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54 **Low-weight, direct-percussion grenade-launcher.**

57 Low-weight, direct percussion grenade launcher (10) constituted by a launching barrel (11) fastened to a breech (12) which is provided with a long stroke percussion pin (16), the barrel is substantially of the same length of a cartridge in order to be used as the expansion chamber for the launching gases.

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LOW-WEIGHT, DIRECT-PERCUSSION GRENADE-LAUNCHER

The object of the present invention is a low-weight, direct-percussion grenade-launcher.

Within the range of the grenade-launchers known from the prior art, it is customary that the insertion of the cartridge takes place from the breech, by means of mechanisms which are at all similar to those used for guns.

It is furthermore known that the grenade-launchers, considered light weapons, must be transported by the detachments of infantry, and should therefore meet requirements of low-weight, reliability and safety.

The purpose of the present invention is to provide a grenade-launcher having a low weight, the mechanisms of which are simple, and reliable, furthermore rendering the grenade-launcher easy to use, and which furthermore supplies ranges of the order of at least 900 metres.

According to this purpose, a low-weight, direct-percussion grenade-launcher has been provided, which is constituted by a launching barrel fastened to a breech, with said breech being provided with a click mechanism for releasing a percussion pin, characterized in that said percussion pin is a long-stroke percussion pin, guided to slide inside a seat communicating with said barrel and provided in a bottom portion of said barrel, in order to hit a bottom of a cartridge inserted inside said barrel, with the stroke of said percussion pin being long enough in order to eject said cartridge from said barrel after the explosion, with said barrel being of a length at least equal to the length of a cartridge with the relevant projectile, the inner volume of said barrel being used as the expansion chamber for the launching gases.

Still according to the present invention, the stroke of said percussion pin is at least equal to the length of the only cartridge case of said cartridge.

Furthermore, the length of the barrel of the grenade-launcher according to the present invention is equal to the length of a cartridge including the projectile.

In order to better understand the characteristics and further advantages thereof, the present invention is now disclosed for illustrative and non-limitative purposes by referring to the hereto attached drawings, wherein a sectional view is shown of a grenade-launcher according to the present invention.

In particular, in the Figure, by the reference numeral 10 a grenade-launcher according to the present invention is generally indicated, which is constituted by a launching barrel 11 and by a breech 12 fastened to the bottom portion of the barrel, and provided with a through-seat 13.

Inside the breech 12, a click mechanism is provided, which is constituted by a lever 14 connected with an element 15 sliding inside the interior of the breech, whilst the lever 14 is free of moving inside the through-seat 13. The energy for the motion of the element 15 is supplied by a spring provided under the element 15, and in engagement with it.

From the upper surface of the element 15, a percussion pin 16 extends, a part of which is housed inside the breech 12, and the remainder thereof is housed inside a seat 17 provided in the bottom portion of the launching barrel 11.

The seat 17 opens in a burst chamber 18 provided inside the interior of the barrel, and having such a size that it can contain a cartridge 19 constituted by a cartridge case 20 and a projectile 21. Externally to the barrel 11, a portion of a grenade 22 is schematically shown.

Once that the click mechanism is unblocked by disengaging the lever 14 from a stop tooth (not shown in the figure), the spring will push upwards the element 15 and the percussion pin 16. This latter, run across the seat 17, will come to hit the bottom of the cartridge 19, in order to cause it to explode.

After the explosion, the percussion pin 16, continuing running upwards, will eject the cartridge case 20 of the cartridge 19, thanks to its stroke, at least equal to the length of the cartridge case 20.

Summing-up, the grenade-launcher according to the present invention combines an extreme structural simpleness, to full advantage for the lightness of the weapon, with the easiness of charging and versatility of use, characteristics, these, which result in the possibility of using different types of cartridges with or without projectile, and in having an optimum fire rapidity.

Claims

1. Low-weight, direct-percussion grenade-launcher constituted by a launching barrel fastened to a breech, with said breech being provided with a click mechanism for releasing a percussion pin, characterized in that said percussion pin is a long-stroke percussion pin, guided to slide inside a seat communicating with said barrel and provided in a bottom portion thereof, in order to hit a bottom of a cartridge inserted inside said barrel, with the stroke of said percussion pin being long enough in order to eject said cartridge from said barrel after the explosion, with said barrel being of a length at least equal to the length of a cartridge with the relevant

projectile, the inner volume of said barrel being used as the expansion chamber for the launching gases.

2. Grenade-launcher according to claim 1, characterized in that the stroke of said percussion pin is at least equal to the length of the only cartridge case of said cartridge. 5

3. Grenade-launcher according to one or more of the preceding claims, substantially as herein disclosed and illustrated. 10

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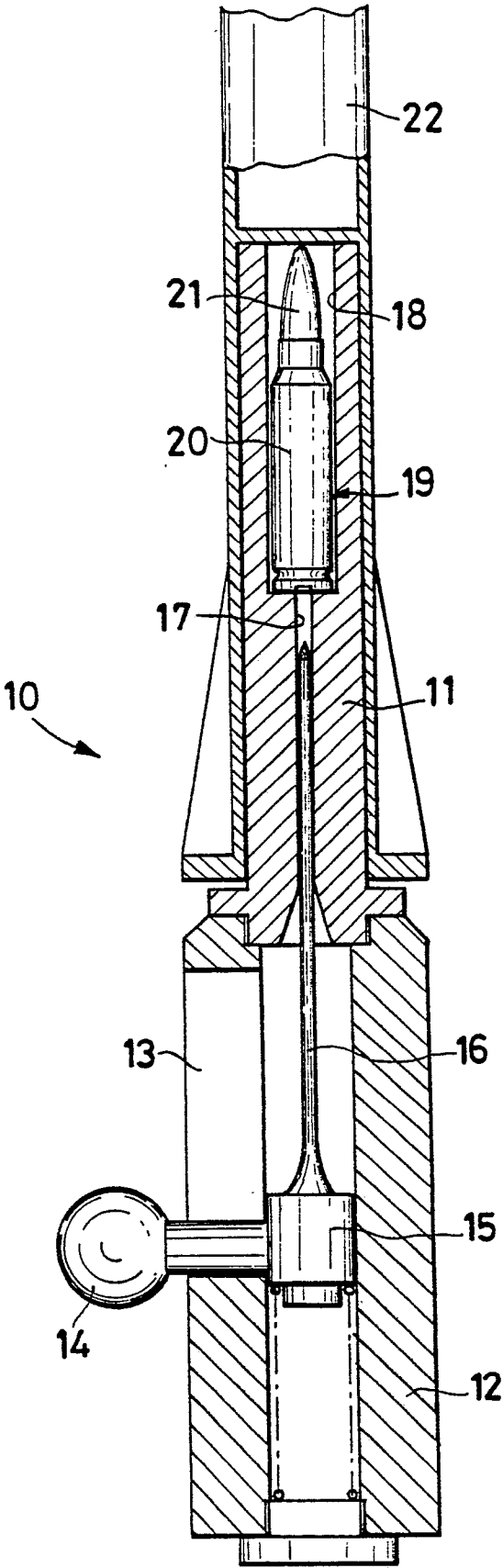
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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
X	CH-A- 464 010 (BATOU) * Column 2, last paragraph; column 3, lines 1-18; figures 1,2 *	1,3	F 41 C 27/06 F 41 C 15/00
A	---	2	
A	US-A-3 956 843 (LITMAN) * Column 4, lines 58-67; figures 2-4 *	1	
A	---	1	
A	CH-A- 499 081 (DAUBAN) * Column 2, lines 61-62; column 4, lines 1-7; figures 4-8 *	1	
A	---	1	
A	CH-A- 450 228 (GRIESSEN) * Column 8, lines 53-67; column 9, paragraph 1; figures *	1	

The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int. Cl.4)
			F 41 C F 41 D
Place of search THE HAGUE		Date of completion of the search 10-05-1989	Examiner RODOLAUSSE P.E.C.C.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	