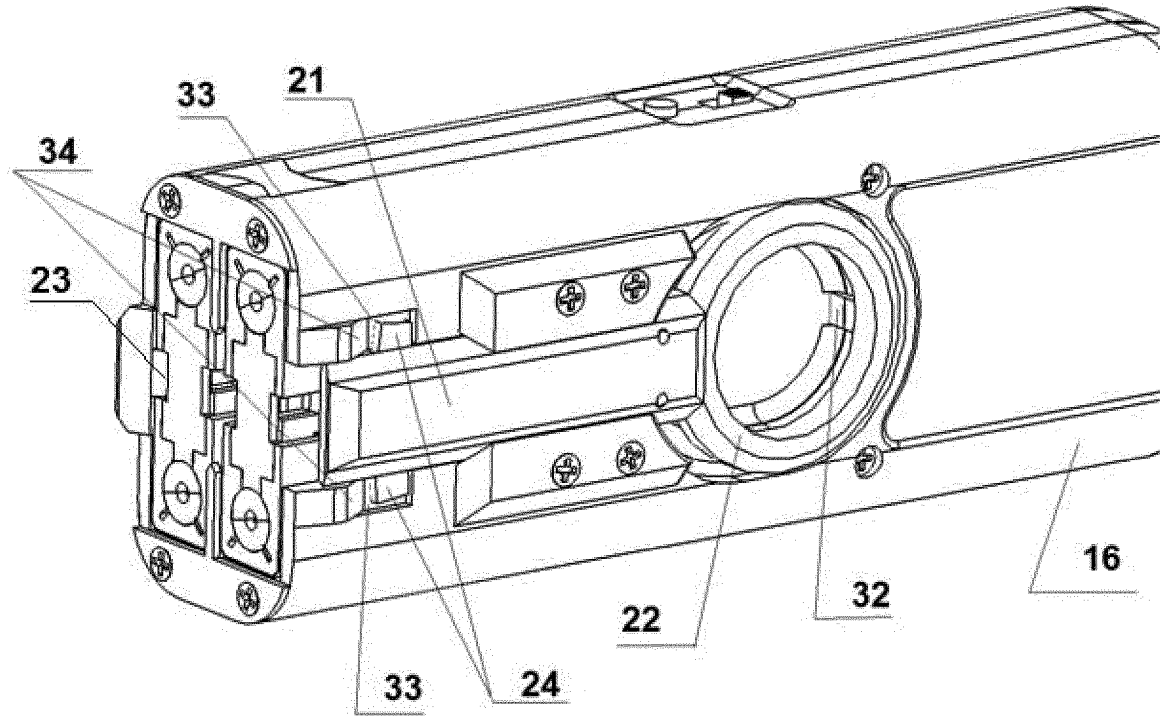


FIG. 4



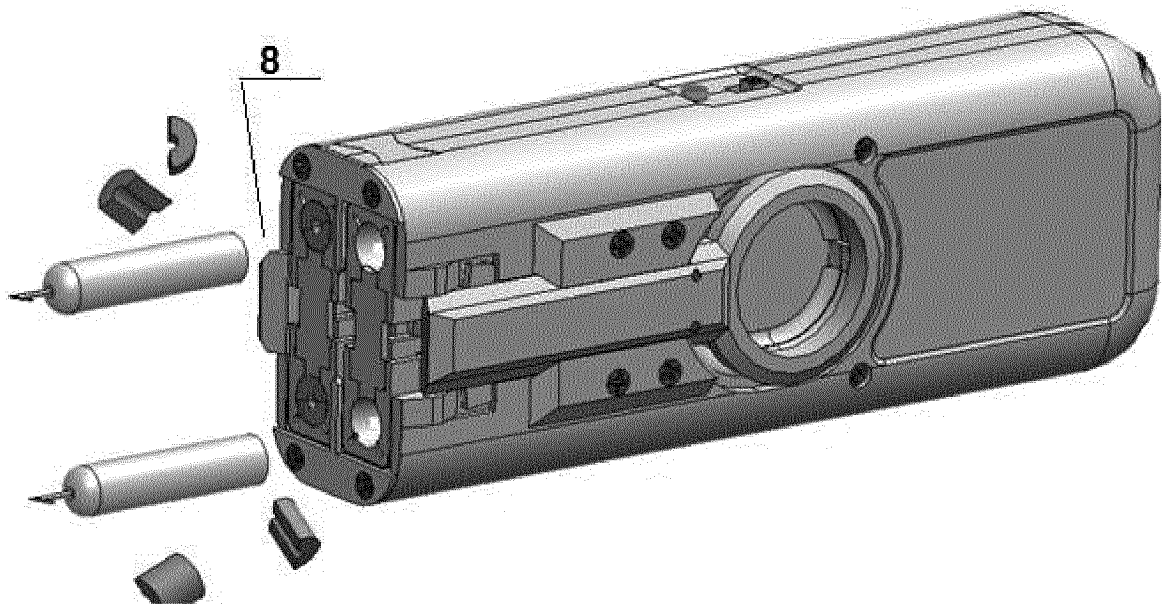


FIG. 5

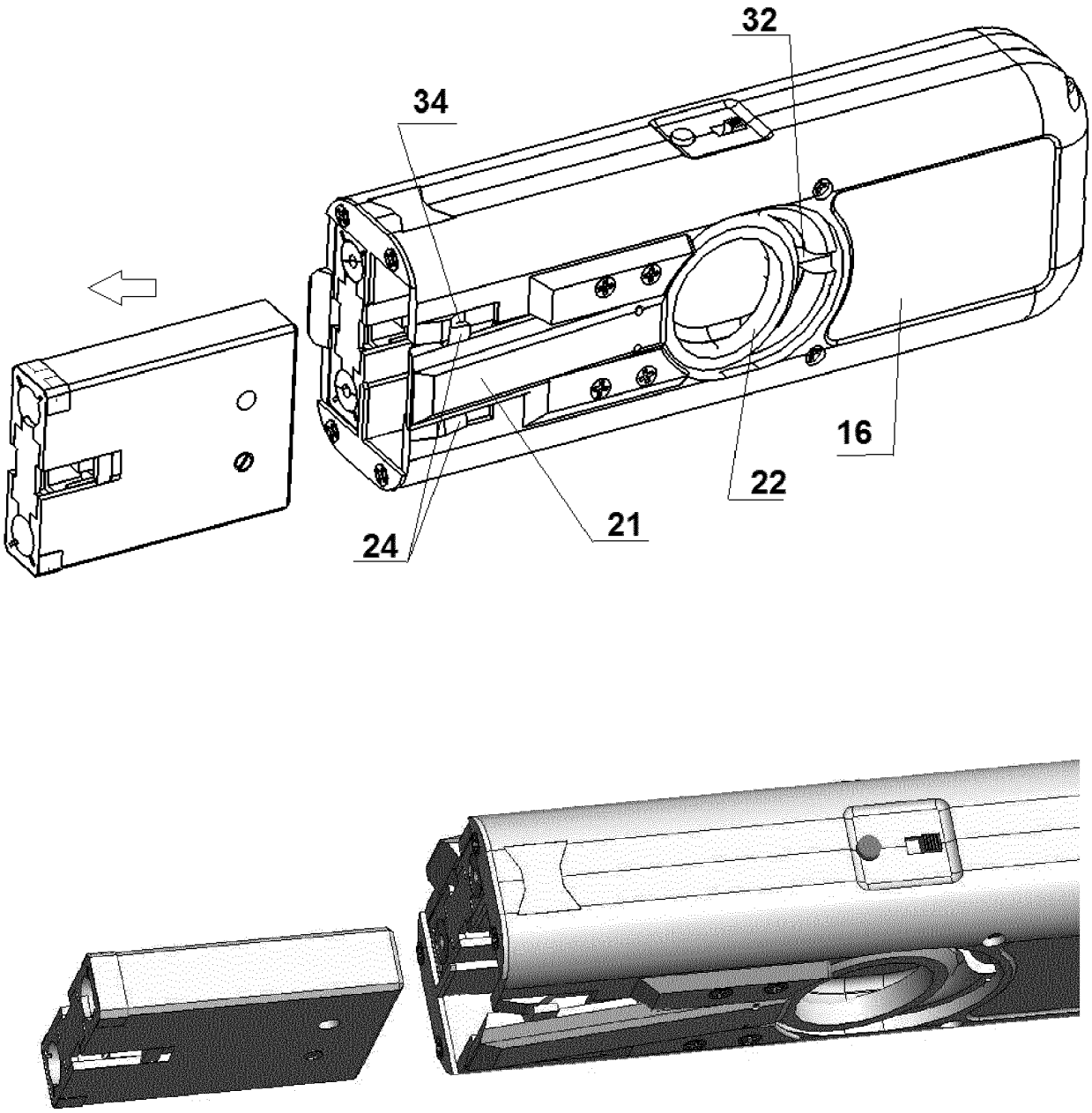


FIG. 6

FIG. 7

INTERNATIONAL SEARCH REPORT

International application No.
PCT/RU 2020/000011

A. CLASSIFICATION OF SUBJECT MATTER
F41B 15/04 (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
F41B 15/00, 15/04, F41A 1/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PatSearch (RUPTO Internal), USPTO, PAJ, Espacenet, Information Retrieval System of FIPS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
D, A	RU 2351871 C1 (VASIN ANDREI ALEKSANDROVICH et al.) 10.04.2009, point 1 of the claims	1-10
A	US 8015905 B2 (SAMUEL SUNG WAN PARK) 13.09.2011, claim 1, fig. 1, pos. 18, 24	1-10
A	US 2006/0120009 A1 (JOHN F. CHUDY II) 08.06.2006	1-10
A	RU 2006145300 A (IVANOV VLADISLAV PETROVICH et al.) 27.06.2008	1-10

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
18 May 2020 (18.05.2020)	11 June 2020 (11.06.2020)
Name and mailing address of the ISA/ RU	Authorized officer
Facsimile No.	Telephone No.

Form PCT/ISA/210 (second sheet) (April 2005)

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- RU 2351871 **[0002] [0038]**
- RU 2632828 **[0007] [0038]**