

	F41A F41A	9/33 (2006.01) 9/37 (2006.01)
NORGE	(51)	Int CI.
	(19)	NO

Patentstyret

(45)	Oversettelse publisert	2020.10.05
(80)	Dato for Den Europeiske Patentmyndighets publisering av det meddelte	
	patentet	2020.05.27
(86)	Europeisk søknadsnr	16810379.4
(86)	Europeisk innleveringsdag	2016.12.14
(87)	Den europeiske søknadens Publiseringsdato	2018.10.24
(30)	Prioritet	2015.12.14, DE, 102015121772
(84)	Utpekte stater	AL ; AT ; BE ; BG ; CH ; CY ; CZ ; DE ; DK ; EE ; ES ; FI ; FR ; GB ; GR ; HR ; HU ; IE ; IS ; IT ; LI ; LT ; LU ; LV ; MC ; MK ; MT ; NL ; NO ; PL ; PT ; RO ; RS ; SE ; SI ; SK ; SM ; TR
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(54) Benevnelse AMMUNITION FEED FOR FEEDING A BELTED AMMUNITION

(56) Anførte publikasjoner CH-A- 136 955 US-A- 2 404 325 US-A- 2 093 705 DE-C- 125 933 Vedlagt foreligger en oversettelse av patentkravene til norsk. I hht patentloven § 66i gjelder patentvernet i Norge bare så langt som det er samsvar mellom oversettelsen og teksten på behandlingsspråket. I saker om gyldighet av patentet skal kun teksten på behandlingsspråket legges til grunn for avgjørelsen. Patentdokument utgitt av EPO er tilgjengelig via Espacenet (<u>http://worldwide.espacenet.com</u>), eller via søkemotoren på vår hjemmeside her: <u>https://search.patentstyret.no/</u> The invention is concerned with an ammunition feed for feeding at least one belted ammunition to a weapon before a breech or breech head of the weapon. The weapon is an externally powered or self-powered weapon system, for example an automatic weapon or a machine gun, with a straight-fed breech or ammunition. In a preferred embodiment, two belted ammunitions of the weapon are fed. The two ammunition feeds transfer the ammunition from one direction and thereby overlap. To avoid a wrong shot, the extraction of the ammunition from the ammunition belt is separated from the movement of the breech. This makes it possible that the ammunition can only be extracted from the ammunition belt after a predetermined distance has been traveled by

the breech.

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Such weapon systems are known from EP 2 018 509 B1, EP 2 198 231 B1 and EP 2 257 763 B1.

An ammunition feed from different ammunition containers on a common rotor of a weapon from one direction is described by DE 10 2007 062 548 A1.

- 20 DE 36 27 360 C1 discloses a dual-cartridge alternating feed for an externally powered automatic weapon with two feed chutes parallel to one another. For feeding the ammunition from the two feed chutes, the direction of rotation of the rotor changes, so that the respective cartridge is transported directly from a waiting position of a feeding star wheel that is fixed to the weapon housing into a recess of the rotor and is
- 25 transferred to a breech by incremental movements of the rotor for passing it on into a loading chamber.

DE 20 2014 102 779.3, which is not a prior publication, describes an ammunition feed for feeding ammunition into a weapon for delivering the ammunition before a breech from
preferably two directions, right and left. For this purpose, a common feed is displaced in the vertical plane, so that a right-hand or left-hand transporting star is incorporated in the ammunition feed or the ammunition propulsion. By displacing the common feed, the ammunition is fed from the right or from the left and placed before the breech or breech head.

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The feeding of belted ammunition and delivery of the same before a breech or breech head is also known. Here, the ammunition must be extracted from the belt and delivered to the breech or breech head. The extraction of the ammunition from the belt link takes place during the return of the breech by a cartridge hook, the delivery before the breech takes place during its advancement (see the Browning machine gun).

Such an ammunition feed in an automatic firearm with a sliding barrel is also known from DE 125 933 C.

10 It is disadvantageous that the next ammunition to be fired is already extracted from the belt as the breech moves back. This ammunition is then already in the weapon system if firing is interrupted. In this situation, the weapon system is not safe. In particular, incorporation of a further ammunition feed from the same direction entails the problem of a wrong shot.

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Taking this problem into consideration, the object of the invention is to design a novel ammunition feed.

The object is achieved by the features of Patent Claim 1. Advantageous refinements can be found in the subclaims.

The invention is based on the concept of mechanically separating the extraction of the ammunition and the movement of the breech from one another. The ammunition is for its part only fetched or extracted from the ammunition belt when the breech has already traveled a distance. The extraction of the ammunition consequently only takes place at a point in time at which the breech is already unlocked and partly returned. If at this point in time the firing has been completed and the weapon system stopped, there is no ammunition in the weapon system, since it has not yet been extracted from the ammunition belt.

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The separation of the extraction of the ammunition from the movement of the breech is implemented by an ammunition extractor or a cartridge hook being incorporated separately from the breech return, and preferably fixed to the cradle. This allows the two movements, the extraction and the return or advancement of the breech, to be separated from one another. The breech travels a distance and only after this distance carries the cartridge hook along with it, i.e. at a later point in time. During the advancement, the breech carries the cartridge hook along with it over this distance and places the cartridge hook at this position in a deactivating manner, the cartridge hook already hooking into the next ammunition waiting in the extractor groove (cartridge case).

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As the fitting location, the invention provides a feed that is integrated in the weapon system in the known way, fixed to the cradle but movable. This feed comprises at least one side guiding part, which receives the necessary guides or control cams for the cartridge hook. An inner guide cam and an outer control cam for the cartridge hook are provided. The inner guide serves the purpose of being able to move the cartridge hook with the breech backward and forward. The cartridge hook can be placed in a deactivating manner by the breech in a downwardly facing front portion of the cam. The outer control cam serves the purpose that the cartridge hook can extract the ammunition from an ammunition belt and deliver it to the breech. The two cams, the guide cam and the control cam, can also be incorporated on one side in the side guiding part, with the

same function.

In order that the cartridge hook only acts on the ammunition in the ammunition belt when the breech has traveled a distance, the breech has a guide or cam. This guide is located in the upper region of the breech or the breech head (chamber). This guide functionally interacts with the inner guide cam and the outer control cam of the cartridge hook by way of means. As means for the interaction between the breech and the cartridge hook, a pin of the cartridge hook engages in this guide. The same pin also lies in the inner guide cam of the side guiding part of the feed. Together with the inner guide cam of the side guiding part of the feed, this guide cam in the breech makes it possible that the cartridge hook can be carried along with the movement of the breech and placed in a predefined position in a deactivating manner during the advancement, i.e. can be separated from the further movement of the breech.

30 The feed or the side guiding part may additionally be moved laterally, for example by pivoting. This particular embodiment allows the cartridge hook to be moved out of the guide of the breech. By this measure, the safety of the weapon system can be increased, since the cartridge hook, fixed to the cradle, cannot itself perform any movements. This position of the cartridge hook, disengaged from the breech, can be used for transporting

the weapon system.

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In a development, the invention provides two ammunition feeds on the weapon system. These ammunition feeds can be deployed from the right and from the left.

In a preferred embodiment, however, it is provided to incorporate the ammunition feed
from one and the same direction, right or left. For this purpose, the side guiding part with
the guide and control cam is mirrored and incorporated on one and the same feed. The
feed is also movably incorporated in the cradle and can be displaced, etc. In this
embodiment, the feed is however preferably also pivoted. The described mimic of the
inner guide cam and outer control cam for guiding and controlling the cartridge hook is
mirrored as an opposite side guiding part of the feed, incorporated in it. The cartridge
hook itself is also mirrored and integrated in the feed. Both cartridge hooks, right and

left, are coupled with the breech according to the choosing of ammunition or selection of ammunition, in order then to interact functionally with it.

- 15 In a preferred embodiment, it is provided that the two ammunition feeds are arranged in such a way that the upper one runs over the lower one, which for its part is diverted to the same feeding level of the first ammunition. The lower ammunition feed then interacts with the left-hand cartridge hook and the upper ammunition feed interacts with the right-hand cartridge hook, or vice versa. For this purpose, the respective side guiding
- 20 part with the mimic for guiding and controlling the right-hand or left-hand cartridge hook is moved or deployed into the weapon system. As already explained, the moving preferably takes place by pivoting the entire feed. The pivoting of the feed results from the choosing of the ammunition by an operator. With the moving of the feed, the upper or lower ammunition feed or the upper or lower belted ammunition is deployed or
- 25 retracted. With the displacing or pivoting, the respective cartridge hook is also displaced or pivoted together with the ammunition feed / ammunition belt into or out of the weapon system. As a result, either the belted ammunition from the lower ammunition feed or the belted ammunition from the upper ammunition feed can be fired. During the displacing or pivoting, the cartridge hook always remains aligned with the ammunition
- 30 that is next to be fired from the ammunition belt. One of the advantages of this structural connection between the cartridge hook and the ammunition feed is that a realignment of the cartridge hook with the cartridge rim of the ammunition next to be fired is not necessary. Moreover, the weapon system is already ready to fire when the respective ammunition feed is deployed.

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For firing the ammunition from the upper ammunition belt, this ammunition belt is moved down. The end position (beginning of the ammunition belt) of the upper ammunition belt or the feeding ammunition / cartridge then assumes the same height as previously the lower ammunition belt. The two cartridge hooks on the right and left are for their part located at the same height in relation to one another. Both cartridge hooks

5 for their part located at the same height in relation to one another. Both cartridge hooks travel the same distance for feeding the ammunition into a groove on the end face of the breech or the breech head.

The invention is to be explained in more detail on the basis of an exemplary embodiment with drawings, in which:

- Figures 1-3 show a feed for a weapon system with two ammunition feeds,
- Figure 4 shows a view of the right-hand side of the feed from Figures 1-3,
- Figure 5 shows a view from below of a cartridge hook,

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- 15 Figure 6 shows a representation of the cartridge hook and of a right-hand side guiding part of the feed, from outside,
 - Figure 7 shows a representation of the cartridge hook and of the outer side guiding part of the feed, from inside,
- Figure 8 shows a slightly transparent representation of the right-hand side guiding 20 part of the feed with various guide cams and control cams for the cartridge hook in interaction with a breech cam incorporated in the breech head,
 - Figure 9 shows a representation of the engagement of the cartridge hook with a cartridge base of an ammunition,
- 25 Figure 10 shows a slightly transparent representation of the interaction of the cartridge hook, the ammunition and a breech of the weapon.

Right, left, forward and backward are seen in the direction of firing and are defined as such.

30 The exemplary embodiment is described on the basis of a dual ammunition feeding device 100. An embodiment with only one ammunition feed is likewise provided (still to be explained).

Figures 1-3 show in a plan view a feed 1 for a weapon system that is not represented any more specifically. In a preferred embodiment, a first ammunition feed 2 (for example ammunition container) and a second ammunition feed 3 (for example ammunition chute) are linked with the feed 1. The first ammunition feed 2 comprises a first belted ammunition 4 and the second ammunition feed 3 comprises a second belted ammunition 5. The two ammunitions 4 and 5 are preferably two different types of ammunition, but may also be of the same type.

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Also incorporated on the feed 1 are a left-hand cartridge hook 6 and a right-hand 10 cartridge hook 7. Both have in each case a pin 8 and 9, respectively, which face one another. The feed 1 can be pivoted about a pivot point D. A breech or a breech head of the weapon system is identified by 10. In Figure 1, this breech or breech head is functionally coupled with the left-hand cartridge hook 6 by the pin 8 of the left-hand cartridge hook 6. In this position of the feed 1, the first ammunition 4 is fed to the 15 weapon system. In Figure 2, neither of the two cartridge hooks 6, 7 is coupled with the breech 10 by way of its pin 8, 9. This position can be used as a transporting position of the weapon system. It forms a safe position, since neither the ammunition 4 nor the ammunition 5 can be fed to the weapon system. In Figure 3, the right-hand cartridge hook 7 is functionally connected to the breech 10 by way of its pin 9, so that then the 20 ammunition 5 can be introduced into the weapon system and can be brought before the breech 10 (still to be explained).

Figure 4 represents a detailed representation of the right-hand cartridge hook 7, the pin 9 of which engages in the breech 10 a guide or guide cam 11 (breech cam 11) thereof.
The breech cam 11 of the breech 10 has an upwardly directed clearance 12 in the front region of the breech 10. This clearance 12 forms the carrying-along position of the cartridge hook 7. The breech 10 itself is located in its forward position and is locked.

- The cartridge hook 7 is represented more specifically in Figure 5. The cartridge hook 7
 has in its front portion 7.1 a fork or U shape 7.2, which enclose the side 1.2 of the feed 1.
 Incorporated on the right-hand inner side 7.3 of the U shape 7.2 is a bolt 13. On the end face 7.4 of the left-hand part of the fork 7.2 is the actual hook 7.5. The cartridge hook 7 is stabilized by way of a supporting part 1.1 of the feed (Figure 6) when the latter is guided together with the breech 10 backward and over the supporting part 1.1. A further bolt 14
 is attached above the cartridge hook 7 on the latter. On the outside, the feed 1 has on
 - the right-hand side guiding part 1.2 a guide 15 incorporated in it. This serves as a control

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cam 16 for the cartridge hook 7. In this control cam 16 engages the bolt 13 of the fork 7.2. The control cam 16 has a slightly sloping portion 16.1 adjoining a short straight portion, a slope 16.2 and also a further straight portion 16.3.

- 5 Figure 7 shows the guide cam 17 lying inside in the side part 1.2 of the feed. This guide cam has at its front end a downwardly facing clearance 17.1. As already explained, the separation of the control cam 16 and the guide cam 17 between the outer side and the inner side of the side guiding part 1.2 is not necessary. There is also the possibility of incorporating the two, with the same function, either on the outer side or on the inner
- 10 side of the side guiding part 1.2. Correspondingly, the cartridge hook 7 can then dispense with a fork shape 7.2 in the front region 7.1.

Figure 8 shows in a slightly transparent representation a side view of the outer right-hand part 1.2 of the feed 1 (side guide of the cartridge hook 7). An inner guide 17 (Figure 7) in
this side guide 1.2 of the feed 1 serves the purpose that the pin 9 of the cartridge hook 1 can be moved together with the breech 10 or the breech head. In this representation according to Figure 6, the cartridge hook 7 is placed in a defined position in a deactivating manner. The cartridge hook 7 is located with its hook 7.5 behind the cartridge rim 5.1 of the ammunition 5 located in the ammunition belt.

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Figure 9 shows the engagement of the cartridge hook 7 with the ammunition 5 for extracting the same from the ammunition belt of the ammunition feed 3.

In Figure 10, the breech 10 or the breech head is represented more specifically in a slightly transparent representation. Incorporated in the end face 10.1 of the breech 10 is the groove 18. The exit of a firing pin (not represented any more specifically) for striking a primer of the ammunition 4, 5 is identified by 20.

The way in which the extraction of the ammunition 5 (4) from the ammunition feed 3 (2)
functions and the delivery of a new ammunition 5 (4) before the breech 10 is described on the basis of the right-hand cartridge hook 7 and the belted ammunition 5 of the upper ammunition belt 3:

For firing the ammunition 5 from the upper ammunition belt 4, the ammunition belt is moved downward (see spring-loaded plate 24, Figure 10).

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Beginning with the locking of the breech 10 and the igniting of the ammunition 5, the cartridge hook 7 lies in its deactivated position P (Figure 8). The breech 10 lies against the firing chamber of the weapon system. After ignition has taken place, the breech 10 is guided backward into its back position for the delivery of a new ammunition 5. The

- 5 cartridge hook 7 remains in its current position, while the breech 10 is guided backward. After a predetermined distance W (is determined by the length between the deactivated position P of the cartridge hook 7 and the clearance 12 of the breech cam 11), when the pin 9 of the cartridge hook 7 has covered this distance in the breech cam 11 and run into the clearance 12, the breech 10 carries the cartridge hook 7 along with it in the backward
- 10 direction. At this point in time, the cartridge hook 7 is in line with a front end face 10.1 of the breech 10 or breech head. The cartridge hook 7 runs with its pin 9, projecting on both sides, out of its clearance 17.1 into the inner guide 17 and is guided backward along the latter together with the breech 10. With the backward guiding of the cartridge hook 7, the bolt 13 runs along its outer control cam 16 on the right-hand side guiding part 1.2.

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In the straight portion 16.1, the cartridge hook 7, which has already been hooked into a cartridge rim 5.1 of the ammunition 5 during the advancement of the breech 10, is carried along. With the carrying along of the cartridge hook 7, the ammunition 5 is extracted from the ammunition belt 3 and likewise carried along. The slope 16.2 forms a diverting guide and serves the purpose of pressing the ammunition 5 extracted from the ammunition belt 3 on the front end face 10.1 of the breech 10. That is to say that the cartridge or ammunition is diverted when the cartridge hook 7 and the breech 10 are together guided backward after a time delay. The diverting of the extracted ammunition 5 is determined by the slope 16.2. On the way back, the cartridge

- 25 hook 7 is correspondingly controlled in the downward direction by way of the slope 16.2, whereby the cartridge hook 7 or its hook 7.5 presses the ammunition 5 extracted from the ammunition belt 3 into the end-face groove 19 of the breech 10 (latching onto and engaging). To avoid the ammunition 5 being able to slip out of the hook 7.5 when it is being transported, means 18 are incorporated. These press slightly against it from below.
- When the ammunition 5 is being pressed down, these means 18 yield, in order to allow engagement of the cartridge rim 5.1 in the groove 19 of the breech 10. Together with an ejector 21 incorporated laterally in the breech 10, the pressing down of the ammunition 5 brings about ejection of the empty cartridge case (not represented any more specifically) guided with the breech 10 from a weapon barrel of the weapon system. The
- 35 second straight portion 16.3 serves for restricting this diversion. If the bolt 13 runs into

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the further straight portion 16.3 of the control cam 13, further diversion or pressing down is prevented (restricted).

On its way forward, the breech 10 then has before it a new ammunition 5, which it pushes into the weapon barrel (firing chamber) of the weapon system. During the advancement of the breech 10, the cartridge hook 7 is also carried along with it. The cartridge hook 7 runs along its guide 17 up to the clearance 17.1 and into the latter. The pin 9 is in this case drawn out of the clearance 12, i.e. out of the carrying-along position of the cartridge hook 7, of the breech 10. The breech 10 for its part continues to run,

10 while the pin 9 of the cartridge hook 7 slides along the breech cam 11. In its forward position, this breech 10 is locked again. In this position P, the cartridge hook 7 is deactivated.

During the moving forward of the breech 10, the bolt 13 is guided along the control cam
16. When moving along the slope 16.2, it raises the cartridge hook 7 and places it against the cartridge rim 5.1 of the ammunition 5 to be newly fetched.

The weapon is loaded, firing can begin again.

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20 For easy mounting of the cartridge hook 7 in the control cam 13, a vertical straight portion 22 is incorporated in the side guiding part 1.2.

The type of mounting of the pin 9 of the cartridge hook 7 within the cams 11 and 17 in its deactivated position has the advantage that the cartridge hook 7 can respond without any problem to the way in which the weapon system recoils.

For further transport of the belted ammunition 5, the bolt 14 is attached to the cartridge hook 7. This bolt tilts away laterally when the ammunition 5 is diverted by the cartridge hook 7. The bolt 14 performs a rocking movement. A rocker 23 that is linked to the bolt

- 30 14 causes the belted ammunition 5 to be extracted from the ammunition feed 3. This takes place by way of a carrier (not represented any more specifically), which acts on the ammunition belt of the ammunition 5 and moves it, i.e. for example pushes and/or pulls it.
- 35 A further particular structural feature is also that the pivot point H of the hook 7.5 is located at the front of the cartridge hook 7. When the breech 1 is moved back and the

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pin 9 slides out of its inactive position into the clearance 12 of the breech cam 11, a lever movement acts on the cartridge hook 7. This entering of the pin 9 into the clearance does not however exert any lever movement on the hook 7.5, since the latter is arranged at a pivot point H on the cartridge hook 7. This achieves the effect that a lever movement can act on the hook 7.5, and consequently on the ammunition 5.

The ejector 21, which forms the stop for the ammunition 5, can be used for secure abutment of the ammunition 5 brought before the breech 10. For this purpose, the ejector 21 is guided in a groove 28 in the breech 10, which lies below the center axis of the breech. It must in this case be ensured that the primer of the ammunition 5 is aligned

in line in a plane with the firing pin (20).

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The functional sequence of the feeding of the ammunition for the weapon system is described on the basis of the right-hand cartridge hook 7. Since the left-hand cartridge hook 6 and the entire mimic comprising the right-hand side guide 1.2 of the feed 1 is mirrored for the left-hand side guide 1.2', the functional sequence for the feeding of the ammunition of the first ammunition 4 from the lower ammunition feed 2 is correspondingly as described for the upper ammunition feed, just mirror-inverted.

The construction of the feed described above can also be used for only one ammunition feed 2 in the weapon system. In this embodiment, only one side guide is then necessary, primarily the left-hand side guiding part. Then the pin 8 engages in the breech cam 11 of the breech 10. The cartridge hook 6 undertakes the extraction of the ammunition 4 from the ammunition feed 2, i.e. from the ammunition belt. Also in the case of only one ammunition feed, displacing and/or pivoting may be provided, but would not be necessary here. Providing it would however have the advantage that a safety-relevant and transporting position can also be assumed for this weapon system.

If only one ammunition feed 2 (3) is present, retrofitting for a second ammunition 5 can be quickly realized. For this purpose, the right-hand side guide 1.2 is docked, i.e. fastened, onto the guide 1, for example screwed on. Should the fastening part not provide any further receiving possibility for this, this fastening part may be exchanged for another fastening part 25 with two receptacles (holes) 26, 27. Alternative means of attachment by way of a plate, etc. are possible.

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List of designations

	1	feed
5		1.1 supporting part
		1.2 right-hand / left-hand side guiding part
	2	first ammunition feed
	3	second ammunition feed
	4	first belted ammunition
10	5	second belted ammunition
	6	left-hand cartridge hook
	7	right-hand cartridge hook
		7.1 front portion
		7.2 fork / U shape
15		7.3 right-hand inner side of fork
		7.4 end face of fork
		7.5 hook (claw)
	8	pin of left-hand cartridge hook
	9	pin of right-hand cartridge hook
20	10	breech / breech head
	11	breech cam at top of breech
	12	clearance in the breech cam
	13	bolt (on the fork)
	14	bolt (on the cartridge hook)
25	15	guide
	16	control cam of cartridge hook
		16.1 straight portion
		16.2 slope
		16.3 second straight portion
30	17	guide (inner side of side guiding part)
		17.1 clearance
	18	means
	19	groove
	20	firing pin exit
35	21	lateral ejector
	22	straight portion for mounting
	23	rocker
	24	means for diverting the upper ammunition beit
40	25	
40	26	clearance
	27	clearance
	20	
	100	ammunition feeding device
	100	

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Patentkrav

1. Våpensystem som har minst én ammunisjonsinnmatingsinnretning (100) for belteammunisjon (4, 5) for levering foran et laderom (10) eller til hodet i et laderom, idet ammunisjonen (4, 5) blir

- 5 trukket ut fra ammunisjonsbeltet av en patronkrok (6, 7) og levert til laderommet, idet patronkroken (6, 7) blir tatt med eller lagt bort av laderommet (10) når laderommet (10) beveger seg et stykke bakover eller fremover , **karakterisert ved at** patronkroken (6, 7) er innlemmet i våpensystemet på en slik måte at ammunisjonen (4, 5) kun trekkes ut fra ammunisjonsbeltet når laderommet (10) allerede har beveget seg en distanse (W).
- 2. Våpensystem ifølge krav 1, karakterisert ved minst ett sideveis anordnet føringselement (1.2, 1.2') med en styringskam (16) og en føringskam (17) så vel som en føring (11) i laderommet (10) for patronkroken (6, 7), idet føringen (11) i det øvre området av laderommet (10) er utformet som en låsekam, idet føringskammen (17) i sin fremre del omfatter en nedover vendende utsparing (17.1), idet låsekammen (11) i det fremre området omfatter en oppover vendende
- utsparing (12) innrettet til å ta med patronkroken (6, 7) og idet styringskammen (16),
 føringskammen (17) og låsekammen (11) etterligner styringen av patronkroken (6, 7).

3. Våpensystem ifølge krav 2, **karakterisert ved at** det minst ene sideveis anordnete føringselementet (1.2, 1.2') danner en tilførsel (1).

4. Våpensystem ifølge krav 3, karakterisert ved at to sideveis anordnete føringselementer (1.2,
1.2') som danner tilførselen (1), er inkludert.

5. Våpensystem ifølge et av kravene 1 til 4, **karakterisert ved at** patronkroken (6, 7) som er skilt fra laderommet (10), er utstyrt med en innretning (8, 9) som iverksetter en funksjonell samhandling mellom patronkroken (6, 7) og laderommet (10).

6. Våpensystem ifølge krav 5, karakterisert ved at innretningen (8, 9) er en tapp som griper inn i
føringskammen (17) på det sideveis anordnete føringselementet (1.2, 1.2') til patronkroken (6, 7) og i låsekammen (11).

7. Våpensystem ifølge et av kravene 1 til 6, **karakterisert ved at** laderommet (10) har et spor (19) på endeflaten i hvilket ammunisjonen (4, 5) blir styrt inn ved patronkroken (6, 7).

8. Våpensystem ifølge et av kravene 1 til 7, karakterisert ved at en ejektor (21) som inngår i
laderommet (10), tjener som en begrensning for ammunisjonen (4, 5) under dens levering til
laderommet (10).

9. Våpensystem ifølge et av kravene 2 til 8, **karakterisert ved at** det minst ene sideveis anordnete føringselementet (1.2, 1.2') kan forskyves med patronkroken (6, 7) på en slik måte at innretningen (8, 9) til patronkroken (6, 7) blir ført ut av og inn i låsekammen (11).

10. Våpensystem ifølge krav 9, **karakterisert ved at** posisjonen til patronkroken (6, 7) når den ikke er i inngrep med laderommet (10), kan brukes under transport av våpensystemet.

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11. Våpensystem ifølge et av kravene 2 til 10, **karakterisert ved at** styringskammen (16) til patronkroken (6, 7) er anordnet på utsiden i det sideveis anordnete føringselementet (1.2, 1.2') og at føringskammen (17) til patronkroken (6, 7) er anordnet på innsiden i det sideveis anordnete føringselementet (1.2, 1.2').

10 12. Våpensystem ifølge et av kravene 1 til 11, **karakterisert ved at** det befinner seg en krok (7.5) på endeoverflaten (7.4) til patronkroken (7).

13. Våpensystem ifølge krav 12, **karakterisert ved at** kroken (7.5) på patronkroken (7) er anordnet i et dreiepunkt (H).

14. Våpensystem ifølge et av kravene 2 til 13, karakterisert ved at patronkroken omfatter i sin

15 fremre del (7.1) en gaffel- eller U-form (7.2) som omslutter det sideveis anordnete føringselementet (1.2), idet en bolt (13) er innrettet på en høyre innerside (7.3) av gaffelformen (7.2) og idet kroken (7.5) som er anordnet i et dreiepunkt (H), er innrettet på endeflaten til den venstre gaffelformen (7.2).

15. Våpensystem ifølge et av kravene 3 til 14, karakterisert ved at patronkroken (6, 7) er

20 stabilisert ved hjelp av et støtteelement (1.1) av tilførselen (1) når sistnevnte føres sammen med laderommet (10) bakover eller fremover.

16. Våpensystem ifølge krav 14 eller 15, karakterisert ved at en ytterligere bolt (14) er anordnet ovenfor og på patronkroken (6, 7), hvilken bolt muliggjør transporten av belteammunisjonen (4, 5) til våpensystemet.



















