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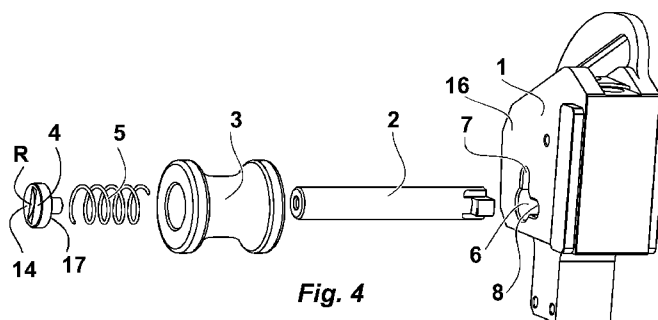


Fig. 4

(57) Abstract: The invention relates to improvements in the design and operating mechanisms in a KRISS-type firearm, or a firearm employing a mobile mass. In one aspect, the invention is an improved cocking lever assembly comprising a main pin provided with a tenon (9) at one end (E), with a supporting compression spring (5), a cocking button (3), and a retention means (4), attached to a mobile mass (1). This assembly allows direct activation of the mobile mass (1) by the action of the operator's force on the cocking lever. Advantageously, this cocking lever assembly can be mounted indiscriminately on the right or the left of the mobile mass (1) and therefore of the firearm, according to the user's preference. This cocking lever assembly combines certain safety criteria with the option of ambidextrous use often preferred in modern firearms. In another aspect, the firearm is designed to accommodate and effectively lock and release larger or extended magazines. The releasing buttons are located on and can be operated from both sides of the frame.



**AMBIDEXTROUS COCKING LEVER ASSEMBLY FOR KRISS-TYPE FIREARM
AND MAGAZINE LOCKING AND RELEASING ASSEMBLY**

REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority benefit of Switzerland national application no. 02053/10 filed on 10 December 2010. The entire contents of this application are specifically incorporated herein by reference.

FIELD OF INVENTION

[0002] The novel devices of the invention are particularly relevant to the KRISS® type of weapon available through KRISS USA, Inc. (Virginia Beach, VA). The operating principles of these firearms are described in a variety of patent applications, one of which was filed in Switzerland on June 7, 2002 as number 0975/02. This firearm, sold over the past several years in the United States under the name KRISS® Vector™ or Super V System®, features a cocking device which is somewhat complex and was inspired by prior assault rifles. The present invention relates to a novel, simplified ambidextrous cocking lever device for this weapon as well as an ambidextrous release assembly particularly useful for an extended magazine.

BACKGROUND FOR AND INTRODUCTION TO THE INVENTION

[0003] The cocking lever device characterizing the invention advantageously replaces that of the KRISS® Vector™ or Super V System®. The present cocking device, which is simpler, more efficient, and less costly to produce, allows the cocking lever to be positioned on the right or left side of the weapon according to the user's preference. The operator can simply change the direction in which the lever is mounted on the mobile mass. With this novel device the user can activate the weapon's bolt mechanism directly, since the cocking lever is connected to the body of the mobile unit. The original Kriss-type weapon, as protected by its patent, features a mobile mass that moves substantially vertically and substantially perpendicular to the axis of its barrel. The cocking lever device that is the subject of the invention, now rigidly connected with the mobile mass, naturally follows this same movement. The cocking lever device is particularly easy to unmount, without requiring tools of any kind.

[0004] The KRISS® VectorTM or Super V System® falls in the category of rifles and machine pistols referred to as "with independent cocking lever." The best-known of these firearms are the legendary "Uzi" and the MP5. With the cocking lever device characterizing the invention, the mobile mass/bolt assembly of the weapon can be maneuvered in any situation, and particularly when the weapon is not loaded, which is not possible with the current mechanism of the Kriss (or the previously cited weapons). In general and in one aspect, the invention addresses the commonly found loading problems in automatic firearms. When loading fails, it is necessary to maneuver the bolt mechanism and force the return thereof when the main spring has been unable to do so, and this maneuver is only possible in cases where the cocking lever is rigidly connected with the mobile mass (or with the bolt). Another advantage arising from the use of the present cocking lever is the ability to instantly inform the user of the firing capacity of the firearm. The position of the cocking lever essentially becomes an indicator of proper or improper closure of the mobile unit, a detail that is vitally important to the user in certain circumstances. By adapting the device characterizing the invention to a Kriss-type weapon or a weapon using such an operating principle, this weapon can incorporate all of the previously described advantages.

[0005] In a related aspect, the invention also comprises a mechanical device capable of retaining both a medium capacity magazine and a large capacity magazine in working position. This retention mechanism is advantageously designed such that a control button can be actuated by either a left-handed or right-handed user. Thus, modern standard magazine sizes (13 to 15 rounds on average) as well as much larger capacity magazines (25 to more than 32 rounds) can both be used. In addition, the operator can at will alternate between high-capacity magazines (at least 25 rounds) and standard magazines, such as magazines designed for a pistol. This advantage enables these operators to have an ultimate capacity for automatic fire with a weapon that is more precise and effective than an automatic pistol.

SUMMARY OF THE INVENTION

[0006] The invention involves two improvements to the use and operation of the KRISS-type firearm, described in several published documents including U.S.

Patent Nos. 7,997,183 and 7,201,094, both of which are specifically incorporated herein by reference. This type of firearm can employ a mobile mass, which can also be called a slider or inertia block, to control recoil forces and which moves in concert with the bolt of the firearm during the firing cycle. In one aspect, the improvement relates to an ambidextrous cocking lever than can be used with a KRISS-type firearm. In another aspect, the improvements comprise a magazine locking and releasing system that can be operated from either side of the firearm and which advantageously can lock and efficiently use extended magazines holding 25 or more rounds of a typical pistol or machine pistol ammunition, such as .40 caliber, .45 caliber, .45 ACP, or other popular or available ammunition.

[0007] Thus, in an assembly for cocking the KRISS-type firearm that employs a mobile mass that moves in conjunction with the movement of the bolt during a firing cycle, the cocking assembly of the invention comprises a removable cocking lever. The lever can be inserted into either side of the firearm frame to operate and load or cock the firearm. It is removable in that it can be removed from the firearm, or it can be locked into one side or the other and then unlocked and moved to the other side as the operator prefers. In preferred aspects shown in the drawings, the cocking lever has on one end a handle or cocking button and on the other end a main pin or rod projecting into the frame and into the mobile mass residing in the frame. This main pin has at least one tenon or projection that can lock into a receiving slot or area of the mobile mass so that the operator can forcefully move the mobile mass into a loaded or cocked position. As shown in Figs 1 and 2, the handle or cocking button (3) is in the unloaded or uncocked position in Fig 1. The groove (F) and (Fa) in both sides of firearm frame (A) restricts the movement of the handle downward toward a receiving area (11) near the bottom of the frame where the barrel is at the top of the frame. As shown in Figs 1 and 2, the receiving area is a notch in the groove within which the main pin (not shown) can be positioned to effectively lock or hold the handle near its lowermost point of movement. When the operator moves the handle or cocking button downward, the mobile mass is moved to a loaded or cocked position also, which in turn moves the bolt to a position where a new round can be chambered and loaded for firing. Accordingly, the mobile

mass as shown in the aforementioned U.S. Patents is modified to have at least one interior hole or tunnel through which the main pin can be inserted from either side of the firearm. Once inserted, the main pin can be locked into position in the mobile mass, although this is not required.

[0008] In a preferred example, the cocking lever has an elastic element or spring in the handle region that applies a force to the main pin. When the operator pushes on the handle in the direction of the firearm frame, the spring is depressed and a projection on the end of the main pin can be position into a locking area in the mobile mass. The spring can also function to clamp or tightly hold the projection on the main pin once the cocking lever is fully inserted into the mobile mass. The handle can also comprise a screw, rivet, or flange that the operator can turn in order to position the projection on the end of the main pin into the locking area in the mobile mass. This option in the handle or cocking button design can be referred to as a manual engaging switch that is capable of turning the projection or tenon on the end of the main pin into a locking area. The locking area can essentially be a slot positioned at the end of the hole or tunnel through the mobile mass, and the locking area can be present on both sides of the hole or tunnel so that the cocking button can be locked into either side. This aspect of the invention is shown in the drawings of Figs 11-12 in particular, where the bold arrows indicate the operators movement in inserting the cocking lever into the mobile mass (Fig 11), turning the manual switch (not shown, but see Fig 7 and element R) that turns the tenon on the main pin into a locking area in the mobile mass (Fig 12), and the tenon positioned in the receiving or locking area that is 90 degrees rotated from the position in Fig 12 (Fig 13). In Fig 13, since the tenon (9) on the end (E in Fig 8) of the cocking lever opposite the handle appears in the locked position, the operator would not be able to remove the main pin in the direction of the arrow shown until the manual switch is rotated back. While the embodiments depicted in the drawings here show only a single rod or main pin design, more than one rod or main pin can be used that fits through more than one hole or tunnel in the mobile mass, or fits into a larger hole or tunnel that accommodates these rods. This may be preferred in heavy caliber firearms where the mobile mass is large. The drawings shown here can be used with firearms designed to use at least up to

.45 caliber ammunition. Similarly, the shape of the rod or main pin is not limited to the circle cross-section shown here, and designs where the main pin has a more complex cross-section, such as a multiple-lobed cross-section, or even a square, rectangle, or other shape, can be used. Thus, the shape and design of the cocking lever assembly as depicted in the drawings are not a limitation of the options available through the invention described here.

[0009] In another aspect of the improvements to the KRISS-type firearm, the firearm is designed to accommodate and effectively lock and release larger or extended magazines. Thus, the firearm frame will generally comprise a magazine well and an assembly for locking and releasing the magazine. In the design of the invention, the releasing buttons are located on and can be operated from both sides of the frame. In preferred examples shown in the drawings, the assembly comprises both left and right side control buttons operably connected to a push rod within the magazine well. When depressed, the control button in turn forces a push rod to activate the movement of at least one catch projection in the magazine well to release a magazine when it has been locked into the magazine well. Generally, a firearm will have one catch projection to hold the magazine. In the invention, there can be multiple catch projections that are positioned to hold the magazine through one or more retention means on the surface of the magazine. Accordingly, the invention also encompasses magazines, especially extended magazines of 25 or more rounds, with multiple retention means to interact with the catch projections described here. Where there are two catch projections in the magazine well, these can be referred to as upper and lower catch projections, which hold the magazine simultaneously. The design of the lower catch projection can vary from the upper. In fact, in preferred examples, the lower catch projection is a hook or clasp that also functions to stabilize the magazine during the firing of the firearm. In some firearms, extended magazines have the problem of vibrating and falling out of the magazine well while firing. The assembly of the invention in one aspect solves this problem and securely holds an extended magazine even during rapid or automatic firing.

[0010] The specific aspects of the magazine locking and releasing assembly can include a spring positioned to return the control button to its resting position after the operator depresses the left or right side control button to release the magazine. Also, the design includes an upper catch projection that fits into a slot in the magazine to lock the magazine in place. Thus, a magazine has a properly positioned recess slot. The lower catch projection can, as noted above, employ a hook or clasp, and the corresponding magazine can have a properly positioned element that fastens the magazine in place when locked. Generally, the magazine is locked into place by inserting it forcefully into the magazine well, and the assembly includes elastic or spring elements that tension the catch projections so that the magazine is locked once fully inserted into the magazine well. In other aspects, the control button used with the invention comprises a pair of sloped planes that contact the upper catch projection that lock the magazine into the magazine well in order to release the magazine. The same sloped planes, or other areas of the control button, can contact a push rod that activates the lower catch projection simultaneously with the activation of the upper catch projection. The designs of the magazine locking and releasing assembly shown in the drawings here are merely exemplary of the options one of ordinary skill in the art can devise.

[0011] **EXEMPLARY DRAWINGS OF THE INVENTION**

[0012] The invention is presented in more detail using the examples shown in the following drawings:

[0013] Figures 1 and 2 show a KRISS®-type weapon with the cocking lever thereof originally positioned according to the invention.

[0014] Figure 3 shows the entire cocking mechanism in the operating position thereof. The cocking lever is shown in cross-section.

[0015] Figure 4 is an "exploded" view of the mechanical cocking device assembly.

[0016] Figures 5 and 6 show the right and left surfaces of the mobile mass supporting the cocking lever.

- [0017] Figures 7 and 8 show the entire cocking lever in detail.
- [0018] Figures 9 and 10 show the cocking lever positioned equally well on the right and left of the mobile mass.
- [0019] Figures 11, 12 and 13 show how to insert (Fig 11), lock (Fig 12), and remove (Fig 13) the cocking lever.
- [0020] Figure 14 shows the profile of a weapon with the positioning of the device subject of the invention to the front of the magazine well.
- [0021] Figures 15 and 16 show a partial view of a firearm with magazine well with a magazine engaged (Fig 15) and without a magazine (Fig 16).
- [0022] Figure 17 shows in detail the entire magazine release device of the invention and the positioning thereof in front of the magazine. The body of the magazine well is hidden in this view.
- [0023] Figure 18 shows in detail the relative movements of the parts composing the magazine release mechanism.
- [0024] Figure 19 shows in detail the upper catch of the short magazine.
- [0025] Figure 20 shows the push element of the upper catch.
- [0026] Figures 21 and 22 show the push button and the organization of the various slopes thereof.
- [0027] Figures 23 and 24 show the lower catch.
- [0028] Figure 25 shows a short magazine with the upper retention notch thereof.
- [0029] Figure 26 shows a long magazine with the tab thereof for use as the lower retention notch, positioned on the front surface of the body thereof.
- [0030] Figure 27 shows a longer, extended magazine advantageously having two retention elements.

[0031] Figure 28 shows a cross-section view of the magazine well and part of frame or body of firearm.

[0032] Figure 29 shows another profile view of the weapon with the long magazine inserted.

DETAILED DESCRIPTION OF THE INVENTION

[0033] The following description is one possible and exemplary embodiment of the cocking mechanism characterizing the invention and is not exhaustive in any way. The Figures associated with this document show the constituent parts of the compound mechanism as used in an exemplary firearm: a main body or frame (A) and mobile mass (1) with a bore or tunnel (6) traversing the mobile mass (1) from one side to the other; a groove (7) tangent to the tunnel (6), two slots (8) and (8a) also arranged in the sidewalls (16) and (16a) of the mobile mass (1). This mobile mass (1) receives in the tunnel (6) an assembly referred to as the cocking lever (Figs 7-8) composed of a main pin (2) supporting a cocking button (3) and a return spring (5) along with a spring retention means (4). The cocking lever assembly, by the design thereof, can be mounted indiscriminately on the right or the left side of the mobile mass (1), an important point that confirms the ambidextrous use of the device. The cocking lever device can be inserted and removed without using any tool whatsoever, proving its simplicity of maintenance for the user.

[0034] The mechanical cocking assembly introduced above operates with a component referred to as the "mobile mass" (also referred to as a "slider" or "inertia block" in various embodiments) and an assembly called the "cocking lever" to facilitate understanding. The mechanical component referred to as the mobile mass (1), as shown in Figs 3-6, has a main aperture called a tunnel (6), a groove tangential to said tunnel (7) and two apertures called slots (8) and (8a), (Fig 4, Fig 5, Fig 6) located on each surface, right (16) and left (16a) of the mass (1). These slots (8) and (8a) are preferably positioned at 90° to the vertical plane of the tangential slot or groove (7), but the value of this angle has no particular effect on the mounting, positioning or operation of the "cocking lever" assembly. The cocking lever assembly is composed of a main pin (2) provided with a tenon (9) at the end (E) thereof (Figs 7-8), supporting a cocking button (3), inside of which is arranged a

housing (12) (Fig 3) which can receive any of several elastic means or spring, preferably metallic spring (5), one end of which rests against the inner surface (13) of the housing (12) of the cocking button (3) (Fig 3, Fig 4, Fig 7, Fig 8).

[0035] The main pin (2) of the "cocking lever" assembly receives a retention means (4) (screw, rivet or other known mode of rigid connection), the internal surface (17) of which retains the other end of the spring (5) (Fig 4). In this configuration, the spring (5), through the force on each of the ends thereof against the internal surface (13) of the cocking button (3) and the internal surface (17) of the retention means (4) of the main pin (2), exerts a combined force on the main pin (2) and the cocking button (3). The function of this mounting is to generate a clamping effect between the surface (15) of the cocking button (3), which rests against the surface (16) or (16a) of the mass (1) or the surface (F) or (Fa) (Fig 1-2) (depending on the preferred construction) of the frame of the firearm (A) and the surface (10) of the tenon (9) carried by the end (E) of the main pin (2) which rests against the surface (11) or (11a) of the slot (8) or (8a) in opposite end of the mass (1), when inserted into tunnel (6) (Fig 3-8), depending on whether a right or left side mounting is preferred. The retention means (4), which is positively attached by pin or screw assembly or some other means to the main pin (2), receives on its outer surface (14) a groove (R) that can depress and pivot said retention means (4) and the main pin (2) and cause them to rotate, simply through the use of a fingernail, a coin, a simple tool or a knife blade. This in turn causes tenon (9) to rotate and lock through surface (11) when main pin (2) is inserted through tunnel (6).

[0036] The device characterizing the invention is mounted according to the following sequence: the traversing tunnel (6) of the mobile mass (1) receives the main pin (2) of the "cocking lever" assembly. The main pin (2), positioned by its retention tenon (9) (Fig 7-8), guided by the tangential groove (7) of the mobile mass (1) (Fig 3-6) is inserted in said tunnel (6). Relative to this action, the surface (15) (Fig 8) of the cocking button (3) comes to rest against the surface (16) or (16a) of the mass (1) or the surface (F) or (Fa) of the frame of the weapon (A) (Fig 1-2). A pushing force that may be exerted first by the operator's and then rotating force by a fingernail or by any other tool or object on the retention means (4) rigidly connected with the main pin (2), first forces the end (E) thereof to project beyond the mobile mass (1), releasing

the tenon (9), and can rotate the tenon away from the groove (7). At this moment, when the level of the projecting portion is at least equal to that of the thickness of the tenon (9), a rotational movement is applied to the retention means (4), rigidly connected with the main pin (2) inserted in the tunnel (6) of the mobile mass (1), with the help of any one of the means indicated above, to rotate the groove (R) of the retention means (4). This rotation away from the groove (7), through an angle preferably equal to 90°, as previously specified, brings the tenon (9) positioned at the end (E) of the main pin (2) opposite the slot (8) provided in the sidewall (16) of the mobile mass (1); at this exact moment in the positioning process, the user stops exerting the pushing force on the retention means (4) rigidly connected with the main pin (2). Under the effect of the spring (5) constraining the main pin (2), the tenon (9) provided at the end (E) engages with the slot (8) or (8a) arranged in the sidewall (16) of the mobile mass (1) and becomes positioned at the bottom thereof. The surface (10) of the tenon (9) supported at the end (E) of the main pin (2) is then physically resting the surface (11) against that of the slot (8) or (8a) arranged in the sidewall (16) of the mobile mass (1) (Figs 4-8 and 11-13). At this moment, the cocking lever assembly is perfectly positioned, clamped and locked so that the cocking lever assembly can be safely used to move mobile mass and cock the weapon. The cocking lever assembly is unmounted by reversing the order of installation specified above. As indicated several times, the cocking lever assembly may be mounted indiscriminately on the right or the left side of the mobile mass and therefore of the weapon.

[0037] The following description is a possible implementing example of the mechanism characterizing an aspect of the invention and it is therefore not exhaustive. The Figures associated with this document show exemplary parts constituting the ambidextrous double magazine-retention mechanism. In particular it is composed of a frame (201) with a magazine, comprising inside the opening or magazine well (201a) (Fig 16, Fig 28), thereof which receives an arbitrary magazine (205) (Fig 14, 15, 17, 25-27). The same magazine well design (201 a) (Figs 14-16, 28) includes appropriate recesses and elements and housings placed inside thereof. These elements and housings receive a control button (202), (Figs 14-18, 21-22), in the housing (235) thereof, (Fig 28), and a push element of the upper catch (207), Fig 17, Fig 18, Fig 20), in

the housing (234), (Fig 28). These housings also receive an upper catch (204), (Fig 14-16, 18-19) in the housing (239) thereof, (Fig 28), a lower catch (203), (Fig 14-16), and the return spring (209) (Fig 17), in the housing (239) thereof, (Fig 28), and the pivoting pin (208), (Fig 17-18), in a bore (237) of the frame (Fig 28). This same magazine well indiscriminately receives in the opening (201a) thereof (Fig 16, Fig 28) one of three magazines sizes exemplified (205), (205a), (205b) (Figs 25-27).

[0038] The mechanical device, subject of the invention described above, operates according to the following sequence, considering that a magazine has been already introduced in the magazine well of the weapon and may be empty or not. The user decides to replace a magazine with another according to convenience or necessity.

[0039] To do this, the operator exerts a thrusting action on one or the other of the ends (D; right) and/or (G; left) of the control button (2) (Fig 14, Fig 15, Fig 17, Fig 18 and Fig 21) with one of the fingers of the left or right hand. The control button slides in the housing (235) of the magazine well (201a) (Fig 28), and by the means of one of the slopes (221 ; 221a), whose angle can be at least equal to 45° but preferably equal to 60°, laid-out on the inner surfaces of the recess (220) (Fig 22) of said control button (202) (Fig 21-22) interacts with push element (207). Sliding of the control button (202) simultaneously and jointly constrains the push element (207) of the upper catch (204) (Fig 14, Fig 18, Fig 19, and Fig 20), sliding in the groove (234) of the magazine well (201a) (Fig 28), as well as the lower catch (203) (Fig 18) positioned in the housing (236) of the magazine well (201a) (Fig 28) by the pin (208) (Fig 17-18). This pin also guides it in rotation by means of the bore (208a) (Fig 24), itself retained in the body of the magazine well (201a) by the bore (237) (Fig 28).

[0040] This action still simultaneously and jointly causing the movement of the upper catch (204) (Fig 17, Fig 19) according to the direction of the arrow (B or A) (Fig 18) perpendicular to the axis of force of the push element (207) (Fig 18), shown by the arrow (C). The upper catch (204) (Fig 19) bearing by construction an extension (212) receiving the end of the guide rod (206) of the

return spring (21 0), and for which the head (232) of this guide rod (206) rests against the inner surface of the housing (233) of the opening (201 a) of the magazine well (Fig 15, Fig 17, Fig 28), is constrained thereby (Fig 17, Fig 19) (in this embodiment) and is, at the moment depicted, engaged in the notch (226) laid-out in the wall of the magazine (Fig 25, Fig 27). The edge (21 5) (Fig 19) is engaged under the upper surface (227) of the notch (226) of the magazine (205; 205b) (Fig 25, Fig 27) and is pushed aside by the push element (207) (Fig 20), whose slope (21 6) comes in contact with the slope (214) (Fig 19) arranged in one of the surfaces of the recess (21 3) made in the upper catch (204) and in contact with the oblique plane (216) of the push element (207) (Fig 19-20). This same action on the magazine control button (202) constrains the lower catch (203) to rotate on the pin (208) guided by the bore (208a) (Fig 17, Fig 18, Fig 23-24), according to the direction of the arrow (E) (Fig 18), and simultaneously through a fixed angle suited to release the surface (224) from the surface (228) of the tab (227) of a suitable long magazine (205b) (Fig 27). The operator's action on either of the ends (D) and/or (G) of the control button (202) forces the upper catch (204) to release the magazine, and in this specific case the magazine (205). The magazine is ejected from the magazine well (201 a) manually by the user, under the force of gravity, or by the action of the force of the magazine spring, against the ventral surface of the bolt or what takes its place and/or the stop of any magazine end block device.

[0041] At the same time, in the case of a "long" magazine (205a, 205b) (Figs 26-27) inserted according to the same process as the conventional or short magazine (205), the lower catch (203) moved by the control button (202) subsequent to the work done by the sliding of the slopes (21 9) and (21 9a), built by implementing of the hollow (21 8) (Fig 21) of the same control button (202) and by the intermediary of the surfaces (223) and (223a) arranged on each of the sides of the tail (222) of the lower catch (203) (Fig 23). This disengages its pressing surface (224) (Fig 24) from the other pressing surface (228) of the extrusion or tab (227) of the magazine (205a; 205b) (Fig 26-27). The longer magazine (205b) (Fig 27) is then ejected from the housing of the magazine well (201 a) according to the same effects as indicated above.

[0042] Any one of the ejected magazines can be replaced by a simple procedure common to all automatic weapons and performed, in the case here or in the case of the invention, as follows:

[0043] A "short" magazine (205) (Fig 25) is physically inserted in the housing (201) of the magazine well (201 a) until the catch position is reached allowing the engagement of the edge (21 5) of the upper catch (204) (Fig 19) under the upper surface (227) of the notch (226) arranged in the wall of the magazine body (205). The conventional shape of a modern magazine and in particular of the one shown in the various drawings of this specification naturally facilitates the engagement of the edge (21 5) of the upper catch (204) (Fig 17, Fig 19) by a corner pressure effect brought about by the angle (230) made by the upper neck of the magazine (205).

[0044] In another case, a long magazine (205a, 205b) (Fig 26-27) is inserted in the same way as described above for the magazine (205). In this case the lower catch (203) (Fig 23) is pushed back by the nose (231) of said magazine (205a) (Fig 26) or (205b) (Fig 27) coming in contact with the slope (225) of the lower catch (203), which forces it to rotate naturally on its pin (208) (Fig 17). This rotation constrains its return spring (209) positioned in the groove (209a) (Fig 17, Fig 23), and one of whose branches is pressed against the surface (240) of the opening (201 a) of the magazine well, which has received one or the other of the magazines described here.

[0045] According to another implementation, the longer magazine (205b) (Fig 27) can have both the same type of retention notch as the short magazine (205) and the long magazine (205a). A longer magazine (205b), therefore having two retention devices, which favors a better grip on the housing of the magazine well (201 a) in consideration of the increased weight of the magazine which, depending on its capacity, can be more than double that of the short magazine (205).

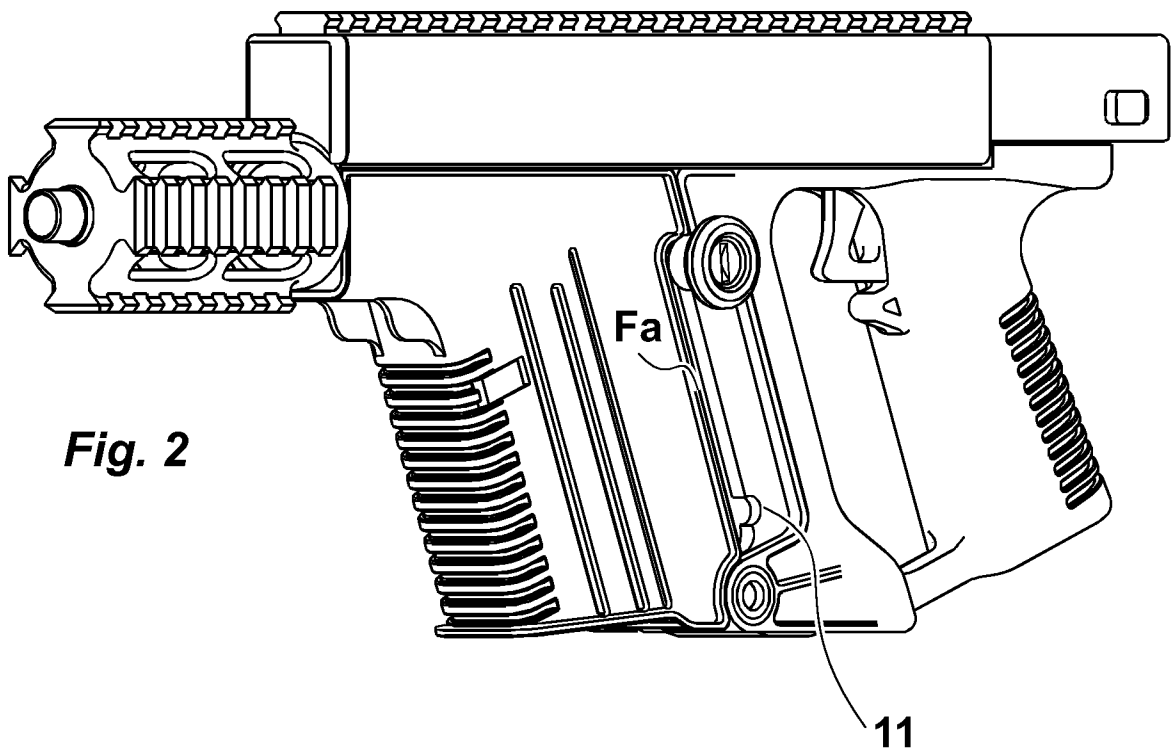
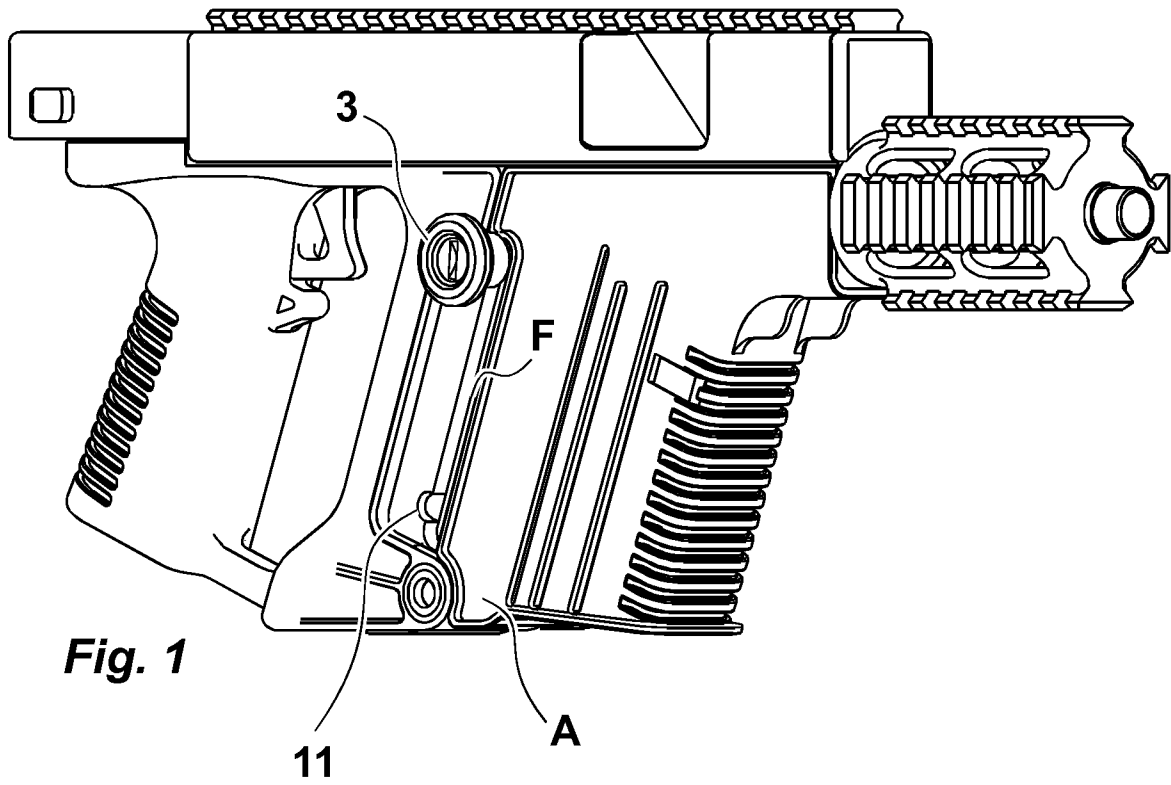
[0046] Whatever the nature and shape of the magazine, whether it is single or double stack for the presentation of one or more munitions to be loaded,

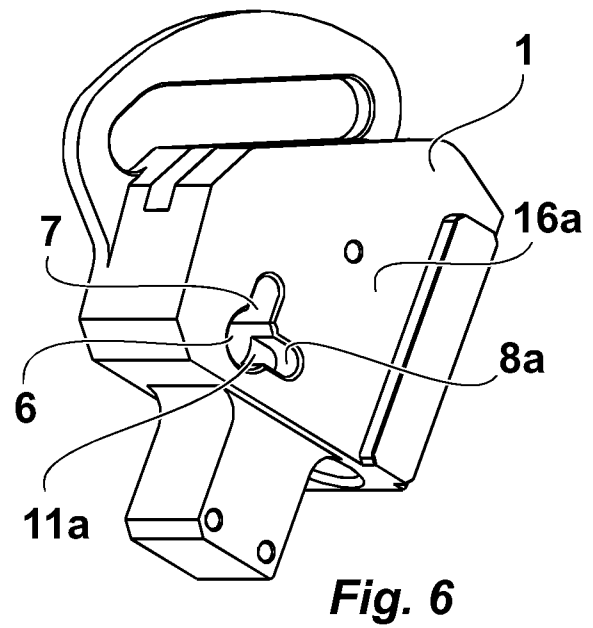
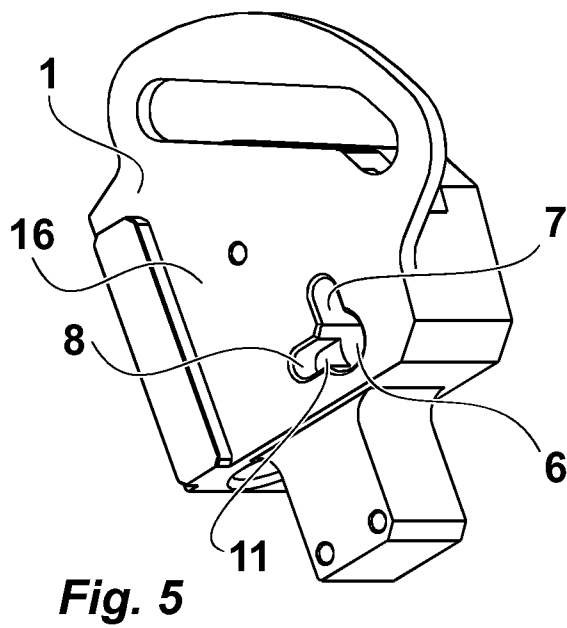
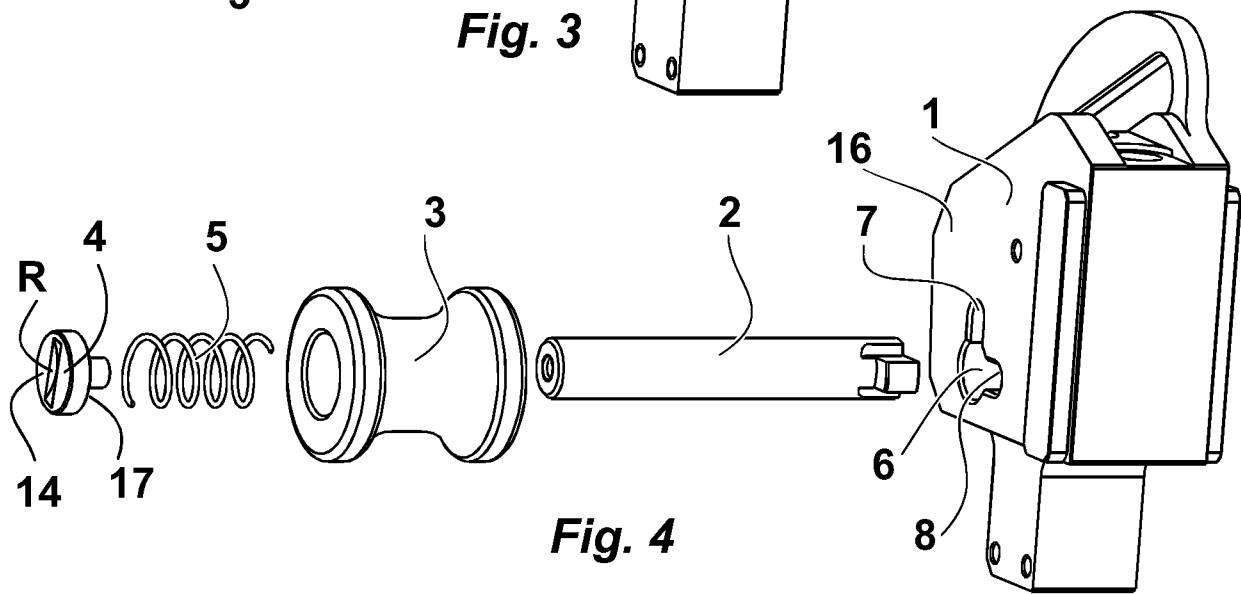
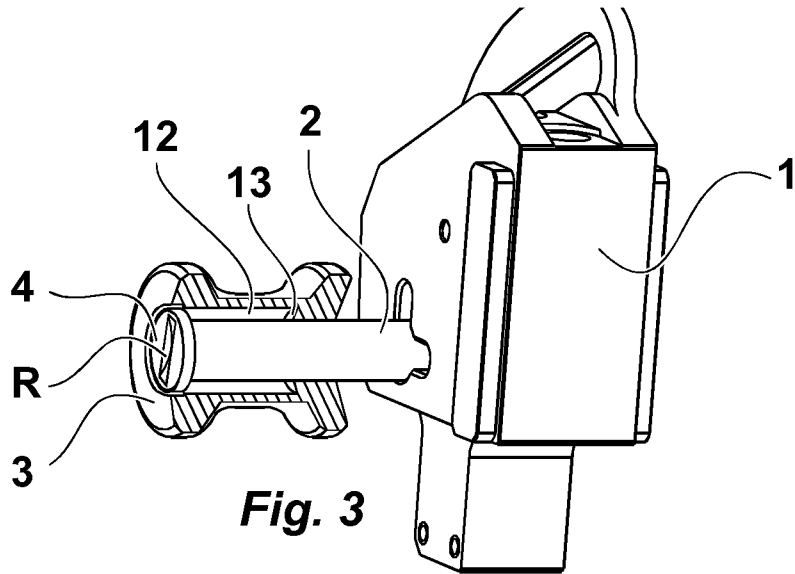
latching or catching of the magazine in working position will be effected as has just been described.

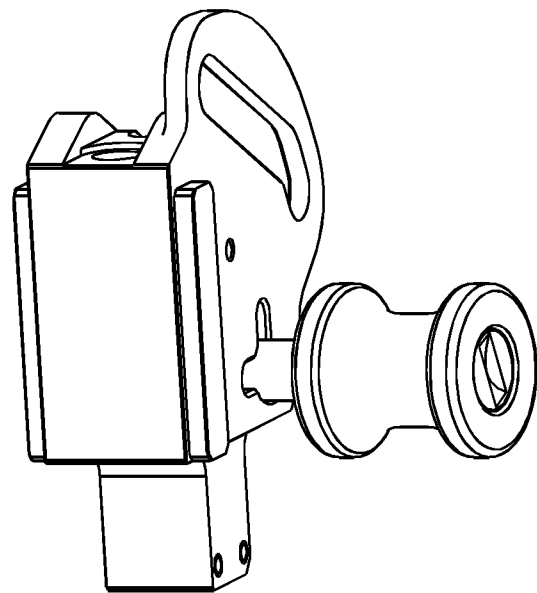
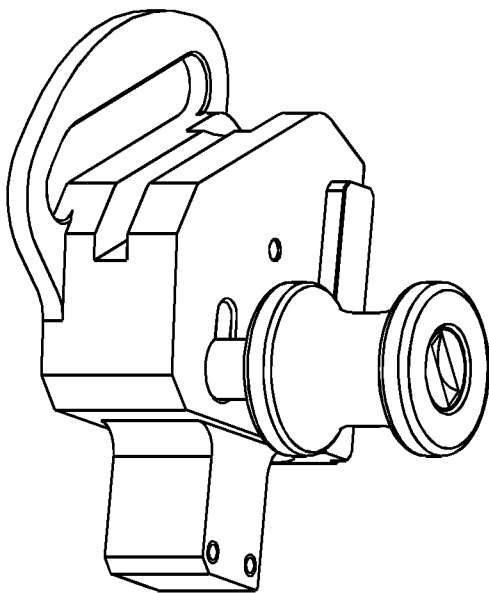
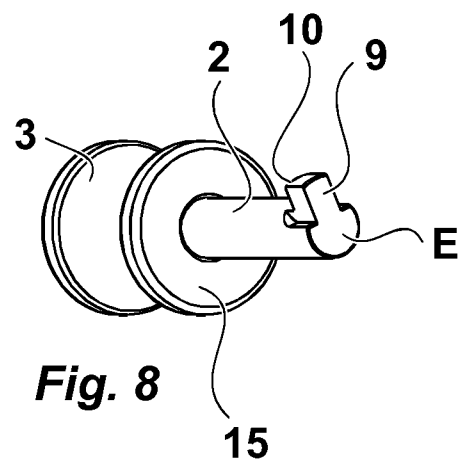
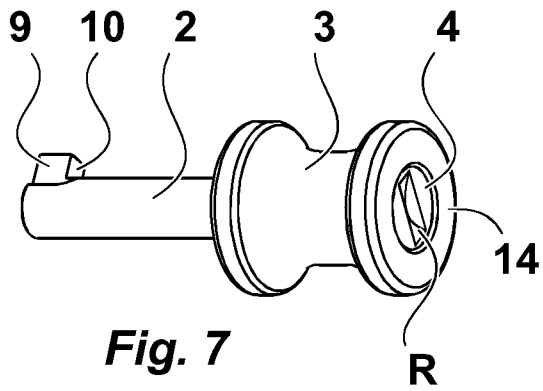
CLAIMS

1. An assembly for cocking a firearm for use in a firearm that employs a mobile mass moving in conjunction with the movement of the bolt of a firearm during its firing cycle, the assembly comprising a removeable cocking lever, wherein the cocking lever comprises on one end a handle and the other end a main pin, and wherein the main pin has at least one tenon or projection that locks into a receiving slot or area of the mobile mass, and the mobile mass comprises an interior hole or tunnel through which the main pin can be inserted from either side of the firearm allowing ambidextrous use, whereby the cocking lever in the locked position can move the mobile mass by the action of the operator's force on the handle.
2. The assembly of claim 1, wherein the cocking lever further comprises an elastic element or spring in the handle end that applies force against the handle when the main pin is inserted into the mobile mass.
3. The assembly of one of claims 1 or 2, wherein the handle of the cocking lever further comprises a manual engaging switch capable of turning the projection or tenon on the end of the main pin.
4. The assembly of claim 3, wherein the manual engaging switch is a screw, a rivet, or comprises a flared flange.
5. The assembly of claim 1, wherein the mobile mass has at least one slot in addition to the receiving slot on each side of the mobile mass.
6. A firearm comprising the assembly of one of claims 1 to 5, wherein the frame of the firearm comprises a groove for the movement of the cocking lever down the frame away from the barrel and a receiving notch or area that is capable of holding the cocking lever in a loaded position when the operator moves the locking lever along the groove from an unloaded position to a loaded position.
7. A firearm frame comprising a magazine well and an assembly for locking and releasing the magazine that can be operated from either side of the frame, the assembly comprising left and right side control buttons operably connected to a push rod within the magazine well, the push rod activating the movement of at least one catch projection in the well to release a magazine when locked in the magazine well, the at least one catch projection positioned to hold the magazine through one or more retention means on the surface of the magazine.

8. The firearm frame of claim 7, wherein upper and lower catch projections hold the magazine simultaneously.
9. The firearm frame of one of claims 7 or 8, wherein a spring is positioned to return the control button to its resting position after the operator depresses the left or right side control button to release the magazine.
10. The firearm frame of one of claims 8 or 9, wherein the magazine well is capable of receiving an extended magazine and the lower catch projection comprises a spring-loaded clasp or hook that locks the extended magazine.
11. The firearm frame of one of claims 8-10, wherein the upper catch projection fits into a slot in the magazine to lock the magazine.
12. The firearm frame of claim 7, wherein the control button comprises a pair of sloped planes that contact an upper catch projection that lock the magazine into the magazine well.
13. An extended magazine for use in the firearm frame as claimed in claim 10, wherein the magazine comprises a receiving area that interacts with the clasp or hook to lock the magazine securely in place.







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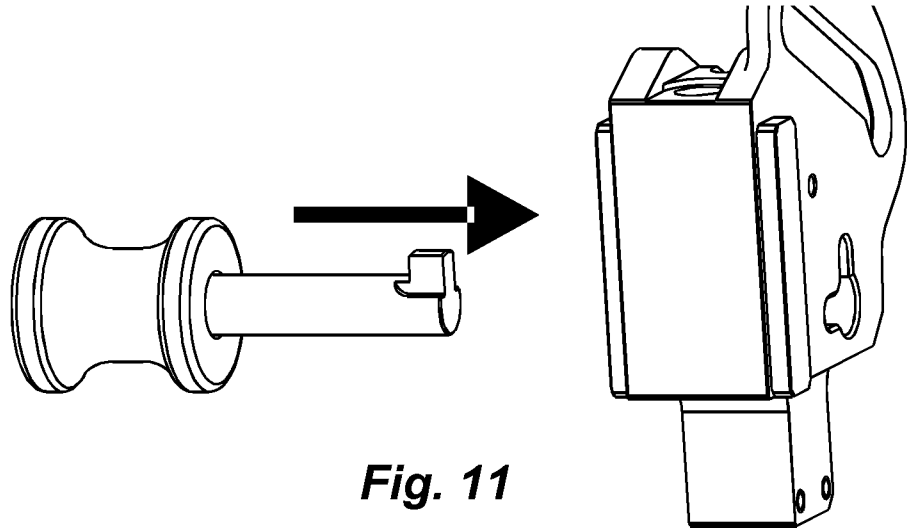


Fig. 11

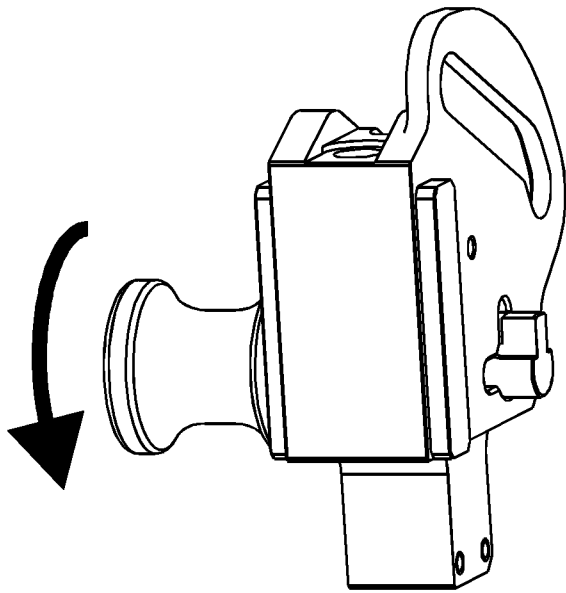


Fig. 12

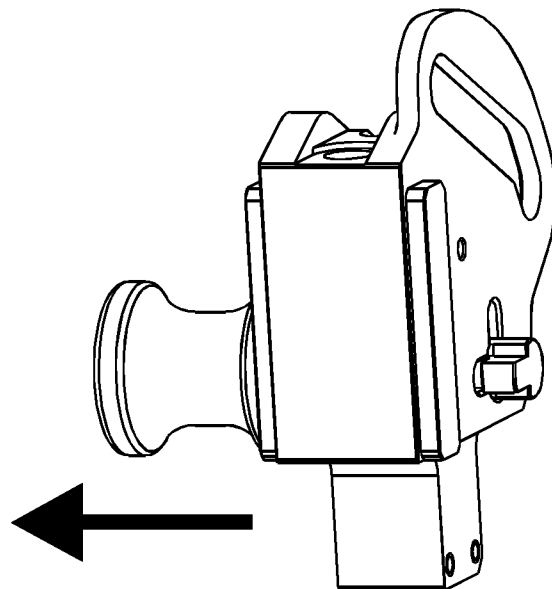


Fig. 13

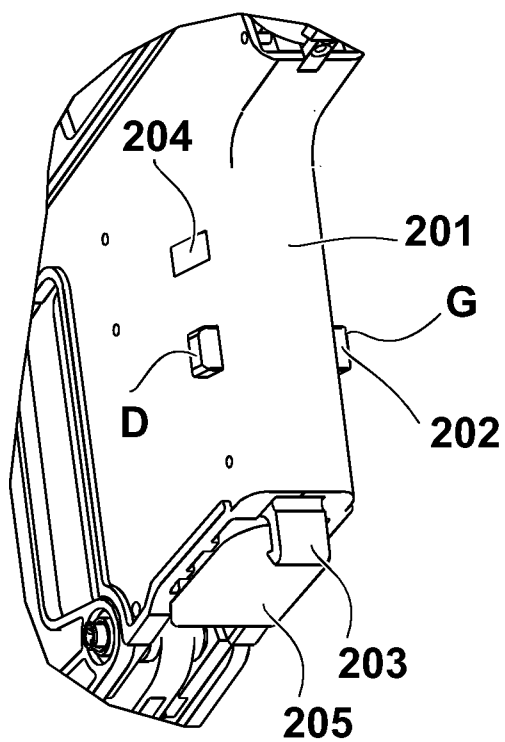
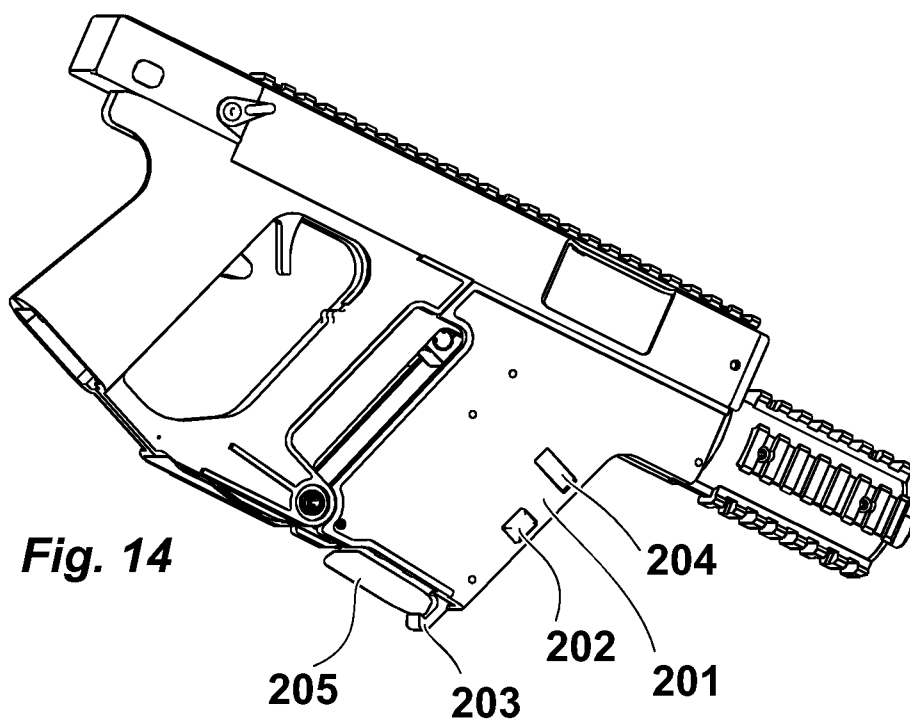


Fig. 15

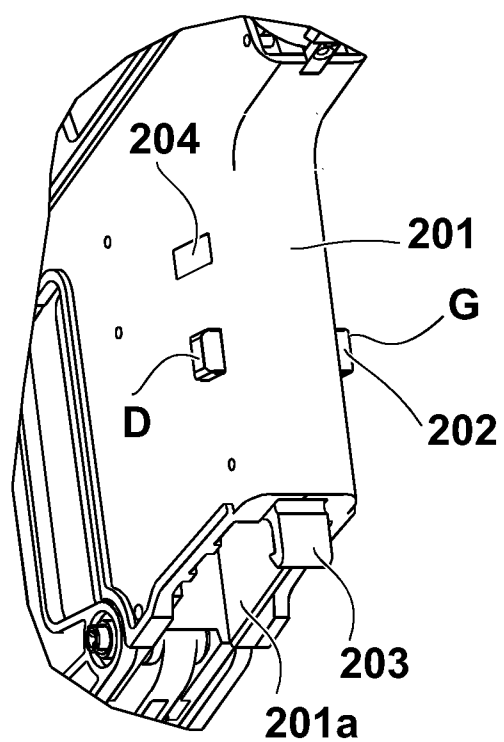
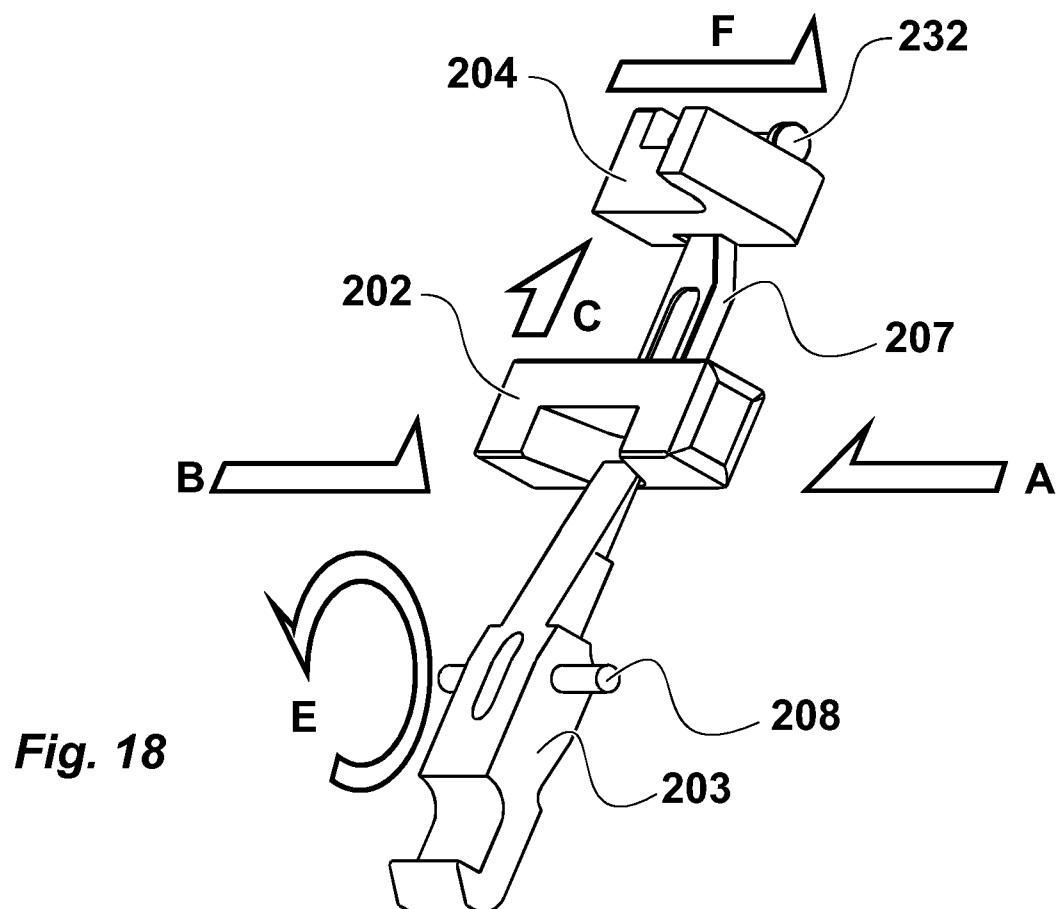
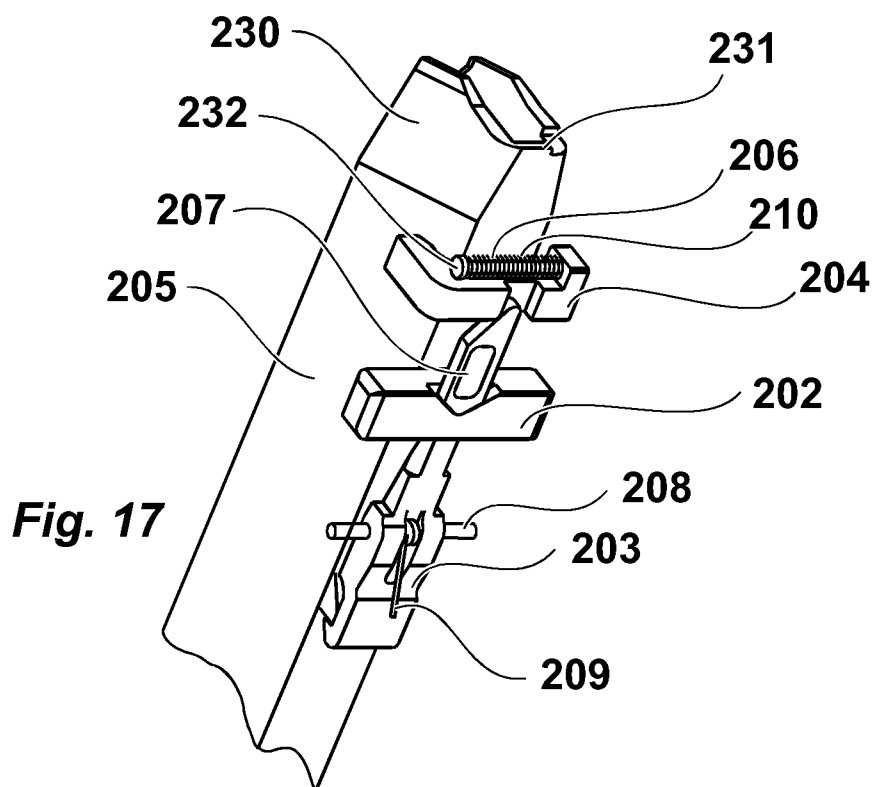
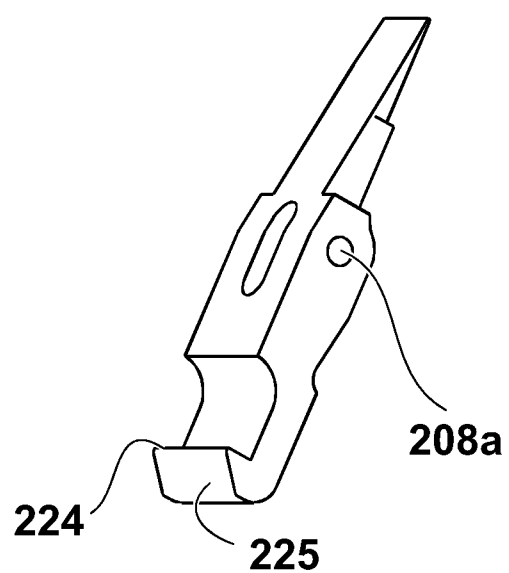
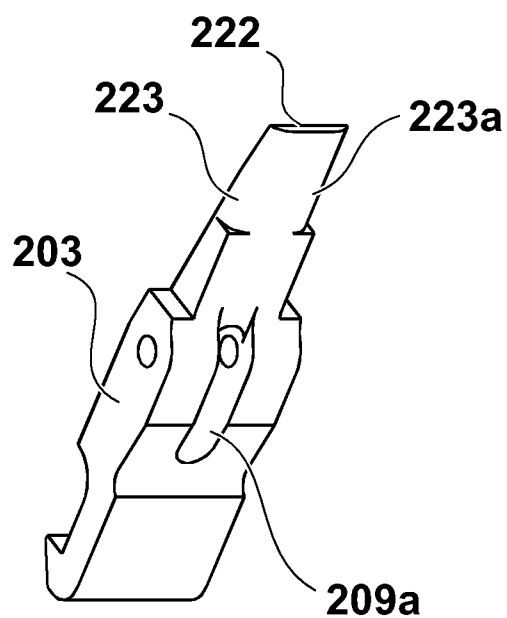
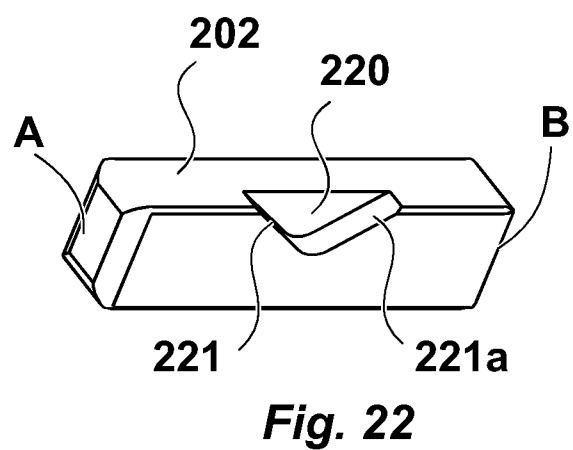
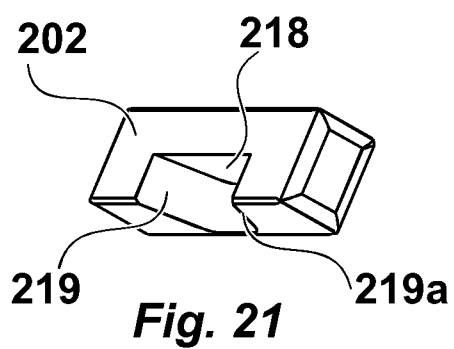
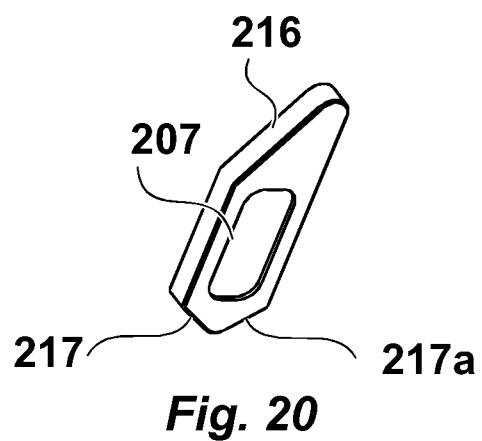
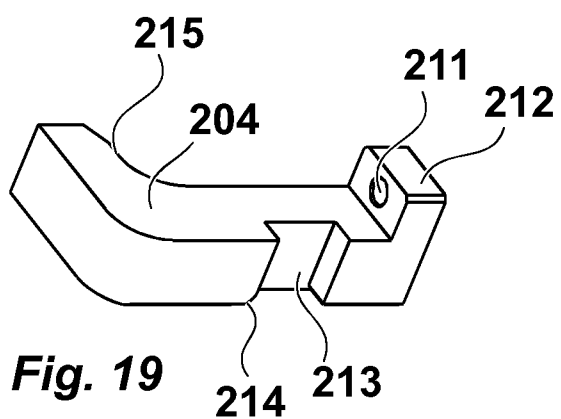


Fig. 16





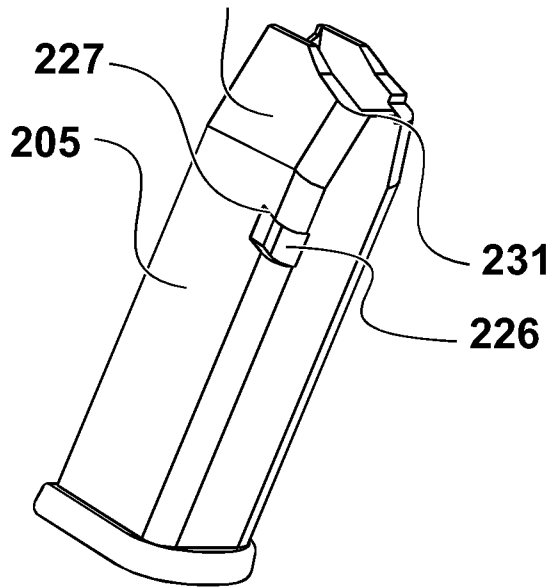


Fig. 25

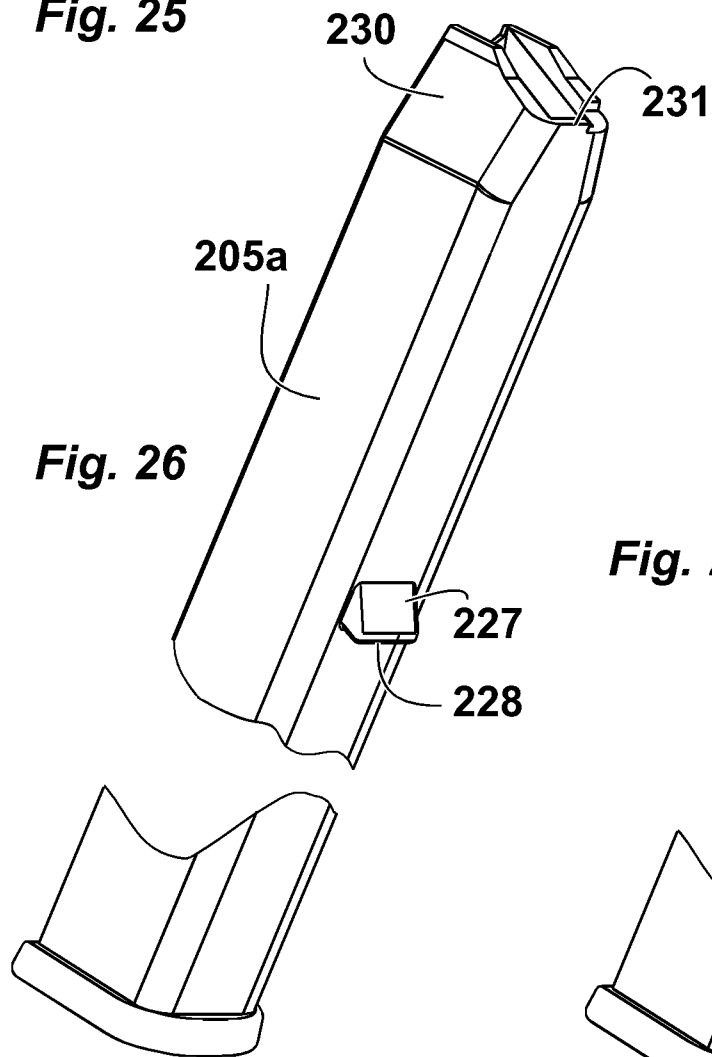


Fig. 26

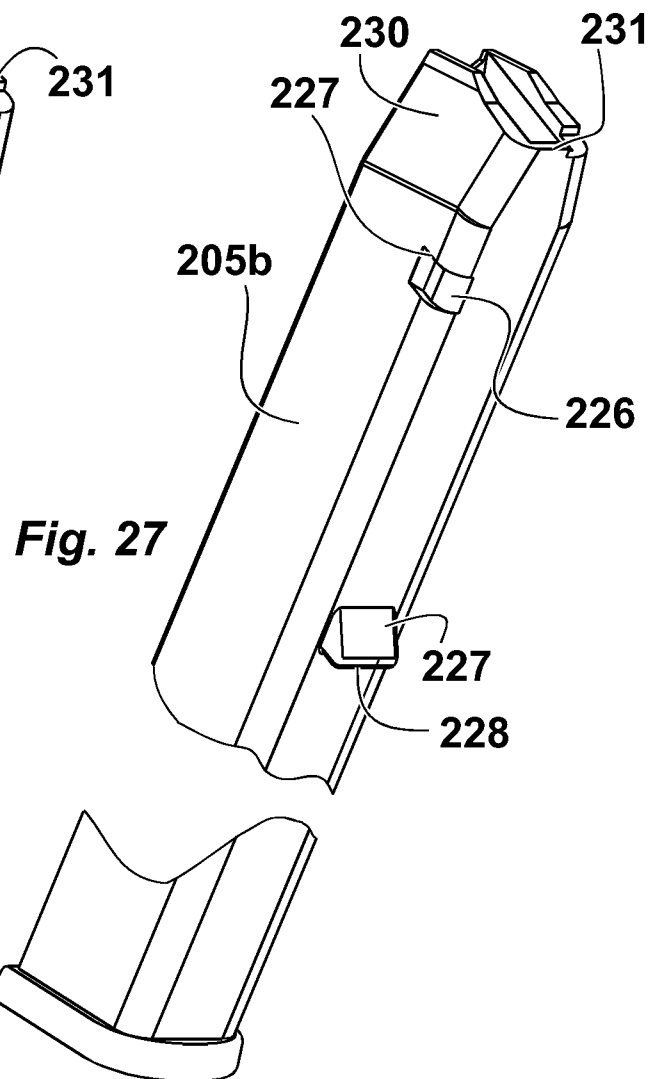
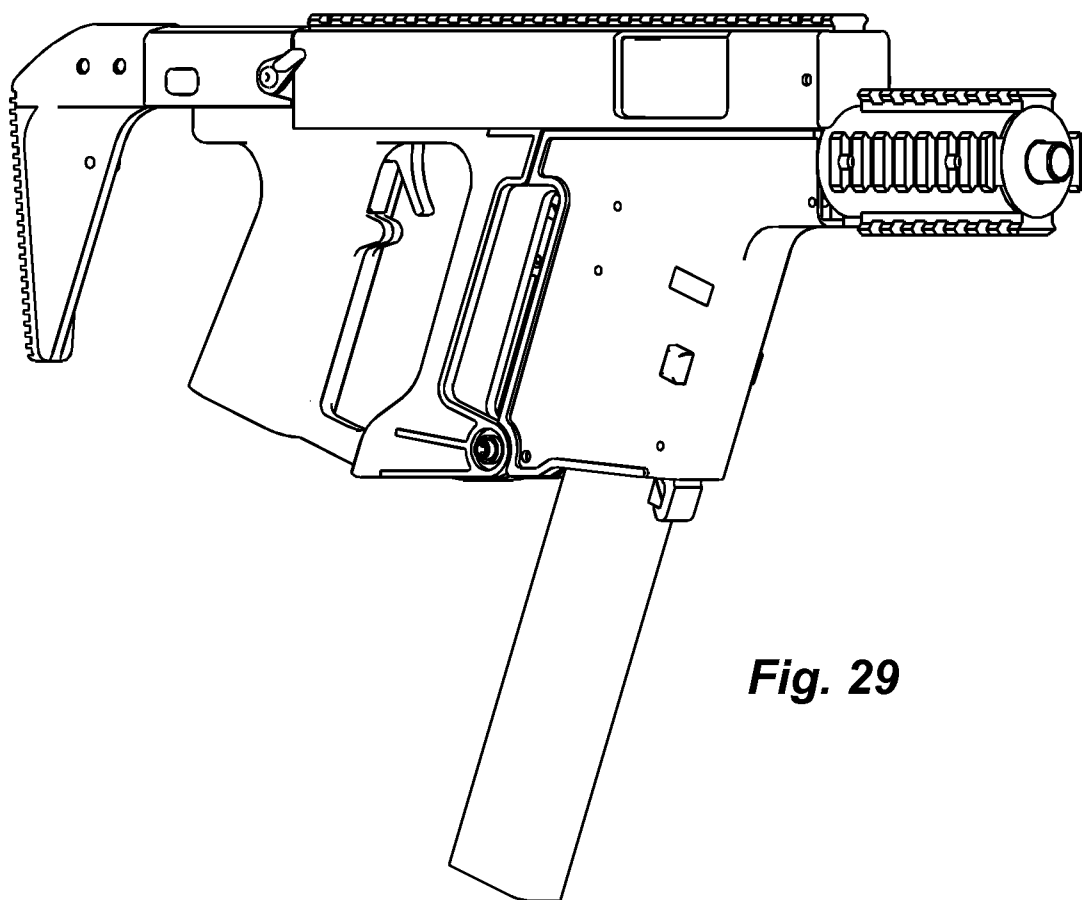
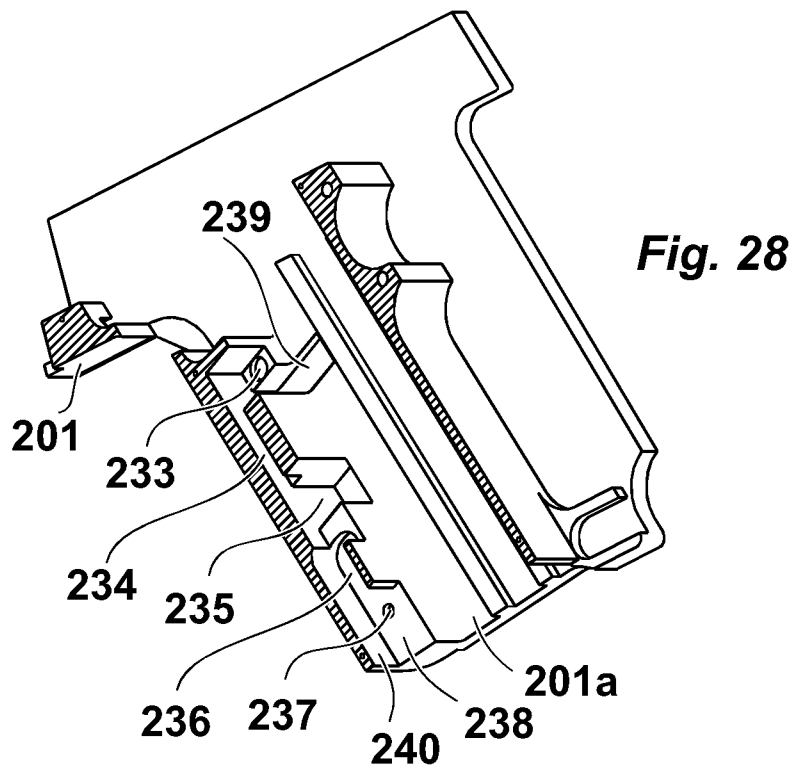


Fig. 27



INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2011/055616

A. CLASSIFICATION OF SUBJECT MATTER
INV. F41A3/72 F41A17/38 F41A35/06
ADD.

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)
F41A

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)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/046642 AI (MURELLO JOHANNES [DE]) 25 April 2002 (2002-04-25)	1-5
Y	paragraphs [0002] , [0009] , [0010] , [0013] , [0014] , [0026] - [0031] , [0041] figures 1-4	6
Y	----- US 2004/025680 AI (JEBSEN JAN HENRIK [CH] ET AL) 12 February 2004 (2004-02-12) cited in the application the whole document	6
A	----- US 5 303 848 A (D ANDRADE BRUCE M [US]) 19 April 1994 (1994-04-19) column 4, lines 14-24 figures 1, 2, 4, 5 ----- -/- .	1-3 , 5



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

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"E" earlier application or patent but published on or after the international filing date

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"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

14 March 2012

Date of mailing of the international search report

12/06/2012

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040,
Fax: (+31-70) 340-3016

Authorized officer

Van Leeuwen, Erik

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2011/055616

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 606 825 A (OLSEN CHARLES A [US]) 4 March 1997 (1997-03-04) col umn 4, lines 12-35 -----	1
A	US 4 467 698 A (PERRINE WALTER E [US]) 28 August 1984 (1984-08-28) figures 1, 2, 6, 10, 11, 16 col umn 3, line 5 - col umn 4, line 13 col umn 4, line 67 - col umn 5, line 60 col umn 6, line 62 - col umn 7, line 6 -----	1

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2011/055616

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos. :

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos. :

1-6

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-6

Attachment of a cocking lever to a mobile mass in a firearm.

2. claims: 7-13

Magazine locking and releasing mechanism, and a magazine for use with such a mechanism.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2011/055616

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2002046642	A1	25-04-2002	AT 230476 T 15-01-2003
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			US 5303848 A 19-04-1994
			WO 9500220 A1 05-01-1995

US 5606825	A	04-03-1997	NONE

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