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DE-C- 273 841
US-A1- 2012 317 856
US-B1- 6 571 501
US-B1- 6 848 208

DESCRIPTION

Description

TECHNICAL FIELD

[0001] The present invention relates to a conversion kit for converting a firearm to fire non-lethal training ammunition safely. In particular, the kit is for converting a pistol.

BACKGROUND ART

[0002] Conversion kits for use with training ammunition or different calibers are known for example from US 6 848 208 B1, US 6 571 501 B1 and US 2012/317856 A1. The known conversion kits include a slide assembly and a barrel assembly. The conversion kit slide assembly replaces a slide assembly of the firearm and the conversion kit barrel assembly replaces the barrel assembly of the firearm.

[0003] The barrel assembly of a conversion kit is designed so that it will interact with the firearm and the conversion kit slide assembly. The barrel assembly generally includes a barrel and a barrel liner.

[0004] One known conversion kit includes safety features which are commonly referred to as 'headspace safety' features. In this regard, the barrel of a firearm is chambered to receive only non-lethal training ammunition. It comprises a cylindrical chamber which is internally necked down in diameter so that when a 'Live' 9 x 19 parabellum cartridge is installed into the chamber, the rear of the cartridge projects past the rear of the barrel. This projection of the cartridge past the rear of the barrel in turn holds the slide of the firearm in a rearward position causing the slide to be positioned 'out of battery', meaning that the firing pin will not be released (in a striker fire weapon) or impacted upon (in a hammer fire weapon), so propellant in the cartridge cannot be detonated.

[0005] In contrast, a non-lethal training cartridge that has been dimensioned to fit the chamber will not hold the slide in a rearward position and will allow the slide to be positioned 'in battery' so movement of the firing pin can cause propellant of the training cartridge in the chamber to be detonated, thereby firing the cartridge.

[0006] When training with training kit comprising training firearms and ammunition, if a 'live' round accidentally enters the chamber of the firearm then it will not be possible for the

propellant in the cartridge to be detonated and so lives are not endangered and injuries are not caused to those using the training kit.

[0007] However, the known conversion kits have a number of disadvantages. In this regard, the barrel of known kits is designed such that a live round will project from the rear of the barrel, but there are limitations on how far the design can influence the 'live' round rearward in the training barrel before the conversion kit would become unusable due to operational malfunctions.

[0008] In addition, in some instances, a live round can be forced into the chamber of a training barrel and the slide can still be positioned 'in battery', so the firing pin can release and cause propellant in the cartridge to be detonated.

[0009] Unfortunately, different firearms vary in their dimensions so there is no generic dimension common to all firearms to determine how far a 'live' round must project from the rear of the barrel, so not all firearms can be converted safely with the known conversion kits to fire only training ammunition.

[0010] Therefore, the known features which provide 'headspace safety' are limited in their application and they are not suitable for converting all firearm types and models for safe training.

[0011] In light of the problems discussed above, various proposals have been made, but there remains a need for an improved conversion kit which addresses one or more of the problems presented by prior art arrangements.

[0012] The present invention aims to provide a novel conversion kit which allows safe and predictable performance when firing non-lethal ammunition.

[0013] Remarkably, the invention provides a new conversion kit wherein a firearm can be converted so that it is capable of firing non-lethal training ammunition, but not live ammunition.

[0014] In this regard, advantageously, the present invention allows firearms that were previously unsuitable for converting to training purposes, to be converted for training purposes thereby allowing more people/agencies/militaries to train safely with training ammunition.

[0015] In addition, advantageously, the present invention can be tailored to different firearms and is not restricted to specific weapons.

SUMMARY OF INVENTION

[0016] In accordance with a first aspect of the present invention there is provided a conversion kit for converting a firearm for firing live rounds to fire only non-lethal training ammunition as

defined in independent claim 1.

[0017] Preferred embodiments of said conversion kit are defined in dependent claims 2-8.

[0018] In a second aspect, the invention provides a firearm comprising a conversion kit of the invention as defined in claim 9.

[0019] Preferably, the firearm is a pistol,

BRIEF DESCRIPTION OF DRAWINGS

[0020] For the purposes of exemplification, the invention will now be further described with reference to the following Figures in which;

Figure 1 shows a live round positioned in the chamber of a known training barrel, the figure shows the slide being held rearwards. The distance a slide has to be held rearwards is not consistent through different weapon types and models so it is possible for the firing pin to be activated and the firing pin can impact upon the round in the chamber and detonate the propellant in the round.

Figure 2 shows the barrel assembly with a 'safety activation feature' and the slide assembly with a 'Spring loaded stop'. The spring loaded stop has not been activated by the safety activation feature because the live round is holding the slide rearwards a sufficient distance, so the sprung loaded stop is in the 'safe' position. The sprung loaded stop will prevent the firing pin from impacting the round and so preventing a live round from discharging.

Figure 3 shows a training round in the barrel assembly with the safety activation feature installed. The slide has the sprung loaded stop installed. The safety activation feature has interacted with the sprung loaded stop and moved it to the fire position allowing the firing pin to impact upon the round and so detonating it.

DESCRIPTION OF ILLUSTRATED EMBODIMENT

[0021] It will be appreciated that aspects, embodiments and preferred features of the invention have been described herein in a way that allows the specification to be written in a clear and concise way. However, unless circumstances clearly dictate otherwise, aspects, embodiments and preferred features can be variously combined or separated in accordance with the invention. In a preferred embodiment, a device in accordance with the invention comprises all features of the invention.

[0022] Within the context of this specification, the word "comprises" means "includes, among

other things" and should not be construed to mean "consists of only".

[0023] Within the context of this specification, the word "substantially" means preferably at least 90%, more preferably 95%, even more preferably 98%, most preferably 99%.

[0024] Within the context of this specification, a barrel of a firearm has a rear end and a front end. The front end of the barrel is the end of the barrel from which a projectile exits when the firearm is fired and the rear end is located at the opposite end of the barrel. In addition, in use, a barrel has a left side and a right side. The left side is the side to the left of a user when they point the front of the barrel away from them. The right side of the barrel is the opposite side to the left side.

[0025] With reference to the Figures, Figure 1 shows a known conversion kit (21). A live cartridge (22) is positioned in the chamber (25) of a known training barrel (24). The slide (28) of the slide assembly (27) is held rearwards because the cartridge (22) extends from the rear (26) of the barrel (24).

[0026] Figures 2 and 3 illustrate an embodiment of a conversion kit (1) of the invention. The conversion kit comprises a barrel assembly (3) and a slide assembly (7). The barrel assembly (3) includes a barrel (4) having a projection (9) and the slide assembly (7) includes a gate (8) having a member (11) which interacts with the projection (9).

[0027] The barrel (4) has a chamber (5) which is chambered for receiving training ammunition (2) and it interfaces with the slide assembly (7) which replaces the host weapon slide assembly.

[0028] In use, the projection (9) extends from the rear (6) of the barrel (4) and from the left side (14) of the barrel (4).

[0029] The gate (10) comprises a member (11) which has a first end (15) that interacts with the projection (9) and a second end (16) that interacts with a spring (17) biasing means. In this regard, the member (11) is spring loaded so that it is biased to a first position (12) by the spring (17).

[0030] In use, the member (11) is movable in a plane substantially horizontal and substantially perpendicular to the longitudinal axis of the chamber (5) between the first 'safe' position (12) wherein a firing pin of the firearm is blocked from impacting on a cartridge (22, 2) in the chamber (5) and a second 'fire' position (13) wherein the firing pin is not blocked from impacting upon a cartridge (22, 2) in the chamber (5).

[0031] The spring (17) has a longitudinal axis, which is substantially parallel to a longitudinal axis of the member (11). In addition, the longitudinal axes of the spring (17) and the member (11) are substantially perpendicular to the longitudinal axis of the projection (9).

[0032] Interaction between the slide assembly (7) and the barrel assembly (3) has been designed so that, in use, the projection (9) acts upon the member (11) of the gate (10) thereby moving it from the first position (12) to the second position (13).

[0033] The above described embodiments have been given by way of example only, and the skilled reader will naturally appreciate that many variations could be made thereto without departing from the scope of the invention.

REFERENCES CITED IN THE DESCRIPTION

Cited references

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Patent documents cited in the description

- [US6848208B1 \[0002\]](#)
- [US6571501B1 \[0002\]](#)
- [US2012317856A1 \[0002\]](#)

P a t e n t k r a v

- 5 1. Konverteringssæt (1) til konvertering af et skydevåben, der affyrer skarp ammunition, til kun at affyre ikke-dødelig øvelsesammunition, og omfatter en løbsenhed (3) og en slædeenhed (7), der erstatter værtsvåbnets slædeenhed, hvor løbsenheden (3) omfatter et løb (4), som har grænseflader med slædeenheden (7), og et fremspring (9), hvor løbet (4) har et kammer (5), der kun er beregnet til at modtage træningsammunition, mens skarp ammunition vil stikke ud fra bagsiden af løbet (4) og holde slædeenheden (7) bagud i en afstand fra løbet (4), og slædeenheden (7) omfatter en låge (8), der interagerer med fremspringet (9), hvor lågen (8) omfatter et element (11), der har en første ende (15) og en anden ende (16), hvor den første ende (15) interagerer på direkte måde med fremspringet (9), og den anden ende (16) interagerer med et forspændingsmiddel (17), hvor elementet (11) er bevægeligt mellem en første "sikker" position (12), hvor en slagstift af skydevåbnet er blokeret fra at ramme en patron (2) i kammeret (5), og elementet (11) er bevægeligt til en anden "affyringsposition" (13), hvor slagstiften ikke er blokeret fra at ramme en patron (2) i kammeret (5).
- 10
- 15
- 20 2. Konverteringssæt (1) ifølge krav 1, hvor fremspringet (9) strækker sig fra bagsiden (6) af løbet (4).
- 25 3. Konverteringssæt (1) ifølge et hvilket som helst af de foregående krav, hvor fremspringet (9) strækker sig fra venstre side (14) af løbet (4).
- 30 4. Konverteringssæt (1) ifølge et hvilket som helst af de foregående krav, hvor porten (8) omfatter et element (11), som er i det væsentlige cylindrisk.
5. Konverteringssæt (1) ifølge et hvilket som helst af de foregående krav, hvor elementet (11) under brug er bevægeligt i et plan, der i det væsentlige er

vandret og i det væsentlige vinkelret på længdeaksen af kammeret (5).

6. Konverteringssæt (1) ifølge et hvilket som helst af de foregående krav, hvor forspændingsmidlet (17) omfatter en fjeder (17).

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7. Konverteringssæt (1) ifølge krav 6, hvor fjederen (17) har en længdeakse, som er i det væsentlige parallel med en længdeakse af elementet (11).

8. Konverteringssæt (1) ifølge krav 7, hvor længdeakserne af fjederen (17) og elementet (11) er i det væsentlige vinkelrette på længdeaksen af fremspringet (9).

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9. Skydevåben, der omfatter et konverteringssæt (1) ifølge et hvilket som helst af kravene 1 til 8.

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10. Skydevåben ifølge krav 9, hvor skydevåbnet er en pistol.

DRAWINGS

Drawing

Figure 1

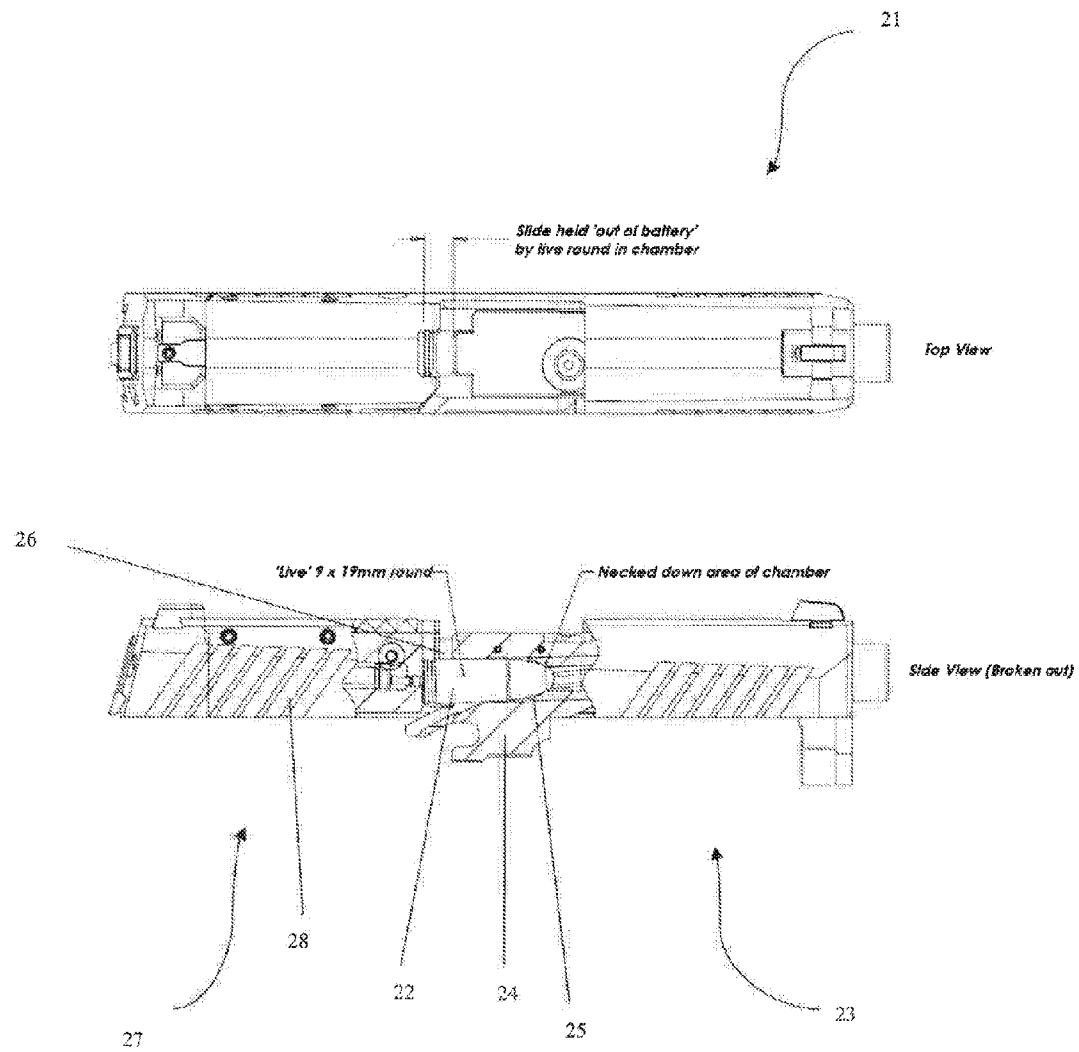


Figure 2

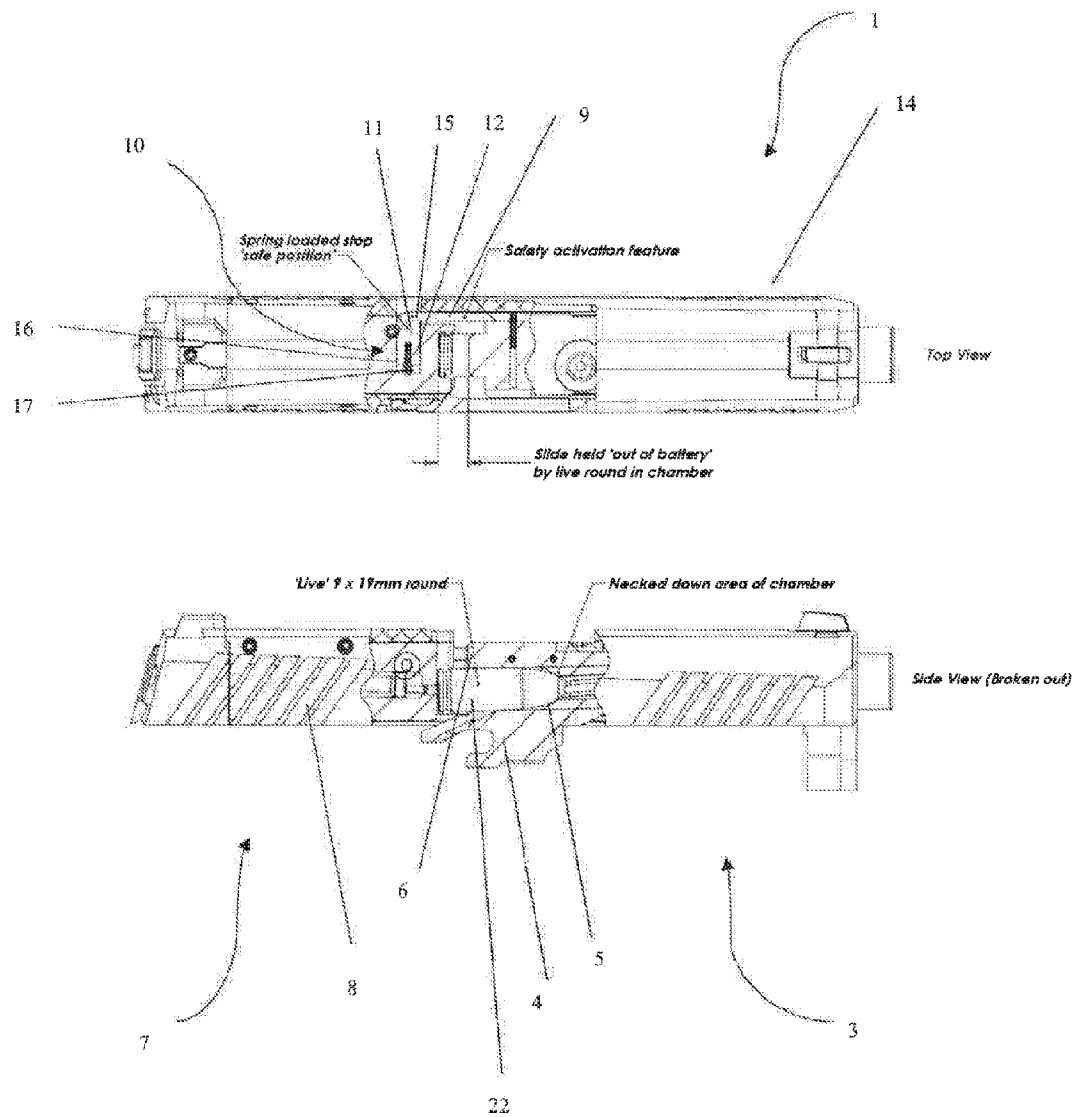


Figure 3

