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DISCONNECTOR MEANS IN SELF-CHARGING FIREARMS

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The present invention refers to an arrangement in self-charging firearms with a reciprocating part to effect recharging, such part being constituted by the breech block, for example, and with disconnecter means, and by causing said arrangement, one of which disconnecter members is arranged to prevent the release of the hammer when it is cocked, as long as the breech block is moved out of its firing position, and the other disconnecter member being arranged to prevent the trigger, every time it has been pulled, i.e., locking, in the position of release, a sear released by the trigger and locking the hammer in cocked condition.

Similar devices are previously known, it is true, but hitherto they were of complicated construction, bulky and expensive in manufacture. Moreover, each disconnecter member would form a self-contained unit entirely independent of the other.

The present invention has for its object to provide a single disconnecter device having the same effect as that of the two above-mentioned disconnecter devices, while being simpler, less bulky and cheaper to manufacture than the latter.

Accordingly, the invention is principally distinguished by the fact that the disconnecter members consist of a single disconnecter device actuated by the part which is movable for recharging, said disconnecter device being for this purpose arranged to actuate a member arranged between the trigger and the sear, in a manner such that said member interrupts the connection between the sear and the trigger and remains in such position until the breech block has been returned into its firing position.

By then making the disconnecter device in the form of an arm pivotally arranged in the casing of the arm, said arm bearing with a portion thereof on the member arranged between the trigger and the sear, the disconnecter device is rendered very simple, and by causing it to be actuated by the part effective for recharging, during all or the majority of the positions of the latter at the movement of the breech block from the firing position, the advantage is obtained that the sear will be released immediately at the commencement of recharging for taking a position adapted for the locking of the hammer, and that the connection between the trigger and the sear remains interrupted, until the breech block has again taken its firing position upon completed recharging.

According to the arrangements described, the trigger, in spite of having been made inoperative through the interruption of the connection with the sear, is still movable to perform a firing movement. If it is desired to prevent even the latter movement, as long as the breech block does not take its firing position, it is possible to cause the disconnecter device to be actuated by a spring keeping the same raised out of touch with the member provided between the trigger and the sear when the breech block takes its firing position, so that a catch or the like arranged for this purpose on the disconnecter device will be located outside the path of movement of said member at firing while being depressed into this path at recharging so as to form a stopping means for said member, as the disconnecter device is rendered operative. Thus the advantage is obtained that the trigger on having returned into its initial position is stopped by the catch when another firing is tried, as long as the breech block does not take its firing position.

The invention is illustrated in a few embodiments in the accompanying drawings, wherein Fig. 1 shows a vertical section of a portion of a firearm provided with an arrangement according to the invention. Fig. 2 shows a plan view of Fig. 1 with some parts omitted. Fig. 3 is a vertical section on line III—III of Fig. 1, and Fig. 4 is a vertical section similar to Fig. 1 but showing the positions of the parts in the rearward reloaded position of the breech block. In the figures, I designates the action casing of the firearm and 2, 2' the inner and outer portions of the breech block. The inner portion 2 or the bolt is mounted slidably in the direction of length of the weapon in the outer portion 2' or the slide, and the rear end of bolt 2 is swingable up and down in the slide 2'. The sliding and swinging movement of the bolt 2 in the slide 2' is rather small and the bolt 2 follows the slide 2' during its reciprocating movements in the direction of length of the weapon. The slide 2' is thrown rearwards by actuation of the powder gases and after that movement it is thrown forwards in a known manner by actuation of the springs 28. When the bolt 2 and the slide 2' occupy their front positions, the bolt 2 is held depressed towards the action casing 1 by an inner inclined lateral projection (not shown) on the slide 2', which lateral projection cooperates with an inclined lateral projection on the bolt 2 in a manner such that the rear end of the bolt 2 will be depressed in front of an edge 25 (see Fig. 3) in the casing 1. The bolt 2 is now blocked by slide...
2' and the edge 25 during firing. After firing the slide 2' is thrown rearwards through the action of the powder gases and lifts then at first by means of a second inner inclined lateral projection on the slide, parallel with the first one, the rear end of said bolt 2 upwards over the edge 25 and takes the bolt 2 along with itself backwards, whereafter the spring 28 brings the slide 2' as well as the bolt 2 forwards again and blocking of the bolt 2 occurs in the front position by the aid of the slide 2' as just described, which slide, with its first-mentioned inner inclined lateral projection thereby depresses the rear end of the bolt 2 in front of the edge 25. During this movement of the breech block (the slide and the bolt) the weapon has in known manner been reloaded with a new cartridge.

The hammer 3 is actuated by the trigger 4 through the sear 5 and the trigger link 6. The hammer 3 is pivotally arranged about a shaft 7 in the casing 1 and is actuated by the mainspring 8. The trigger 4 is pivotally arranged about a shaft 9 in the casing 1 and is pivotally connected to the trigger link through a pin 10. The spring 11 returns the trigger into its initial position every time it has been pulled, and presses the trigger link upwardly against a stop surface of the action casing into position, when given a substantially longitudinal displacement by the trigger 4, to engage the sear. The sear 5 is pivoted about the shaft 12 which is mounted in the casing 1, and is kept pressed by a spring 13 towards its position adapted for the locking of the hammer. The trigger link actuates a beak 15 on the sear by means of an abutment 14. Designates the firing pin which is here mounted in the bolt 2.

The disconnector device is constituted by an arm 17 which is pivotally mounted in the casing 1 on the shaft 18. The arm 17 is provided with an angular arm 23 which is actuated directly by the slide 2' when the latter is moved out of its firing position. Through a spring 21 the arm 17 will be pressed upwards, so that, when the breech block takes the firing position, said arm will be located outside the path of movement of the trigger link 6. As soon as the breech block is moved from the firing position, the arm 17 will be depressed against the action of the spring 21, as shown in Fig. 4, and remains in this position, until the breech block has again assumed the firing position. The arm 17 will thus depress the trigger link 6 and interrupt the connection between the trigger and the sear. The sear is released and the connection is reestablished only after the breech block has returned into the firing position and the spring 21 has raised the arm 17.

Provided on the arm 17 is a catch 23 or the like which, when the arm 17 is in depressed position and the trigger has returned into its initial position, forms a latch for the trigger, inasmuch as the trigger link is stopped by said catch which has been brought through the depression into the path of movement of the trigger link. By this means a further disconnector is obtained against firing, as long as the breech block has not taken its firing position.

The arm 17 need not be a single one but may be double-armed, for example, and the place of interruption between the trigger and the sear need not have the location shown, but may be, for instance, between the trigger and the trigger link, in which case the trigger link should be pivotally connected with the sear and bear on the trigger and be adapted to be actuated by the latter through a catch.

What I claim is:

In a firearm, a reciprocating breech block, a hammer, a sear adapted to latch said hammer in cocked position, a trigger, means pivotally mounting said trigger in said firearm, a trigger link pivotally connected to said trigger and movable substantially longitudinally by said trigger to actuate said sear to release said hammer, a pivotally mounted arm actuated by said breech block when displaced from firing position to depress said arm to engage said trigger link and move the same out of position to actuate said sear and a projection on said arm moved upon depression of said arm into position to block movement of said trigger link by the trigger whereby the trigger cannot be pulled unless the breech block is in closed position.

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