CLAIMS

1. System for evacuating cartridges, applied to a firearm (1), said firearm comprising a breech (14), and a firing chamber (12) in which the projectile that will come out through a barrel (13) is fired;
said evacuation system comprising an evacuation tray (2), for receiving the cartridge following upon deflagration of an ammunition, and a movement mechanism (3), for moving said tray (2);
said system being characterized in that the movement mechanism (3) turns the evacuation tray (2) about an axis (X), parallel to the axis of the barrel (13) of the firearm (1), in a preset and appropriately cadenced way, passing from a first position, where the cartridge is received, to a second position, where the cartridge is expelled by the expulsion mechanism (5), and vice versa.

2. System according to claim 1, wherein the system for evacuating the cartridges comprises a safety mechanism for moving the evacuation tray (2) in the event of malfunctioning of the movement mechanism (3), thus preventing onset of damage consequent upon the impact of the tray (2) with the loading mechanism.

3. System according to claim 1, wherein the movement mechanism (3) comprises a movement actuator (31) for the evacuation tray (2), which acts, via a gear mechanism (32), on the tray (2) itself, in such a way that the movements of the tray (2) will be synchronized with the rest of the mechanisms implemented in the firearm (1).

4. System according to claim 3, wherein the movement mechanism (3) is preferably decelerated as it

approaches stroke end to prevent any impact and to reduce the oscillations of the evacuation tray (2).

5. System according to claim 1, wherein the evacuation tray (2) comprises a cartridge-retention device (22), for generating a signal of reception of the cartridge when the latter is in the tray (2).

6. System according to claim 1, wherein the evacuation tray (2) comprises a braking device (23), for decelerating the cartridge coming from the firing chamber (12) when it is entering the tray (2).

7. System according to claim 3, wherein, once the evacuation tray (2) has reached the second position, the cartridge contained therein is disengaged by the expulsion mechanism (5), which comprises a rigid tube (51), adapted for channelling the cartridge for its final expulsion, and at least one actuator (52), for thrusting the cartridge from the evacuation tray (2) towards the tube (51), via at least one thrust portion (521).

8. System according to claim 7, wherein the expulsion mechanism (5) comprises an anti-return device (53), including a blocking portion (531), for interposing itself within the tube (51), in the case where the cartridge returns towards the evacuation tray (2).

9. System according to claim 7, wherein in the passage from the second position to the first position of the evacuation tray (2), in the case where the loading mechanism is still performing its operating steps, the loading mechanism terminates its operating steps before the movement mechanism (3) causes return of the tray (2) to the first position to receive a new cartridge.

10. System according to claim 2, wherein the safety mechanism comprises at least one relief valve, comprised in an oleodynamic circuit connected to the actuator (31), which is activated, emptying said oleodynamic circuit, only in the case where the evacuation tray (2) is still in the first position when the loading mechanism reaches a given operating step, making the tray (2) idle in rotation about the pin (111).

CLAIMS

1. System for evacuating cartridges, applied to a firearm, said firearm comprising a breech, and a firing chamber in which a projectile to come out through a barrel having a barrel axis to come is fired; said evacuation system comprising an evacuation tray configured for receiving the cartridge following deflagration of an ammunition, and a movement mechanism configured to move said tray;

the movement mechanism turning the evacuation tray about an axis, parallel to the barrel axis of the firearm, in a preset and appropriately cadenced manner, passing from a first position where the cartridge is received, to a second position where the cartridge is expelled by an expulsion mechanism, and vice versa;

wherein the movement mechanism comprises a movement actuator for the evacuation tray, which acts via a gear mechanism on the tray, in such a way that the movement of the tray is synchronized with the rest of the mechanisms implemented in the firearm;

wherein, once the evacuation tray has reached the second position, the cartridge contained in the evacuation tray is disengaged by the expulsion mechanism, which comprises a rigid tube, adapted for channelling the cartridge for final expulsion of the cartridge, and at least one actuator configured for thrusting the cartridge from the evacuation tray towards the tube, via at least one thrust portion.

2. The system according to claim 1, wherein the system for evacuating the cartridges comprises a safety mechanism configured to move the evacuation tray in the event of malfunctioning of the movement mechanism, preventing onset of damage consequent upon the impact of the tray with the loading mechanism.

3. The system according to claim 1, wherein the movement mechanism is decelerated as the movement mechanism approaches stroke end to prevent impact and to reduce oscillations of the evacuation tray.

4. The system according to claim 1, wherein the evacuation tray comprises a cartridge-retention device configured for generating a signal of reception of the cartridge when the cartridge is in the tray.

5. The system according to claim 1, wherein the evacuation tray comprises a braking device configured for decelerating the cartridge coming from the firing chamber when the cartridge is entering the tray.

6. The system according to claim 1, wherein the expulsion mechanism comprises an anti-return device, including a blocking portion configured for interposing the anti-return device within the tube, in the case where the cartridge returns towards the evacuation tray.

7. The system according to claim 1, wherein in the passage from the second position to the first position of the evacuation tray, in the case where the loading mechanism is still performing the operating steps, the loading mechanism terminates the operating steps before the movement mechanism causes return of the tray to the first position to receive a new cartridge.

8. System for evacuating cartridges, applied to a firearm, said firearm comprising a breech, and a firing chamber in which a projectile to come out through a barrel having a barrel axis to come is fired; said evacuation system comprising an evacuation tray configured for receiving the cartridge following deflagration of an ammunition, and a movement mechanism configured for moving said tray;

the movement mechanism turning the evacuation tray about an axis, parallel to the barrel axis of the firearm, in a preset and appropriately cadenced manner, passing from a first position where the cartridge is received, to a second position where the cartridge is expelled by an expulsion mechanism, and vice versa;

wherein the system for evacuating the cartridges comprises a safety mechanism configured for moving the evacuation tray in the event of malfunctioning of the movement mechanism, preventing onset of damage consequent upon the impact of the tray with the loading mechanism;

wherein the safety mechanism comprises at least one relief valve, comprising an oleodynamic circuit connected to the actuator, which is activated, emptying said oleodynamic circuit, only when the evacuation tray is still in the first position when the loading mechanism reaches a given operating step, making the tray idle in rotation about a pin.