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54 Means for a trigger mechanism.

57 Means for a trigger mechanism for a weapon, in particular a firearm, said mechanism comprising a trigger element (2) which is capable of moving out of engagement with a trigger bar (3) or a striker element (4). Engagement takes the form of a roller engagement (10, 11) such that the trigger element (2) and the trigger bar (3) or the striker element (4) can roll out of engagement with each other.

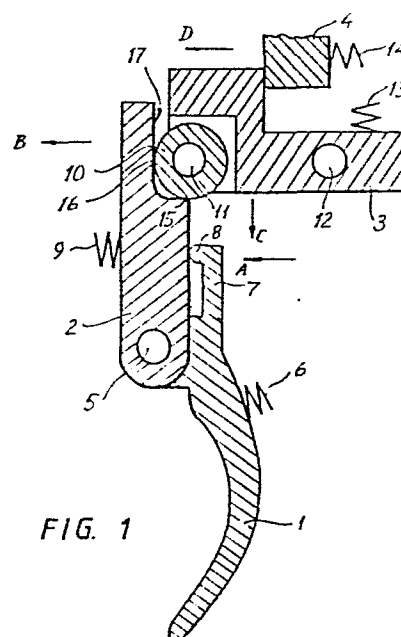


FIG. 1

Means for a trigger mechanism

The present invention relates to a means for a trigger mechanism for weapons, in particular firearms with a  
5 striker mechanism, which is tripped mechanically. Mechanisms of this kind consist of a trigger and a spring-actuated striker element or hammer and at least one interjacent element for the functional connection of the  
10 trigger with the striker element or the hammer, wherein the trigger, the striker element or the hammer and the interjacent elements together form a series connection pre-loaded under spring bias of organs capable of being actuated in sequence, said series connection being so  
15 arranged as to be kept pre-loaded under spring bias by means of a catch or hooking organ capable of suddenly releasing the pre-loaded series connection so as to trip the striker element, and wherein the catch organ constitutes a functional connection between two consecutive organs from amongst the aforementioned organs in the series  
20 connection.

One of the disadvantages of the conventional mechanism is that the common engagement surfaces which the trigger forms with the trigger bar (or hammer) must be machined  
25 to extremely high standards of fineness and must be absolutely perpendicular to each other (requiring individual fitting).

When the trigger slides out of engagement with the  
30 trigger bar, the surface pressure will be increased in proportion to the decreasing engagement surface in such a way as to accentuate any irregularity, resulting in "rough" pressure, which is particularly inconvenient in competition weapons. The result of this unsatisfactory  
35 surface pressure/friction is in most cases for progressive wear to take place to such an extent that the press-

ure feels increasingly "rough" and no longer provides the same resistance in the trigger. Pieces may even break away from the engagement surfaces in the worst cases, often resulting in shots being fired accidentally.

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The object of the present invention is, therefore, to propose a means of the kind indicated by way of introduction which will provide smoother pressure and reduced frictional resistance in the trigger. This purpose is achieved by having provided the means in accordance with the invention with the characteristics indicated in Claim 1.

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Further developments of the invention are apparent from the sub Claims.

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The invention is described in greater detail below with reference to the accompanying drawing, which shows two different embodiments of the invention.

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Figure 1 shows in schematic form a cross section of the means in accordance with a preferred embodiment of the invention. Figure 2 shows a view from the front of a trigger bar in the means in accordance with the invention. Figure 3 shows a longitudinal section on an enlarged scale of a roller in the means in accordance with the invention. Figure 4 shows a variant of the embodiment illustrated in Figure 1.

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Figure 1 shows in schematic form a part of a mechanism for a hand firearm (not shown), for example a rifle. The mechanism generally includes a series connection preloaded under spring bias consisting of a trigger 1, a trigger link 2, a trigger bar 3 and a striker mechanism shown here only in part in the form of a striker element 4. The trigger link 2 and the trigger bar 3 in this case

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constitute a first and a second element which can be caused to slide out of engagement with each other by actuation of the trigger 1.

5 The trigger 1, which is pivotally mounted about a stationary shaft 5, is maintained in the inactive position shown in Figure 1 by means of a spring 6. The trigger 1 exhibits an arm 7 which, together with a heel 8, is intended on firing to actuate the trigger link 2.

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The trigger link 2, which is also pivotally mounted about the shaft 5, is retained by means of a spring 9 under pressure against a catch or hooking organ in the form of a roller 10, which is pivotally mounted about a shaft 11 in the trigger bar 3.

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The trigger bar 3, which is mounted about a stationary shaft 12, is held by means of a spring 13 under tension against the striker element 4, which in turn presses against the trigger bar 3 with a spring 14, the spring bias of which is considerably greater than that of the spring 13.

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The roller 10 is in contact via its outer surface 10a with two bearing surfaces 15 and 16 in an angle shelf 17 formed in the trigger link 2.

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The roller 10 exhibits an internal, curved contact surface 10b with the shaft 11; see Figure 3. This enables the roller 10 to adjust itself to any angle and to make contact at all times via its outer surface 10a with uniform pressure over its points of contact with the bearing surfaces in the angle shelf 17, even if the latter is not parallel with the bearing shaft of the roller.

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The function of the means is as follows.

On firing, the trigger 1 will force the heel 8 in the direction of the arrow A towards the trigger link 2, which will be caused to rotate against the effect of the spring 9 out of engagement with the engagement roller 10 of the trigger bar 3, when the trigger link 2 will move in the direction of the arrow B. In this case the roller 10 will rotate about its shaft 11, and will roll over the bearing surface 15 in the trigger link 2. Since the spring bias of the spring 14 is considerably greater than that of the spring 13, the trigger bar 3 will rotate quickly in the direction of the arrow C and will cause a sudden release of the striker element 4 in the direction of the arrow D.

Extremely smooth pressure is achieved via the means described above, thanks to the fact that the roller 10 rolls out of engagement with the trigger link 2 with constant surface pressure and with greatly reduced friction. The one sliding contact surface of the roller 10 of course faces the shaft 11 of the roller, which can easily be given a durable, hard, round and smooth surface.

A further advantage of the invention is that individual fitting is no longer necessary, since all the component parts of the mechanism can be installed with or replaced by any others.

The rolling engagement also means that no noticeable wear will arise in the respective parts.

A variant of the embodiment in accordance with Figure 1 is shown in Figure 4. The means in accordance with Figure 4 harmonizes with that shown in Figure 1, with the exception that the trigger link 2 is hooked directly by a striker element or hammer 4', i.e. without any interja-cent connection in the form of a trigger bar. The striker

element 4' is mounted about a shaft 18, and is pivotally mounted in the direction of the arrow D', similar to the movement D of the striker element 4 in Figure 1.

5 The roller 10 is mounted in the striker element 4' in an entirely similar fashion to that in which the roller 10 is mounted in the trigger bar 4 in accordance with Figures 1-3.

10 Although the roller in the two embodiments shown is so arranged as to interact with a trigger link 2, it is obvious within the context of the invention that it is possible for the engagement to be effected instead directly with the trigger 1, if the latter is given a form  
15 suitable for the purpose.

In the embodiments shown the roller is mounted in the trigger bar of the striker element, but can, of course, as an alternative, be mounted in the trigger link (or in  
20 the trigger).

Nor is the invention restricted to firearms, but is also applicable, for example, to a crossbow.

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Claims

1. Means for a trigger mechanism for weapons, comprising  
a trigger (1) and a spring-actuated striker element or  
5 hammer (4; 4') with at least one interjacent element (2,  
3) for the functional connection of the trigger with the  
striker element or the hammer, wherein the trigger, the  
striker element or the hammer and the interjacent ele-  
ments together form a series connection pre-loaded under  
10 spring bias of organs capable of being actuated in  
sequence, said series connection being so arranged as to  
be kept pre-loaded under spring bias by means of a catch  
organ (11) capable of suddenly releasing the pre-loaded  
series connection so as to trip the striker element, and  
15 wherein the catch organ constitutes a functional connec-  
tion between two consecutive organs from amongst the  
aforementioned organs (2, 3; 2, 4) in the series connec-  
tion, c h a r a c t e r i s e d in that the catch  
organ (11) consists of a roller which is so arranged as  
20 to provide roller engagement between said two consecutive  
organs (2, 3; 2, 4').

2. Means as claimed in Claim 1,  
c h a r a c t e r i s e d in that the roller (11) is  
25 supported in the striker element (4') or in one of said  
interjacent elements (3).

3. Means as claimed in Claim 1,  
c h a r a c t e r i s e d in that the roller (11) is  
30 capable of, as a result of the actuation of the trigger  
(1), to rotate and to roll over an engagement surface in  
said roller engagement.

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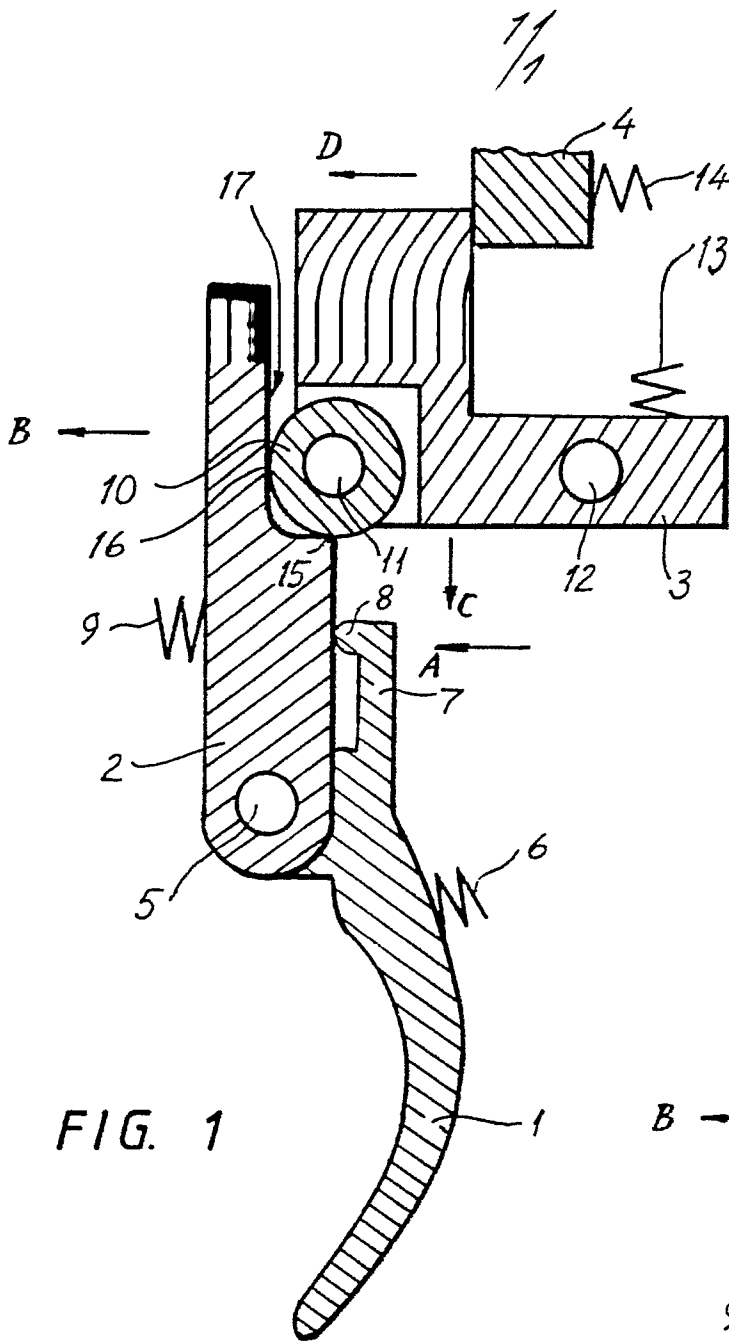


FIG. 1

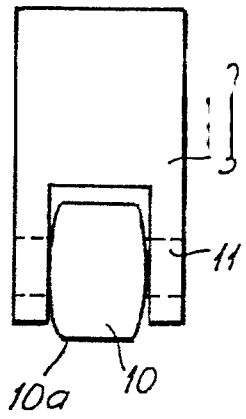


FIG. 2

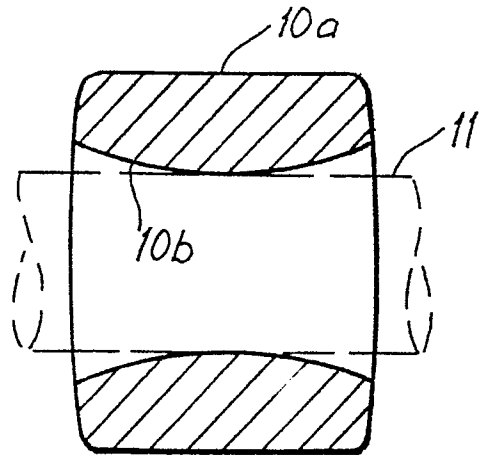


FIG. 3

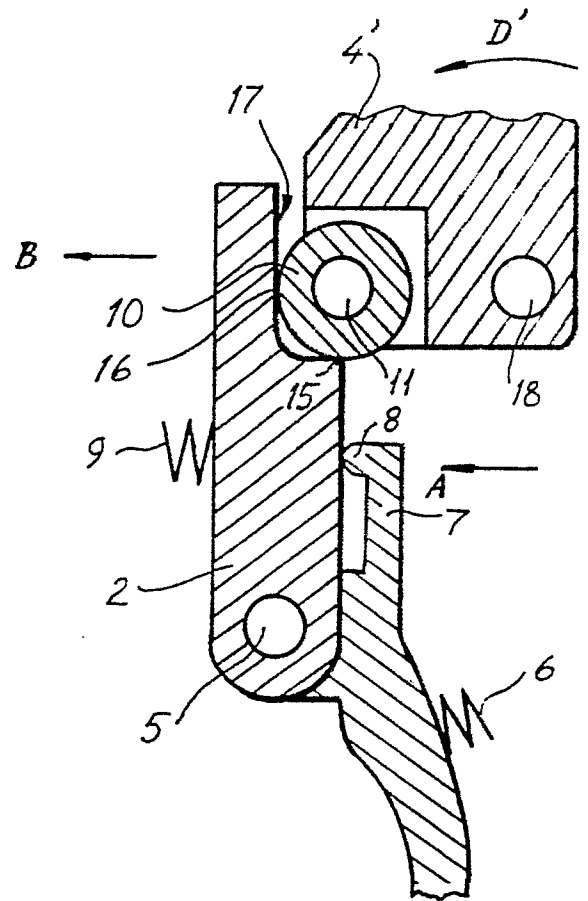


FIG. 4





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	US-A-1 648 831 (STRICKLER) * Page 1, lines 79-88; figures 1,2 *	1,2,3	F 41 C 19/00
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X	BE-A- 524 187 (MAY) * The whole document *	1,2,3	
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X	DE-C- 513 090 (STENDEBACH) * The whole document *	1,2,3	
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X	FR-A- 349 563 (DAUDETAU) * Page 1, lines 14-20; figures 1-4 *	1,2,3	
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X	DE-A-3 120 904 (PONTA) * Page 6, paragraph 2; figures 1,2 *	1,2,3	
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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int. Cl. 4)
			F 41 C
Place of search THE HAGUE		Date of completion of the search 07-06-1985	Examiner VAN DER PLAS J.M.
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