

Device for catching and ejecting a cartridge case

5 The invention relates to a device for catching and ejecting a cartridge case, in particular a cartridge base, with a catching device that can be moved between a catch position and an ejection position, whereby the cartridge case can be caught in the catch device in the catch position and ejected from it via an ejector in the ejection position.

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Such devices are used in particular in military vehicles that can fire large-caliber ammunition. Depending on the projectile, a projectile casing that has not been fired, such as the ground of the projectile, may remain in the gun barrel and must first be ejected before the next projectile can be fired.

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It is known, for example, to catch or temporarily store the projectile casings in the vehicle and then remove them from the vehicle together at the next opportunity. However, it is also known to eject the cartridge case directly from the vehicle. EP 0 149 014 A2 discloses a device with which the corresponding casings can be caught after the bullet has been fired and then ejected directly from the vehicle. The device has a catching device that can be moved into a catch position behind the gun barrel so that the cartridge case of a projectile can be caught in the catching device after firing. In order to eject the cartridge case, the catching device can be moved into an ejection position, and in this position the caught casing can then be ejected from the catching device and thus also from the vehicle via an ejector.

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However, the design described in EP 0 149 014 A2 has the disadvantage that the catching device must first be moved from the catch position to the ejection position by means of a drive before the ejector must then

be actuated in the ejection position by means of a further drive in order to finally eject the cartridge case. Due to the different drives for moving the catching device and for moving the ejector, this device is comparatively complex in terms of controlling the drives.

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Based on this, the invention sets itself the task of providing a device for catching and ejecting a cartridge case, which is characterized by a simplified design.

10 This task is solved in a device of the type described above by the fact that the ejector can be automatically moved into a tension position by a movement of the catching device and can be automatically released when the ejection position is reached.

15 This embodiment means that it is only necessary to actively move the catching device via a drive, and no separate drive is required to move or release the ejector. Instead, the movement and releasing of the ejector can be initiated via the drive of the catching device, so that the movement and releasing of the ejector can be purely passive in nature. Overall, the catching device and the ejector can thus be moved via a common drive.

Furthermore, no additional control is required to trigger or accelerate the ejector and thus eject the cartridge case. This is because the coupling allows the ejector to be tensioned by a movement of the catching device, and when the ejection position is reached, this preload can then be released automatically so that the cartridge case is automatically ejected via the ejector. Advantageously, the ejector can thus be coupled to the catching device in such a way that it is moved into a tension position when the catching device is moved and is automatically released

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when the ejection position is reached. Once the ejector has been moved into the tension position, it can be accelerated together with the cartridge case by releasing. The cartridge case can then be ejected from the vehicle by this acceleration.

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According to an advantageous further development of the invention, it is proposed that the ejector is coupled to the catching device in such a way that it is automatically moved into the tension position when the catching device moves, in particular from the ejection position into the catch position. In the catch position, the catching device can be arranged behind the gun barrel so that after a projectile is fired, the remaining cartridge case can be caught in the catching device. In the ejection position, the catching device can be pivoted upward so that the caught cartridge case can then also be ejected upward. Due to its embodiment, the ejector can be tensioned as soon as the catching device is swung down into the catch position. The ejector is advantageously pre-tensioned when it is not in contact with a cartridge case to be ejected or when there is no cartridge case in the catching device. This ensures that the ejector moves into the tension position with particular reliability.

20 The ejector can thus already be pre-tensioned in the catch position. Due to the automatic movement of the ejector, no additional drive is required to move the ejector. Rather, the ejector is moved automatically due to a mechanical coupling with the catching device or with the movement of the catching device.

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In a further development of the invention, it is proposed that the cartridge case can be ejected from the catching device against gravity via the ejector. The cartridge case can thus not only be pushed out of the catching device, but can also be accelerated so strongly that it is accelerated against gravity, e.g., at an upward angle, and can be ejected or

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shot out of the vehicle. In this respect, it can also be ensured that the cartridge case only hits the ground at a sufficient distance from the vehicle. The cartridge case can be accelerated together with the ejector in an ejection direction, whereby the ejection direction can be inclined upward relative to the horizontal.

From a design perspective, it has proven advantageous to position the ejector inside the catching device. The ejector can be arranged behind a caught cartridge case so that the cartridge case can be accelerated via the ejector. Furthermore, the ejector can be guided in the catching device, in particular linearly guided. This ensures reliable movement and acceleration of the ejector in the ejection direction. Jamming or tilting of the ejector can thus be prevented.

Furthermore, it has proven advantageous for the ejector to be mechanically coupled to the catching device. Through this embodiment, movement of the ejector can be initiated mechanically by movement of the catching device. The ejector can be forcibly coupled to the catching device so that it is automatically retracted and thus preloaded when the catching device moves into the catch position of the catching device. No additional intervention is required for this.

According to a further advantageous refinement of the invention, it is proposed that the catching device be movable both translationally and rotationally when moving between the catch position and the ejection position. During such movement, the catching device can be pivoted upward and simultaneously tilted upward so that the ejection direction is inclined upward relative to the horizontal. In this respect, a movement superimposed by a translational and a rotational movement can take place. In the catch position, the catching device can be arranged in

alignment with the gun barrel so that reliable catching of the cartridge case is ensured. By pivoting upward and tilting upward at the same time, the cartridge case can then be ejected diagonally upward from the vehicle when the ejector is released.

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Furthermore, it has proven advantageous if the catching device can be moved between the catch position and the ejection position by means of a single drive. The catching device can be moved or pivoted both upwards into the ejection position and back down into the catch position
10 by means of this single drive. Due to the single drive, the design is very simple and control is also very easy. Alternatively, of course, several drives can be provided for moving the catching device so that it can still be moved even if one drive fails, for example. However, due to the coupling, no additional drive is required for moving the ejector or for moving
15 the components described in more detail below.

With regard to the drive, it has proven advantageous to design it as a lifting cylinder. The lifting cylinder can, for example, be extended and retracted hydraulically or pneumatically and connected to a corresponding hydraulic or pneumatic network in the vehicle. When the lifting cylinder is extended, the catching device can be moved from the catch position to the ejection position, i.e., basically upwards, and when the lifting cylinder is retracted, the catching device can be moved or pivoted from the ejection position back to the catch position, i.e., basically
20 downwards.
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To achieve movement of the catching device, a trapezoidal linkage can be provided, which is connected to the catching device on one side and to a mounting element on the other side. The trapezoidal linkage allows
30 a combined translational and rotational movement of the catching

device between the catch position and the ejection position. The trapezoidal linkage can guide the catching device purely mechanically in the appropriate manner, and no further control of this movement of the catching device is necessary. The catching device can thus be guided via
5 the trapezoidal linkage.

In terms of design, the trapezoidal linkage can comprise two rods of different lengths and a lever connecting the two rods at their ends in a pivotable manner. The catching device can be firmly connected to the
10 lever and thus move together with it. The rotational movement or tilting of the catching device may depend on the length of the two rods and their end points. Advantageously, the rods have different lengths in order to achieve a corresponding rotational movement during a translational movement, and they may also have different distances between
15 each other at their end regions. The end points of the rods can thus form a trapezoid.

In the end regions opposite the levers connecting the two rods, these can be arranged so that they can pivot on a mounting element. The
20 mounting element can be designed as a mounting plate and arranged on the weapon side. When moving between the catch position and the ejection position, the two rods can be pivoted relative to the mounting element. The respective pivot axes can extend parallel to each other in a horizontal direction and be arranged offset from each other in two direc-
25 tions. This offset in two directions, in conjunction with the different rod lengths, allows the lever or the catching device to be automatically rotated or tilted during movement.

Furthermore, it has proven advantageous if the mounting element can be
30 connected to the recoiling part of a weapon. In this respect, the

mounting element and thus also the trapezoidal linkage and the catching device can recoil together with the weapon when a projectile is fired due to the recoil. It is advantageous to have two mounting elements arranged on the left and right of the weapon so that the catching device
5 can be held centrally behind the weapon and thus in line with the weapon barrel. The arrangement on the recoiling part of the weapon ensures reliable catching of the cartridge case after the shot is fired. In particular, the catching takes place when the weapon barrel is still in motion due to the recoil. The catching device can therefore be attached
10 to the weapon.

To move the catching device, it has proven advantageous to couple the drive to a rod of the trapezoidal linkage. The drive can be used to pivot the corresponding rod up or down. The rod is moved around its pivot
15 point connected to the mounting element. By connecting the two rods via the lever, only one rod can be actively driven by the drive, but the other rod can be moved in a corresponding manner. In the catch position, the two rods can be arranged essentially parallel to each other and at an angle in the ejection position. It is advantageous for the upper of
20 the two rods to be longer than the lower rod. This allows the tilting movement of the catching device described above to be initiated.

Furthermore, it has proven advantageous to provide a locking device for locking the trapezoidal linkage in the ejection position. The locking device prevents the trapezoidal linkage and thus the catching device from
25 moving when the weapon recoils. This also prevents the high forces that sometimes occur when the weapon recoils from causing unintended movement of the trapezoidal linkage or the catching device. The locking device can secure or fix at least one of the rods to the mounting element.
30 Due to the forced coupling of the two rods and the lever, fixing

one rod also prevents the other rod, the lever, and thus also the catching device from moving.

According to an advantageous further development of the invention, it is
5 proposed that the drive can be automatically decoupled from the catching device. When the drive is decoupled, no force can be transmitted between the drive and the trapezoidal linkage or the catching device. The drive can be stationary and thus decoupled from the recoiling part of the weapon. For example, the drive can be arranged on the cradle of the
10 weapon. When the weapon recoils, this can result in relative movement between the drive and the trapezoidal linkage or the catching device. This relative movement can achieve independent decoupling. The forces and accelerations acting on the drive can be kept within manageable limits by the decoupling, which ensures the long-term functionality of
15 the drive. It is therefore advantageous for the trapezoidal linkage or the catching device to be arranged so that it can move linearly relative to the drive in the catch position. The trapezoidal linkage and the catching device can move back together with the weapon without this having a negative effect on the drive.

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From a design perspective, it has proven advantageous for the drive to be coupled to the trapezoidal linkage, in particular a rod of the trapezoidal linkage, via a jaw connection. The jaw connection allows the rod of the trapezoidal linkage to be pivoted up and down in the direction of action of the drive and, at the same time, ensures that automatic decoupling takes place when the weapon recoils. The jaw on the drive side can be open in the direction of recoil of the weapon for this purpose. The drive is preferably arranged in such a way that its direction of action is angular and thus not parallel to the recoil direction of the weapon. For
25 connection to the drive, the trapezoidal linkage may have a coupling
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bolt which is coupled to the drive for moving the catching device between the catch position and the ejection position. The coupling bolt may be arranged on one of the rods, in particular the lower rod, and may protrude laterally. For coupling with the drive, the coupling bolt may be
5 arranged in the jaw of the drive. When the weapon recoils, the coupling bolt can then move out of the jaw through the opening of the jaw, so that independent decoupling can take place. When the weapon returns to its original position after recoil, the coupling bolt can also move back into the jaw independently. In a next step, the rod can then be moved
10 upward via the coupling bolt by extending the drive, thereby moving the catching device into the ejection position.

Furthermore, it has proven advantageous for the catching device to be adapted to the geometry of the cartridge case to be caught. This embod-
15 iment ensures that the cartridge case is reliably held in the catching device when it moves and can only move to a limited extent within the catching device. Since the cartridge case to be caught usually has a round cross-section, the catching device can also have a catch area with a substantially round cross-section. The diameter of the catching device
20 or the catch area can essentially correspond to the caliber of the projectile and, in this respect, also to the diameter of the cartridge case. The ejector can be movably arranged in the catch area, in particular in a linear direction or in the ejection direction. The catch area can serve as a guide for the ejector. Overall, the catching device or the catch area can
25 be designed in a cup shape. With regard to the ejector, it can be provided that this is designed as an ejector plate. The cartridge case to be ejected can thus lie as flat as possible against the ejector and be accelerated evenly in the ejection direction for ejection.

Furthermore, the catching device may have a catching area in which the cartridge case can be caught in the catch position. The catching area may be funnel-shaped and thus guide the caught cartridge case in the direction of the catch area. The catching area can be arranged in front of the catch area and located directly behind the gun barrel in the catch position. In terms of design, the catching area can be cylindrical. Furthermore, the catching area can have two openings opposite each other with respect to the central axis, which prevent the cartridge case from tilting when caught.

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According to an advantageous further development, it is proposed that the catching device be closed at one end by a bottom. The bottom can limit the catch area downwards, so that the movement of the ejector is also limited in this respect. The ejector can be arranged parallel to the bottom in the ejection position and can be moved accordingly in the normal direction to the bottom. During tensioning, the ejector can be moved toward the bottom of the catching device. To prevent air from becoming trapped between the ejector and the bottom, the bottom can have a pressure release opening so that the air can escape to the outside.

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From a design point of view, it has also proven advantageous if the catching device has at least one lateral recess and the ejector has at least one lateral protruding area that extends through the recess. It is advantageous to have two lateral recesses arranged on opposite sides, and the ejector can also advantageously have two corresponding protruding areas. The recesses can extend in the ejection direction and thus ensure reliable linear guidance of the ejector in the catching device.

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Furthermore, it has proven advantageous for the catching device to have a guide rail extending in the ejection direction to guide the movement of the ejector. The guide rail can be arranged next to the recess, allowing the protruding part of the ejector to extend through the recess and then
5 be guided on the guide rail. During movement, i.e., during tensioning or ejection, the ejector thus moves forward or backward, guided by the guide rails. The guide rail can be designed as a guide rod, and the protruding area of the ejector can accordingly have a round recess that is guided on the corresponding guide rail in the manner of a slide guide. It
10 is advantageous to provide two guide rails on opposite sides so that the ejector is guided on both sides and the force distribution is as homogeneous as possible.

According to a further design development, the guide rail is provided
15 with a damper which can be used to dampen the movement of the ejector in the ejection direction. Since the ejector is accelerated strongly when ejecting a cartridge case in order to ensure that the cartridge case is ejected far enough, the damper can reduce high material stress. The damper is therefore advantageously located at the front end of the guide
20 rail.

Furthermore, it has proven advantageous to provide a tension device by means of which the ejector can be automatically tensioned when the catcher is moved from the ejection position to the catch position. During
25 tensioning, the ejector can be moved in the opposite direction to the ejection direction and thus moved towards the bottom of the catching device. The ejector can thus be coupled to the catching device, in particular mechanically forced coupled, via the tension device. Due to the automatic tension, no additional drive is required; rather, this can be
30 done automatically by the rotation of the tension shaft relative to the

catching device. In this respect, the tension device can be actuated by a movement of the catching device and the ejector can be moved into the tension position. The ejector can thus be coupled to the catching device via the tension device.

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Furthermore, it has proven advantageous to provide a spring, whereby the ejector can be moved via the tension device against the force of the spring. During pre-tensioning, the ejector can compress the spring, which can then be pre-tensioned in the ejection direction. The spring

10 can be arranged between the ejector and the bottom of the catching device so that it is tensioned when the ejector moves toward the bottom of the catching device. To achieve uniform movement of the ejector, several springs can be provided. A spring assembly consisting of several springs is advantageous. In the tension position, the spring or springs can
15 be locked and thus compressed to the maximum.

From a design point of view, it has also proven advantageous for the tension device to have a tension shaft that can rotate relative to the catching device when the catching device moves between the ejection position and the catch position. It is advantageous for the tension shaft to

20 rotate automatically relative to the catching device due to the movement of the catching device. Due to the relative movement between the tension shaft and the drive device and thus also the ejector, when the catching device is moved from the ejection position to the catch position, the ejector coupled to the tension shaft can also be moved relative
25 to the catching device, preferably backwards against the force of the spring. Furthermore, the relative movement of the tension shaft and the catching device, which can be caused by the movement of the catching device, can also be actuated by the tension device and the retention device,
30 which are described in more detail below. The entire tensioning

and release mechanism can thus be initiated by the movement of the catching device.

It is advantageous if the tension shaft is connected to a rod of the trapezoidal linkage in a rotationally fixed manner so that it rotates relative to the catching device when the catching device moves between the catch position and the ejection position. In this respect, the tension shaft can be rotated automatically and without additional drive relative to the catching device when the catching device moves. The tension shaft can be mounted at its end in a lever of the trapezoidal linkage and connected in a rotationally fixed manner to a rod of the trapezoidal linkage, in particular the lower rod. Since the rod can rotate relative to the lever when moving from the ejection position to the catch position and the catching device is firmly connected to the lever, the rod and thus also the tension shaft rotate relative to the catching device when moving accordingly. Advantageously, when the catching device is moved from the ejection position to the catch position, the tension shaft rotates rearward relative to the catching device, so that the ejector is also pulled rearward against the force of the spring.

It is advantageous to provide two tension devices, one on one side and the other on the other side of the catching device. The ejector can thus be pulled back evenly and preloaded via the two tension devices. Accordingly, two tension shafts may also be provided, which has also proven to be advantageous with regard to the release of the ejector via the release device described in more detail below.

Furthermore, it has proven advantageous for the tension shaft to have a tension segment that is connected to the tension shaft in a rotationally fixed manner. This connection allows the tension segment to rotate in

sync with the tension shaft. The tension segment can be designed as a gear ring with a circumferential extension of 90 degrees. As will be described in more detail below, a corresponding quarter gear ring is sufficient to tension the ejector.

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According to a further advantageous embodiment of the device, it is proposed that the tension device has a tension chain that engages with the tension segment so that the tension chain can be moved by rotation of the tension shaft. The tension chain can be placed over the tension segment and connected to it in a form-fitting manner. The tension chain and the tension segment can thus be connected to each other in the manner of a pinion-chain connection. Thus, a rotary movement of the tension shaft relative to the catching device can be converted into a linear movement of the tension chain relative to the catching device. The tension chain can be connected at one end in particular to the ejector or to a protruding area of the ejector. The ejector can thus be moved into the tension shaft via the tension chain. The ejector can thus be automatically pulled backwards against the spring when the catching device is moved. The tension chain can be connected at the opposite end to a spring which ensures that the tension chain does not slip off the tension pinion but can be moved reliably via the tension pinion. The length of the tension chain can be dimensioned such that it is reliably in contact with the tension segment both in the ejection position and in the catch position.

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An advantageous further development of the invention provides that the ejector can be held in the tension position by a retention device. Once the ejector has been tensioned by the tension device and has reached the tension position, it can be held or fixed in the tension position by the retention device. In this respect, it is not necessary for the tension

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device to hold the ejector continuously in the tension position. It is advantageous if the retention device is designed as a latching device which holds the ejector in the tension position via a latching connection. By means of a corresponding latching connection, the retention device can
 5 interact positively with the ejector and thus prevent it from moving. For fixation, the latching device can latch into the ejector and thus prevent it from moving. Alternatively, however, it is also possible for the ejector to latch into the retention device or to latch behind it.

10 With regard to the retention device, it has also proven advantageous if it is designed in such a way that it can be moved into the position holding the ejector by means of a movement of the ejector. This embodiment allows the ejector to be automatically held in the tension position by its movement, so that no additional control is required for the retention de-
 15 vice. Rather, the ejector can be held in the tension position purely passively in the sense of self-locking, and no additional drive is required to move the retention device.

According to a structurally advantageous further development of the in-
 20 vention, it is proposed that the retention device be designed as a rocker, in particular a self-locking rocker. When the ejector is pulled into the tension position, it can actuate the rocker, causing one end of the rocker to swing into the trigger to hold it. This corresponding holding end can be hook-shaped. The opposite end can be arranged in the movement
 25 path of the trigger so that the trigger hits this end when it is moved into the tension position and pushes it out of the movement path. This activates the rocker, and the other end swings into the trigger and secures it. The axis of rotation of the retention device or rocker can be arranged in a radial direction outside the movement path of the ejector.

According to an advantageous further development, it is proposed that a snap fastener be provided which prevents movement of the cartridge case in the catch position. Furthermore, the snap fastener can also prevent unintentional movement of the ejector, for example, in the event of a malfunction of the retention device. The snap fastener can extend into the interior of the catching device, thereby preventing movement of the cartridge case or the ejector. The snap fastener can be positioned at a certain distance from the ejector so that there is sufficient space between the snap fastener and the ejector for the cartridge case. The snap fastener can prevent the cartridge case from moving unintentionally when the catching device is moved into the ejection position.

The snap fastener can be designed in such a way that it allows the cartridge case to pass in one direction, particularly in the tension direction, but prevents movement in the opposite direction. This also prevents the ejector from moving over the snap fastener in the ejection direction, provided that it protrudes into the interior of the catching device. The snap fastener can be designed as a spring-loaded ramp which, when contacted in the tension direction, automatically deflects, for example, under the force of a spring, whereas contact in the opposite direction does not cause the snap fastener to move. The snap fastener can be arranged at a distance from the retention device in the axial direction. In particular, the snap fastener can be arranged in the tension direction in front of the retention device.

Furthermore, it has proven advantageous to provide a release device for automatically releasing the ejector in the ejection position. The release device can be used to release the ejector so that it can be driven forward in the ejection direction by the spring and accelerate the cartridge case accordingly. The ejector can be released by releasing the retention

device. For this purpose, the release device can release the connection between the retention device and the ejector, for example by moving the retention device, in particular by pivoting it. When a tensioned release device is released, it can be accelerated together with the case by
5 the spring in the ejection direction. Due to the automatic release, no separate drive or external intervention is required for the release; rather, the release can be forced by rotating the tension shaft. In this respect, the release device can also be actuated by a movement of the catching device and the ejector can be released by a movement of the
10 catching device.

Furthermore, it has proven advantageous if the retention device can be secured in the position holding the ejector via the release device. If the retention device is secured accordingly, it cannot be moved, so that
15 movement of the ejector and unintentional movement due to the preload force of the spring can also be reliably prevented. When the release device is released, the retention device can be released and moved into the position that releases the ejector by the preload of the ejector. This allows the ejector to spring forward and eject the cartridge case.

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Furthermore, it has proven advantageous if the retention device can be moved into the release position via the ejector. In this respect, the retention device can be designed not only to be self-locking, but also self-releasing. The ejector can have an engagement contour into which the
25 retention device or one end of the retention device can engage to hold the ejector. The contour can be designed in such a way that, due to the preload of the ejector in the ejection direction, it tends to move or pivot the retention device into the release position. In this respect, the ejector can only be held in the tension position by the release device.
30 When the release device releases the retention device, the retention

device can be pivoted into the release position by the ejector itself. Advantageously, the retention device can therefore only hold the ejector in the tension position in conjunction with the release device. Furthermore, the retention device can also be preloaded into the position that
5 releases the ejector, for example by means of a spring.

In terms of design, the release device can have a retaining bolt that can be moved in the ejection direction. When the retention device is moved by the ejector, the retaining bolt can engage behind the retention de-
10 vice or engage in it when the retention device has reached its position holding the ejector. The retaining bolt can be preloaded into the position securing the retention device. By pulling the retaining bolt or by moving the retaining bolt in the tension direction, the securing of the retention device can be released and the ejector can thus be released. The
15 retaining bolt can extend through the bottom of the catching device and thus be accessible from outside the catching device.

Furthermore, it has proven advantageous for the release mechanism to have a release carriage for releasing the ejector. The release carriage
20 allows the retention device to be released and the ejector to be released. The release carriage can be arranged outside the catching device so that the space available inside the catching device is not impaired by it. It is advantageous for the release carriage to be guided on the outside of the catching device and for it to be able to be moved linearly in the
25 tension direction, i.e., pulled backward, to release the ejector. The retaining bolt can be movable via the release carriage. In terms of design, the retaining bolt can be passed through an opening in a section of the release carriage extending parallel to the bottom of the catching device and connected at the end to a protruding element extending in the ra-
30 dial direction. This can prevent the retaining bolt from slipping through

the opening of the release carriage in the ejection direction. Instead, the retaining bolt can be moved backwards by the release carriage when the release carriage and the protruding element come into contact. The protruding element can rest flat against the retaining bolt in the area
5 around the opening.

With regard to the release device, it has proven advantageous if it can be automatically released by a movement of the catching device. In this respect, no separate drive is required for releasing; instead, when the
10 catching device has reached the ejection position, the cartridge case can be ejected automatically. For this purpose, the release carriage can be moved automatically to the rear when the ejection position is reached, thereby releasing the ejector. The release mechanism or the release carriage can be positively coupled to the catching device for this purpose.

15 With regard to automatic releasing, it has proven advantageous for the release device, in particular the release carriage, to be coupled to the tension shaft. When the catching device is swung up or moved from the catch position to the ejection position, the tension shaft can rotate relative to the catching device and thus also relative to the release device.
20 This relative movement can cause the release carriage to move backward in or shortly before reaching the ejection position, so that when it reaches the ejection position, it has been moved backward far enough that the retention device is released and the ejector can be moved in
25 the ejection direction. From a design perspective, a cam can be arranged on the tension shaft which can move the release carriage backwards when the tension shaft is rotated. The tension shaft can thus be coupled to the release carriage via the cam in such a way that the release carriage releases the retention device when the ejection position is
30 reached, so that the ejector is released automatically.

Unlike when the catching device is swung down, i.e., when it moves from the catch position to the ejection position, in which the ejector is moved in the tension direction against the force of the spring, no forced
5 coupling with the ejector or with the tension device can be provided when moving from the catch position to the ejection position. Instead, the tension segment can have a recess, e.g., of 90 degrees, which decouples the tension device when the catching device is moved from the catch position to the ejection position. In this respect, when moving to
10 the ejection position, there can only be a coupling between the tension shaft and the release device or the release carriage.

According to an advantageous further development of the invention, it is provided that the release carriage is movable against the force of a
15 spring, in particular in the tension direction. A corresponding pulling movement can thus tension the spring so that the release carriage is preloaded in the opposite direction. In terms of design, the spring can be designed as a drawstring, in particular one that is elastically deformable, which is tensioned when the release carriage is pulled back for release.
20 It can be provided that two drawstrings are provided per release carriage, which are advantageously arranged in the front part of the respective release carriage.

Furthermore, it has proven advantageous if the snap fastener can be
25 moved via the release device. For this purpose, the snap fastener can be coupled to the release carriage so that when the release carriage is pulled back, it swings out of the interior of the catching device, thus clearing the way for the ejector and the cartridge case.

Furthermore, it has proven advantageous to provide several retention devices so that the ejector can be held in the tension position not only at one point but at several points around its circumference. In practice, three retention devices arranged evenly around the circumference have proven effective. Each retention device can be assigned a release device, so that several, in particular three, release devices can be provided accordingly. In order to ensure simultaneous release of all retention devices so that there is no unilateral load on the ejector, the individual release carriages can be connected to each other. For this purpose, the release carriages can be connected to each other, for example via a release coupling element, in particular a ring-shaped release coupling element. The release coupling element can be arranged on the rear outer side of the bottom of the catching device and can be movable together with the release carriages. Thus, when only one release carriage is moved, this movement is also transmitted to the other release carriages via the release coupling element, ensuring simultaneous release. The various release carriages can thus be movement-coupled to each other.

The release coupling element may have two projections at the lower end, e.g., in the form of ears. The cams of the two tension shafts can come into contact with the projections shortly before reaching the ejection position and then, when transferring to the ejection position, push the release coupling element backwards in the tension direction. Thus, by rotating the tension shaft, all the release devices provided can be actuated together by means of the release coupling element, and the ejector can be reliably released.

Furthermore, with regard to the aforementioned task, a vehicle, in particular a military land vehicle, is proposed with a weapon and a device arranged in the catch position behind the weapon, wherein the device

can be designed in the manner described above. It is advantageous for the device, or in particular the catching device, to be arranged on the weapon and in this respect to be weapon-sided. The catching device can thus move together with the weapon so that, for example, it does not
 5 have to be moved out of the weapon's path of movement when the weapon recoils. Rather, the device or catching device can recoil together with the weapon.

The vehicle may have a hull and a turret arranged to rotate relative to
 10 the hull, whereby the weapon and the device may be arranged in the turret of the vehicle. The turret may have a closable opening through which the cartridge cases of the projectiles fired by the weapon can be ejected from the vehicle via the device. In the ejection position, the device or the catching device for this purpose may be arranged in the area
 15 of the opening.

Further details and advantages of the invention will be explained in more detail below with reference to an exemplary embodiment shown in the schematic drawings. These show:

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Fig. 1a-c a device for catching and ejecting a cartridge case in a catch position in different views;

Fig. 2a-c the device in an ejection position in various views;

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Fig. 3a, b Perspective detail views of the device, in particular with regard to a catching device and a tension device;

Fig. 4 a - c Sectional views of the catching device, showing an ejector, a holding device, and a release device in various positions.

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When firing large-caliber projectiles from a tube weapon on a military vehicle, a cartridge case in the form of the cartridge base often remains
5 in the weapon 100. Before the next projectile can be fired, the cartridge base must first be removed from the weapon 100, for which purpose it is ejected rearward from the weapon 100. Behind the weapon 100, a device 10 is arranged to catch the cartridge base, with which the cartridge base can also be ejected directly from the vehicle after being caught.

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The core of the device 10 is a cup-shaped catching device 1 with an ejector 2 arranged inside it. The catching device 1 can be moved back and forth between a catch position A behind the weapon 100 and an ejection position W, which is pivoted upward relative to it, using a
15 mechanism described in more detail below. In the catch position A, a cartridge base ejected from the weapon 100 can be caught in the catching device 1. The catching device 1 can then be pivoted to the ejection position W and the cartridge base can be ejected from the catching device 1 and also from the vehicle via the linearly movable ejector 2.

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Only one common drive is required to move both the catching device 1 and the ejector 2 in order to eject the cartridge base from the vehicle. This is made possible by the fact that the individual components of the device, which are described in more detail below, are mechanically coupled to each other so that the movement of the catching device 1 via the
25 drive can initiate the movement of all other components. In particular, the ejector 2 is coupled to the catching device 1 in such a way that when the catching device 1 moves from the ejection position W to the catch position A, it is automatically moved down into a tension position S, so
30 that the ejector 2 then only needs to be released later when the

catching device 1 has been moved back to the ejection position W. The individual components of the device 10 will now be described in more detail below.

- 5 The catching device 1 essentially consists of two areas arranged one behind the other in the axial direction, namely a catching area 1.1 and a catch area 1.2. The catching area 1.1 is located in the catch position A as close as possible to the weapon 100 or one end of the weapon barrel and ensures that the base of the fired cartridge can be caught. The
- 10 catching area 1.1 consists of two cylindrical sections opposite each other with respect to the longitudinal axis of the catching device 1, which are spaced apart from each other in the circumferential direction so that openings of equal size are arranged between the two sections on both sides. This can also be clearly seen in the illustrations in Figs. 2a and 2b,
- 15 for example.

- A catch area 1.2 is arranged in the axial direction behind the catching area 1.1, in which the ejector 2 is guided in a linearly movable manner and in which the ejected cartridge base can be received. In the catch
- 20 position A shown in Figs. 1a to 1c, the ejector 2 has already been moved rearward into the tension position S by means of the tension device 5, which will be explained in more detail below, against the force of a spring package consisting of several springs 5.1. Fig. 4c shows the ejector 2 located in the rear part of the catching device 1. It can also be
 - 25 seen that the springs 5.1 arranged between the ejector 2 and the bottom 1.21 of the catching device 1, which closes off the catch area 1.2 towards the rear, are compressed, so that the ejector 2 is preloaded in the ejection direction F and is accelerated forward in the ejection direction F by the springs 5.1 together with the cartridge base when the ejector 2
 - 30 is released. In order to hold the ejector 2 in the tension position S, a

retention device 7 is provided, which is described in more detail below and which can be released via a release device 6 to release the ejector 2.

- 5 Both the catching area 1.1 and the catch area 1.2 have a free diameter that is essentially adapted to the cross-section of the case head to be received, so that the essentially disc-shaped case head can rest as fully as possible on the circular surface of the ejector 2 and be accelerated evenly. When catching the cartridge base, the catching device 1 is initially aligned with the gun barrel, which corresponds to the position shown in Figs. 1a to c, which is essentially horizontal. The alignment of the catching device 1 in the catch position A is therefore also dependent on the elevation angle of the weapon 100. In this position, the ejector 2 is already retracted and is in the tension position S. As can be seen in Fig. 4c, the caught cartridge base then lies in front of the ejector 2 within the catch area 1.2 of the catching device 1.

- In a next step, the catching device 1 is then moved or swung up from the catch position A to the ejection position W, as can be seen by comparing the illustrations in Figs. 1a - c with Figs. 2a - c. During this movement, the ejector 2 does not move, so that the cartridge base is also not moved relative to the catching device 1. During the movement between the catch position A and the ejection position W, the catching device 1 is moved both translationally and rotationally. This movement is initiated by the trapezoidal linkage 3, which can be clearly seen in the illustrations in Figs. 1a and 2a, for example.

- The trapezoidal linkage 3 essentially consists of two rods 3.1, 3.2 of different lengths arranged parallel to each other in the catch position A. These rods 3.1, 3.2 are mounted on one side in a pivotable manner on a

plate-shaped mounting element 4, which is coupled to the recoil part of the weapon 100. In this respect, the entire catching device 1, together with the trapezoidal linkage 3 and the mounting element 4, moves back together with the weapon 100 when a projectile is fired.

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At the opposite end, the rods 3.1, 3.2 are pivotably connected to a lever 3.3, which in turn is firmly coupled to the catching device 1. The distance between the two rods 3.1, 3.2 is smaller at the lever end than at the mounting element end. These different distances, in combination with the different rod lengths, mean that when the catching device 1 moves from the catch position A to the ejection position W, it is not only pivoted upwards, but also raised. This is because the upper rod 3.2 is slightly longer than the lower rod 3.1, so that when the lever 3.3 and thus also the catching device 1 are swung up, i.e. when moving from the catch position A to the ejection position W, they are tilted backwards so that the cartridge base can be ejected diagonally upwards from the vehicle. When swinging down, i.e. when moving from the ejection position W to the catch position A, the catching device 1 is then tilted in the opposite direction. This means that the angle between the ejection direction F and the horizontal also changes during movement, as can be seen, for example, in the illustration in Fig. 2b.

To ensure that the catching device 1 remains reliably positioned behind the weapon 100 when the weapon recoils and does not move unintentionally, the upper rod 3.2 is locked in the catch position A in a locking device 8 arranged on the mounting element 4. The locking device 8 is essentially a U-shaped receptacle, which not only acts as a stop but also prevents lateral movement of the rod 3.2 and thus also of the catching device 1. In addition, the locking device 8 can be used, for example by means of a cross pin, to completely prevent the rod 3.2 from moving,

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which is useful, for example, during fast marching when the weapon 100 is not in use but large vertical accelerations can occur due to uneven ground. This also prevents upward movement.

5 A drive with a lifting cylinder, not shown in detail in the illustrations, is now provided to drive the catching device 1 or the trapezoidal linkage 3. The lifting cylinder engages with a laterally protruding coupling bolt 3.4 on the lower rod 3.1 and can pivot the lower rod 3.1 upward and downward, thereby initiating the movements of the catching device 1 de-
 10 scribed above. The drive is not located on the mounting element 4, but rather on the weapon 100, so that the reaction forces when a projectile is fired do not act on the drive. To solve this problem in terms of design, the drive can engage with the coupling bolt 3.4 via a jaw connection, which allows relative movement between the trapezoidal linkage 3 or
 15 the rod 3.1 and the drive. When the weapon recoils, the coupling bolt 3.4 thus detaches itself from the drive or from the jaw of the drive. When the coupling bolt 3.4 returns, it then moves back into the jaw of the drive automatically, so that in the next step, movement of the catching device 1 can be initiated again via the drive.

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To ensure that the catching device 1 moves reliably behind the weapon 100 and that certain forces can also be reliably absorbed, the catching device 1 is not only coupled to the weapon 100 via a trapezoidal linkage 3, but two trapezoidal linkages 3 are provided, which are arranged on
 25 opposite sides. This can be seen, for example, in the perspective side view of Fig. 1a, but also in the top view of Fig. 1c. The two trapezoidal linkages are identical in design, so reference is made to the above. In order to enable uniform movement, corresponding drives may be provided on both sides of the weapon 100 or the catching device 1, but no further
 30 drives are required to operate the device 10.

The lower rod 3.1 is connected at its upper end to a tension shaft 5.2 extending transversely to the rod 3.1, which cannot be moved relative to the rod 3.2. The end of the tension shaft 5.2 can be clearly seen, for example, in the illustrations in Figs. 3a and 3b. By coupling the rod 3.1 to the tension shaft 5.2, the tension shaft 5.2 moves or rotates relative to the catching device 1 both when the catching device 1 is swung up and when it is swung down. A tension segment 5.3 designed as a pinion is arranged on the tension shaft 5.2, which is connected to the tension shaft 5.2 in a rotationally fixed manner and which therefore also rotates relative to the catching device 1 when the catching device 1 moves. The tension segment 5.3 is in contact with a tension chain 5.4, which is guided over the individual teeth of the tension segment 5.3, so that a rotational movement of the tension segment 5.2 relative to the catching device 1 is converted into a relative linear movement via the tension chain 5.4.

As can be seen, for example, from the illustrations in Figs. 3a and 3b, the ejector 2 has protruding areas 2.1 that extend laterally in the radial direction and pass through lateral recesses 1.3 in the catching device 1 or in the catch area 1.1. Outside the catch area 1.1, these protruding areas 2.1 are guided on a guide rail 1.4, which extends in the ejection direction F or in the tension direction P, so that the ejector 2 can be moved back and forth in a linear direction in the catching device 1, guided by the guide rail 1.4.

The laterally protruding projection areas 2.1 are now connected to the tension chain 5.4 in the outer area, so that the ejector 2 can be moved or pulled backward via the tension chain 5.4. The illustration in Fig. 4a shows the ejector 2 initially in the front end position, in which a

cartridge base has just been ejected and in which the catching device 1 is in the ejection position W. In this position, the tension chain 5.4 is basically unwound from the tension segment 5.3 and is only in contact with the tension segment 5.3 with its rearmost chain links. In this position,
 5 the tension chain 5.4 thus extends parallel to the guide rail 1.4 and the projection area 2.1 rests against a damper 1.5 at the end of the guide rail 1.4.

If the catching device 1 is now moved from the ejection position W to
 10 the catch position A, the tension shaft 5.2 rotates and the ejector 2 is moved backwards in the tension direction P via the tension chain 5.4 against the force of the spring 5.1 until it has reached the tension position S in the catch position A. The corresponding tension position S, in which a cartridge base can then be received in the catch area 1.2 of the
 15 catching device 1, can be seen in the illustration in Fig. 4c.

In order to hold the ejector 2 in the tension position S, a retention device 7 is provided, which is designed in the manner of a rocker and engages in an engagement contour 2.2 of the ejector 2 in order to hold it in
 20 the tension position S. Due to this positive connection between the retention device 7 and the ejector 2, the ejector 2 does not move despite the preload of the springs 5.1 pushing it in the ejection direction F, but is fixed in the tension position S. The retention device 7 can be seen in the sectional view shown in Fig. 4c. In order to hold the ejector 2 as
 25 evenly as possible around its circumference, three individual retention devices 7 are provided, which are arranged evenly around the circumference of the catching device 1 or the catch area 1.2. Due to the cross-sectional views, only one of the three retention devices 7 can be seen in each of the illustrations in Figs. 4a to 4c.

Only when the catching device 1 has been moved from the catch position A to the ejection position W can the retention device 7 be swung out of the contour or out of the engagement contour 2.2 of the ejector 2, so that the ejector 2 is then accelerated in the ejection direction F to eject the cartridge base. In doing so, the ejector 2 shoots forward in a linear direction in the catch area 1.1 until the lateral projection areas 2.1 have reached the end of the guide rail 1.4 and are slowed down in the end position by the damper 1.5. The cartridge base then flies out of the vehicle through the catching area 1.1 due to its inertia.

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No additional drive is required for the actuation device of the retention device 7 so that it holds the ejector 2 in the tension position S; instead, the device 10 is designed to be self-locking. This is achieved by designing the rear end of the retention device 7 to protrude into the catch area 1.2 and into the path of movement of the ejector 2, so that when the ejector 2 moves in the tension direction P, it comes into contact with the rear part of the retention device 7. When contact is made, the end of the retention device 7 that comes into contact with the ejector 2 is then pushed radially outwards by the ejector 2 out of the movement path of the ejector 2. Due to the rocker-shaped embodiment of the retention device 7, this causes the front end of the retention device 7 to be moved radially inwards and thus swung into the engagement contour 2.2 of the ejector 2.

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Fig. 4b shows the position in which the ejector 2 contacts the rear part of the retention device 7. The ejector has therefore not yet fully reached the tension position S. With further movement in the tension direction, the retention device 7 is then pivoted as shown in Fig. 4c and the front end engages with the ejector 2. In this tension position S, the ejector 2 is thus fixed by the retention device 7 and can no longer be

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moved. In this respect, it is therefore not necessary to exert a continuous force on the ejector 2 via the tension chain 5.4 in order to hold it in the tension position S.

- 5 With regard to the center axis of the catching device 1, a snap fastener 7.1 is provided in the tension direction P in front of the retention device 7, which can be clearly seen in the illustrations in Figs. 4a to 4c. Just like the retention device 7, this snap fastener 7.1 is also present three times in total and distributed at equal circumferential distances from
10 each other. The snap fastener 7.1 can also protrude into the free cross-section of the catch area 1.2, as can be seen, for example, in the illustration in Fig. 4c. However, when the ejector 2 is moved in the tension direction P, the snap fastener 7.1 is retracted or folded in. The snap fastener 7.1 is designed in the manner of a ramp inclined in the tension direction S and arranged so as to be pivotable. Due to this embodiment,
15 the ejector 2 can be moved in the tension direction P over the snap fastener 7.1, for which purpose the snap fastener 7.1 is then pushed radially outward out of the path of movement via the ejector 2. However, when moving in the opposite direction, the snap fastener 7.1 is not auto-
20 matically swung away, but rather, due to its inclination, movement of the ejector 2 in the opposite direction is prevented. In this respect, the snap fastener 7.1 can also prevent unwanted movement of the ejector 2 in the ejection direction F and thus act as a kind of block.
- 25 In addition, the snap fastener 7.1 can also ensure that the cartridge base is in as flat contact as possible with the ejector 2 when the catching device 1 is moved from the catch position A to the ejection position W, and does not accidentally fall out of the catching device 1 or become
30 jammed, for example when driving over bumpy terrain. Rather, the axial distance between the snap fasteners 7.1 and the ejector in the tension

position S is dimensioned approximately so that the cartridge base is arranged between the snap fasteners 7.1 and the ejector 2 and is fixed in this position.

- 5 Before the ejector 2 can be accelerated in the ejection direction A, it is not only necessary to pivot the retention device 7 so that it no longer engages with the ejector 2, but the snap fasteners 7.1 must also be folded in and thus pivoted out of the path of movement of the ejector 2. In order to move both the retention device 7 and the snap fastener 7.1
- 10 accordingly, a release device 6 is provided, via which the ejector 2 can then be released to eject the cartridge base accordingly. The constructive embodiment and function of the release device 6 will be explained in more detail below with reference to the illustrations in Figs. 4a to 4c.
- 15 The release device 6 first has a retaining bolt 6.2 extending in the axial direction, which can engage behind the retention device 7 in the tension position S, so that the retention device 7 is prevented from moving and cannot be tilted into the position releasing the ejector 2. The retaining bolt 6.2 rests radially inside the rear end of the retention device 7,
- 20 blocking any movement of the retention device 7. This can be seen, for example, in the illustration in Fig. 4c.

- In order to pull the retaining bolt 6.2 backwards so that it no longer blocks the retention device 7 and the latter can be pivoted into the position in which it no longer holds the ejector 2, the retaining bolt 6.2 is
- 25 coupled to a release carriage 6.1, which can be used to move the retaining bolt 6.2 accordingly. The release carriage 6.1 is arranged on the outside of the catching device 1 so that it does not reduce the free space available inside the catching device 1. Accordingly, the release carriage
 - 30 6.1 can also be clearly seen in the perspective top views, e.g., in Fig. 1a

or 2a, but also in Figs. 3a and 3b. Since each retention device 7 is assigned a release device 6, three release devices 6 are also provided in the embodiment.

- 5 The release carriages 6.1 are guided in a linear direction on the outside of the catching device 1 and can thus be moved back and forth parallel to the central axis of the catching device 1. The release carriages 6.1 can be moved against the force of the drawstrings 6.5, which are also visible in the illustrations, so that these are tensioned or stretched when
10 the release carriages 6.1 are pulled back and preload the release carriages 6.1 forward, i.e., into the ejection position F. The retaining bolt(s) 6.2 are connected via a screw connection to an annular protruding element 6.3, which is located in the rear area and thus outside the catching device 1. The protruding element 6.3 is disc-shaped and rests
15 against a part of the release carriage 6.1 that runs parallel to the bottom of the catching device 1, so that pulling back the release carriage 6.1 also pulls back the retaining bolt 6.2, thereby releasing the retaining element 7.
- 20 At the same time, when the release carriage 6.1 is pulled back, the snap fastener 7.1 is also pivoted radially outwards, so that it is moved out of the path of movement of the ejector 2 and the path is thus cleared. When the release carriage 6.1 has been pulled back far enough that the retaining bolt 6.2 no longer prevents the retention device 7 from moving,
25 ing, the retention device 7 tilts backward so that the front end of the retention device 7 swings out of the ejector 2. Since the snap fasteners 7.1 have also been retracted, the ejector 2 can then be driven forward freely by the spring 5.1 and the cartridge base located in front of the ejector 2 can be ejected.

No separate drive is required to pull the release carriage 6.1 backward for release; instead, the release carriage 6.1 is also coupled to the tension shaft 5.2, so that a relative rotational movement of the tension shaft 5.2 leads to the movement of the release carriage 6.1 and thus also to the automatic release of the ejector 2 when the ejection position W is reached. In terms of design, the tension shaft 5.2 is equipped with a cam (not shown in the illustrations) which is arranged in such a way that it can pull the ejector slide 6.1 backwards shortly before the ejection position A is reached, so that the ejector 2 is then automatically released in the ejection position A.

To ensure that all existing release carriages 6.1 are actuated simultaneously or pulled backward, thereby releasing all three retaining elements 7 at the same time, the release carriages 6.1 are connected to each other via a release coupling element 6.4. The cams for moving the release carriages 6.1 therefore do not need to be in direct contact with the release carriages 6.1, but can instead move all release carriages 6.3 simultaneously via the release coupling element 6.4, thereby releasing the ejector 2. The Release coupling element 6.4 has two downwardly protruding ears 6.41 for this purpose, which can be seen from behind in the illustration in Fig. 3b. Each of the two tension shafts 5.2 can have a cam which, shortly before reaching the ejection position A when the catching device 1 is swung up from the front and thus basically in the tension direction P, presses against the ears 6.41 and thereby pulls the release coupling element 6.4 or the plurality of release carriages 6.1 backward in the same direction.

No additional drive is required to tension the ejector 2 via the tension device 5 or to release the ejector 2 via the release device 6; instead, both processes are initiated by a rotary movement of the tension shaft

5.2. The tension shaft 5.2 does not need to be actively driven either, but rather, due to the embodiment of the trapezoidal linkage 3, it is automatically rotated relative to the catching device 1 and thus also relative to the tension device 5 and the release device 6 when the catching device 1 moves. In this respect, movement of the catching device 1 automatically leads to the actuation device of the tension device 5, and thus also to the actuation device of the retention device 7 and finally also to the actuation device of the release device 6. All components can thus be moved and actuated solely by the drive of the trapezoidal linkage 3.

Reference markings:

	1	Catching device
	1.1	Catching area
5	1.2	Catch area
	1.21	Bottom
	1.3	Recess
	1.4	Guide rail
	1.5	Damper
10	2	Ejector
	2.1	Protrusion area
	2.2	Engagement contour
	3	Trapezoidal linkage
	3.1	Rod
15	3.2	Rod
	3.3	Lever
	3.4	Coupling bolt
	4	Mounting element
	5	Tension device
20	5.1	Spring
	5.2	Tension shaft
	5.3	Tension segment
	5.4	Tension chain
	6	Release device
25	6.1	Release carriage
	6.2	Retaining bolt
	6.3	Protruding element
	6.4	Release coupling element
	6.41	Ears
30	6.5	Drawstring

	7	Retention device
	7.1	Snap fastener
	8	Locking device
5	10	Device
	100	Weapon
	A	Catch position
	W	Ejection position
10	S	Tension position
	F	Ejection direction
	P	Tension direction

Patent claims:

1. Device for catching and ejecting a cartridge case, in particular a cartridge base, with a catching device (1) which can be moved between a catch position (A) and an ejection position (W), whereby the cartridge case can be caught in the catch position (A) in the catching device (1) and ejected from it in the ejection position (W) via an ejector (2),

5 characterized in that

10 that the ejector (2) can be automatically moved into a tension position (S) by a movement of the catching device (1) and can be automatically released when the ejection position (A) is reached.
2. Device according to claim 1, characterized in that the ejector (2)

15 is mechanically coupled to the catching device (1) in such a way that it is automatically moved into the tension position (S) when the catching device (1) moves from the ejection position (A) to the catch position (A).
- 20 3. Device according to one of the preceding claims, characterized in that the ejector (2) is linearly guided in the catching device (1).
4. Device according to one of the preceding claims, characterized by a trapezoidal linkage (3) for moving the catching device (1),

25 wherein the trapezoidal linkage (3) is connected on one side to the catching device (1) and on the other side to a mounting element (4).
5. Device according to claim 4, characterized in that the trapezoidal

30 linkage (3) for translational and rotational movement of the

catching device (1) has two rods (3.1, 3.2) of different lengths and a lever (3.3) connecting the two rods (3.1, 3.1) at their ends, wherein the lever (3.3) being firmly connected to the catching device (1).

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6. Device according to one of the preceding claims, characterized in that the catching device (1) has a lateral recess (1.3), wherein the ejector (2) has at least one protruding area (2.1) which extends through the recess (1.3), wherein the catching device (1) has a guide rail (1.4) extending in the ejection direction (F) for guiding the movement of the ejector (2), and wherein the protruding region (2.1) can slide on the guide rail (1.4) when the ejector (2) is moved.

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7. Device according to one of the preceding claims, characterized by a tension device (5) by means of which the ejector (2) can be automatically tensioned when the catching device (1.1) is moved from the ejection position (W) to the catch position (A), wherein a spring (5.1) is provided and wherein the ejector (2) can be moved against the force of the spring (5.1) by means of the tension device (5).

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8. Device according to claim 7, characterized in that the tension device (5) has a tension shaft (5.2) which is connected in a rotationally fixed manner to a rod (3.1) of the trapezoidal linkage (3) so that, when the catching device (1) moves between the catch position (A) and the ejection position (W), it rotates relative to the catching device (1).

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9. Device according to claim 8, characterized in that the tension shaft (5.2) has a tension segment (5.3) which is connected to the

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5 tension shaft (5.2) in a rotationally fixed manner, and wherein the tension device (5) has a tension chain (5.4) which is engaged with the tension segment (5.3) so that the tension chain (5.4) can be moved by rotation of the tension shaft (5.2) and wherein the tension chain (5.4) is connected to the ejector (2) for movement of the ejector (2) into the tension position (S).

10 10. Device according to one of the preceding claims, characterized in that the ejector (2) can be held in the tension position (S) by a retention device (7), wherein the retention device (7) is designed as a rocker.

15 11. Device according to claim 10, characterized in that the retention device (7) is designed in such a way that it can be moved into the position holding the ejector (2) by means of a movement of the ejector (2).

20 12. Device according to one of the preceding claims, characterized by a release device (6) for automatically releasing the ejector (2) in the ejection position (W).

25 13. Device according to claim 12, characterized in that the retention device (7) can be secured in the position holding the ejector (2) via the release device (6).

30 14. Device according to one of claims 12 or 13, characterized in that the release device (6) has a release carriage (6.1), wherein the release carriage (6.1) is coupled to the tension shaft (5.2) for automatic release of the ejector (2).

15. Vehicle, in particular a military land vehicle, with a weapon (100) and a device (10) arranged in the catch position (A) behind the weapon (100) according to one of the preceding claims.