Jan. 23, 1951 J. PHILLIPS ET AL 2,538,799

RELEASE MECHANISM FOR SEMIAUTOMATIC FIREARMS

Filed July 18, 1949

2 Sheets-Sheet 1

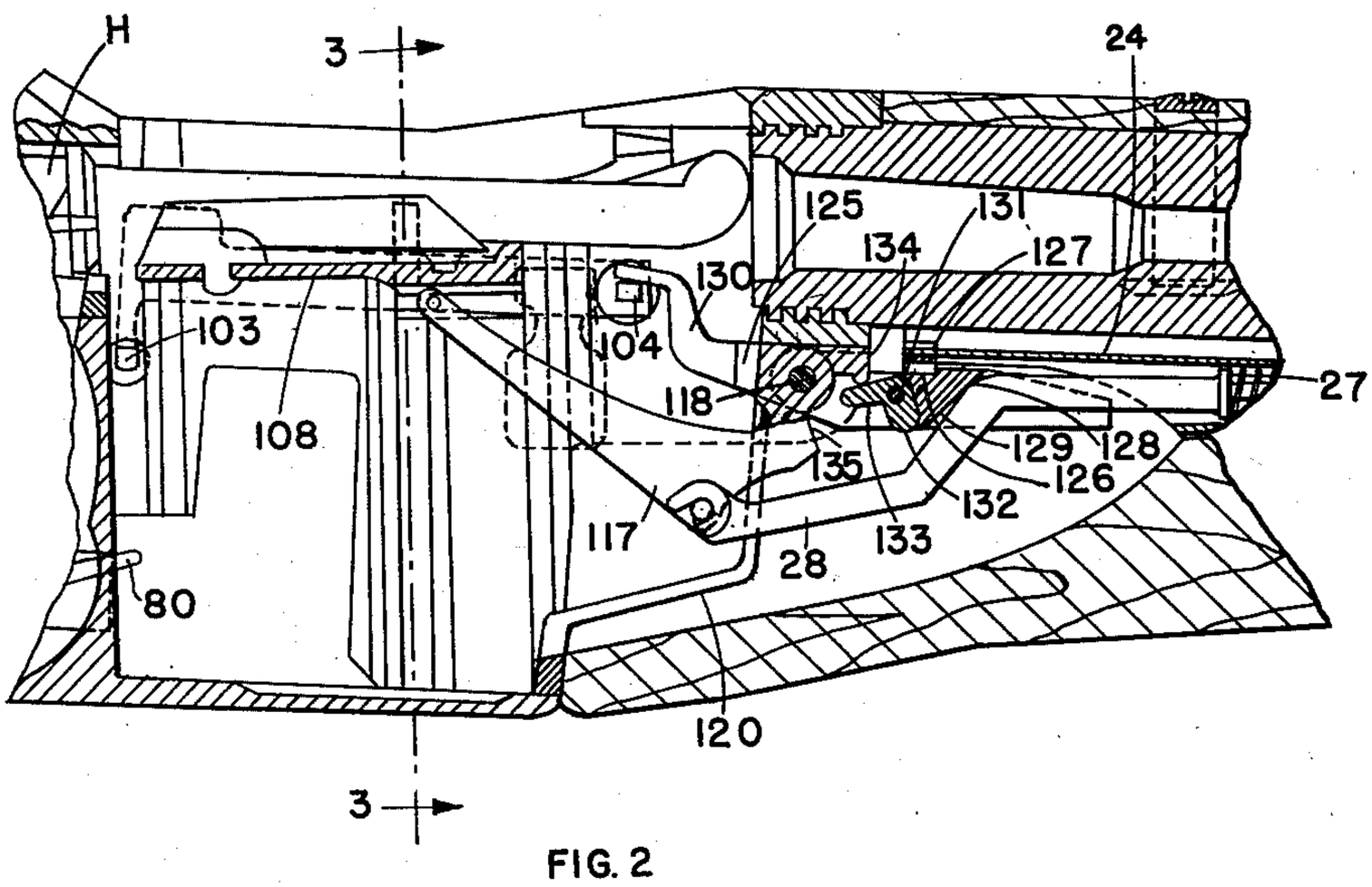

FIG. 2

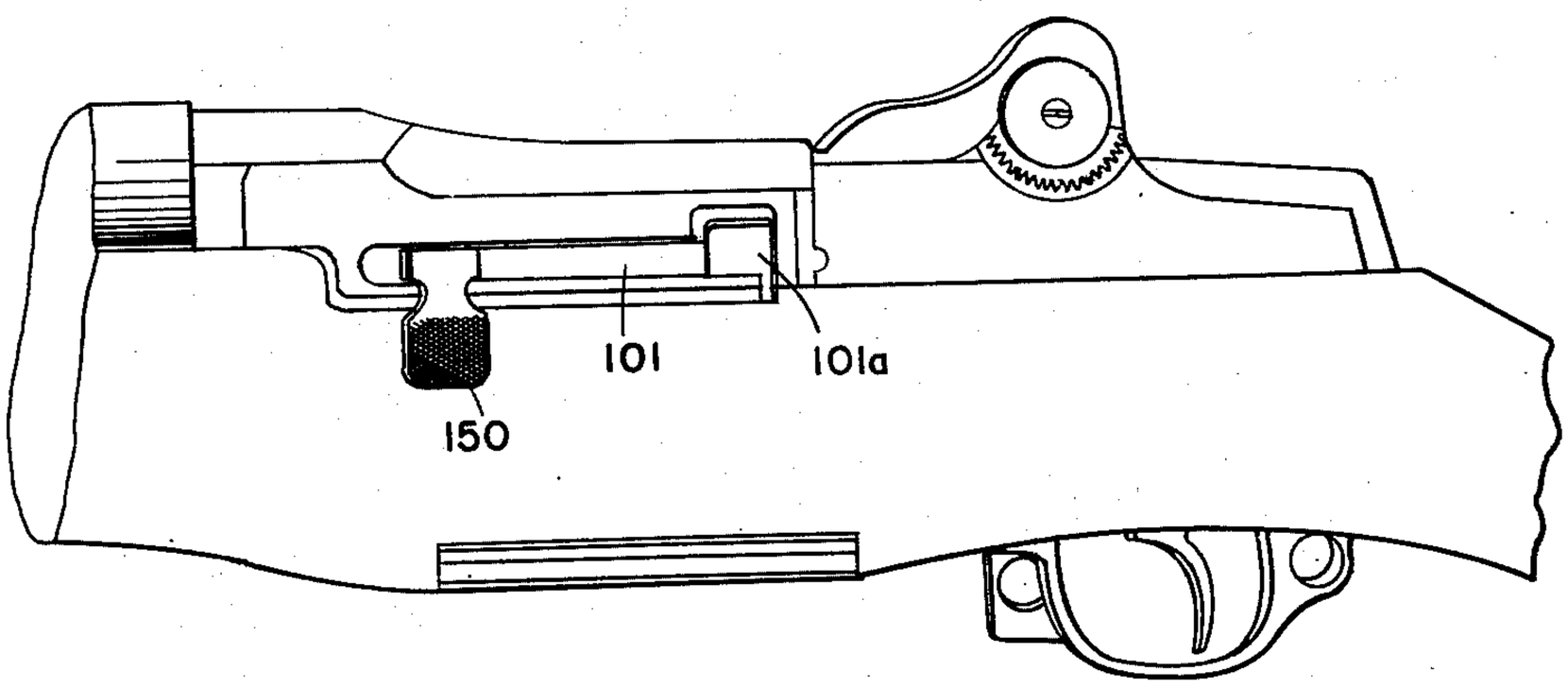

FIG. 1

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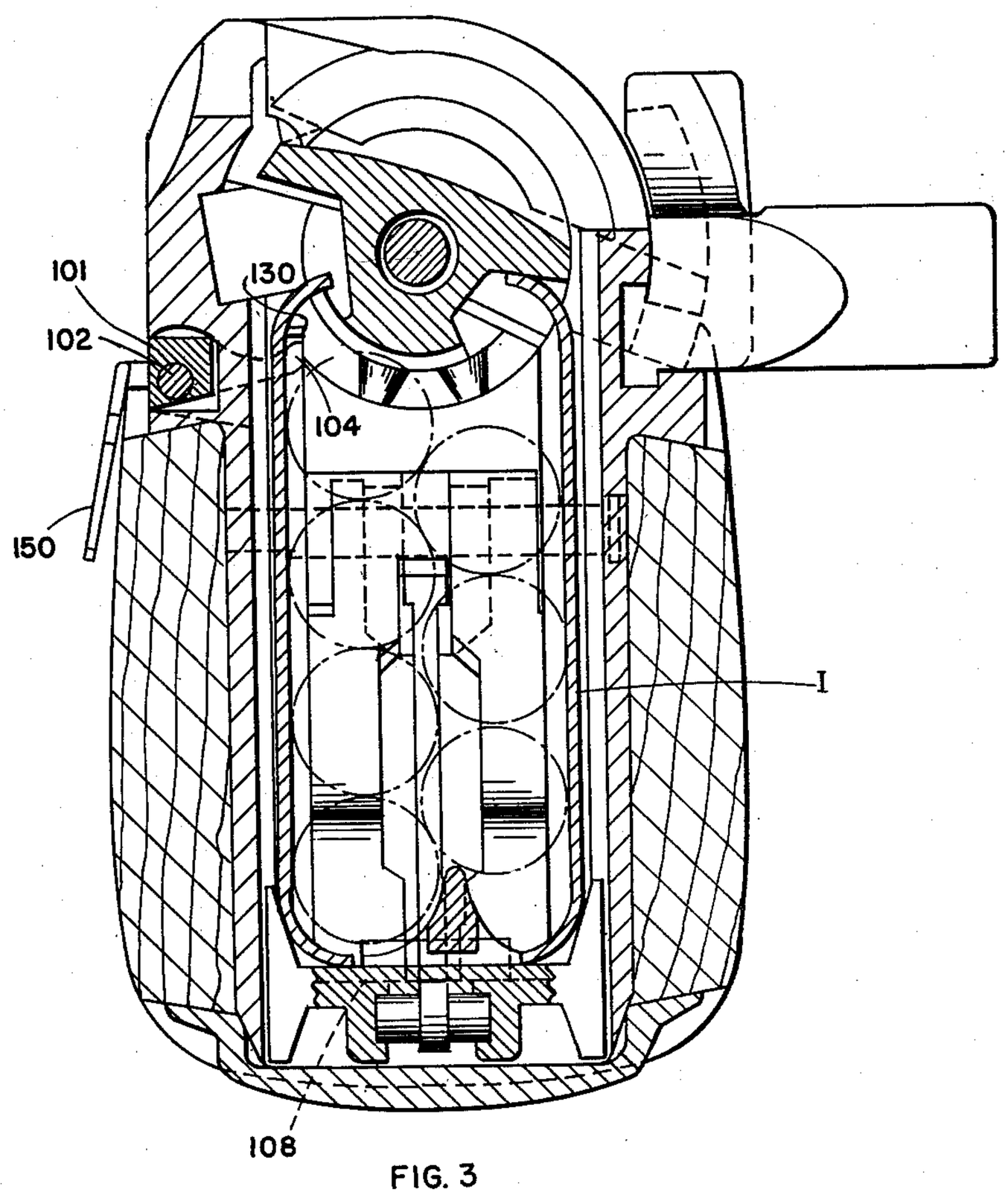

FIG. 3

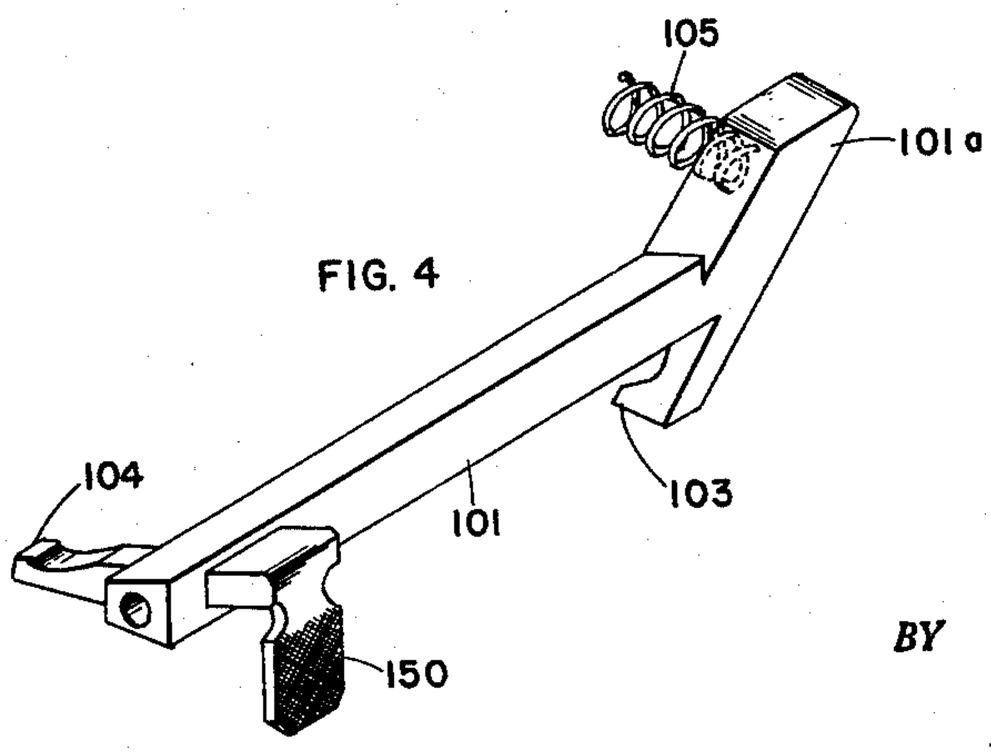

FIG. 4

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RELEASE MECHANISM FOR SEMIAUTOMATIC FIREARMS

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4 Claims. (Cl. 89—138)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

1

This invention relates to semi-automatic firearms and more particularly to an improved clip latch release for actuating operating rod catch mechanisms of the type used to limit bolt action and an example of which is disclosed in Letters Patent of the United States, No. 2,377,338 granted to J. C. Garand on June 5, 1945, and commonly known as the Garand rifle.

The Garand rifle is a gas operated semi-automatic rifle in which gas pressure acting on a piston forces back an operating rod that is linked to the bolt and serves to compress an operating rod spring, retract the bolt so as to open the breech and extract and eject the empty cartridge case. A new round then automatically slips into the chamber and the recoil spring closes the breech.

The bolt may be withdrawn manually when desired by rearward movement of an operating rod handle which projects from the side of the rifle. When the rifle is empty the bolt may be retained in retracted position by the operating rod catch mechanism.

In order to close the bolt it has heretofore been necessary while supporting the gun with one hand to momentarily retract the operating rod handle with the free hand and then with both hands occupied to insert a thumb into the breech and depress the magazine follower at the same time permitting the bolt to move forwardly about an inch over the end of the follower. With this accomplished, the operating rod handle is released and the thumb must be smartly removed before the relatively heavy operating rod spring snaps the bolt closed. The hazard of such operation, especially under field conditions, is obvious and considerable care and skill is required in order to avoid severe laceration of the hand.

In view of the foregoing, it is therefore an object of the present invention to provide means whereby the breech of a rifle may be closed without placing a finger in the path of the bolt.

Another object of the present invention is to provide a release of the above character which is simple in construction, positive in action and may readily be installed.

Other objects and attendant advantages will become apparent from the following description taken in conjunction with the accompanying drawings in which:

Fig. 1 is a fragmentary perspective view of the left side of the breech portion of a rifle embodying the device of the present invention;

Fig. 2 is a longitudinal section providing an enlarged inside view of the breech of a rifle embodying the present invention with bolt open and clip removed;

2

Fig. 3 is an enlarged vertical section taken along a line substantially corresponding to line 3—3 of Fig. 2 but with the bolt closed and a loaded clip in the magazine; and

Fig. 4 is an enlarged perspective view of a clip latch embodying the present invention.

In the drawings, the present invention is shown embodied in a semi-automatic gun of the Garand type disclosed in U. S. Patent No. 2,377,338. To simplify reference to that patent, the reference characters there used have been applied to corresponding parts of the present device.

Referring first to Fig. 2 showing the relative position of the pertinent parts of a Garand rifle when the magazine is empty, it will be noted that the bolt H may be held in retracted position by an operating rod catch mechanism to be more fully described later. The position of bolt H is controlled by the operating rod which in turn is held in bolt retracted position by an operating rod catch mechanism which includes a catch 125 pivotally mounted on pin 118 carried by a follower arm 117 and provided with a transverse lug 127 on the rear end of the operating rod 24 for latching the rod in retracted position. A follower mechanism associated with the aforementioned catch mechanism controls the position of catch 125 depending upon the relative position of the cartridge follower 108 in the magazine. When the last shot has been fired and the follower 108 raised to the position shown in Fig. 2 a shoulder portion 128 on follower rod 28 engages a cam surface 129 on catch 125 to urge the forward portion of the catch upwardly so that lug 127 will engage and be retained by notch 126 when the operating rod retracts.

Heretofore, the operating rod catch could be released and the bolt closed only by depressing the follower 108. This was done by inserting a new clip or, if it was desired to leave the chamber empty or to fire single shots only, it was necessary to manually depress the follower 108 by inserting the thumb or forefinger into the magazine with the above discussed hazard of bodily injury. In either case release of the catch was effected in the following manner: as the follower moved downwardly in the magazine, a shoulder 135 on the forward portion of arm 117 engaged a rearwardly extending arm 133 on a small accelerator lever pivotally mounted on pin 131 carried by catch 125. As arm 133 moved upwardly its upper surface engaged an extension 134 on bullet guide 120. Continued downward movement of the fol-

lower caused the arm 133 to fulcrum on extension 134 thereby moving pivot pin 131 downwardly and, as a consequence, catch 125 was rocked on pin 118 until lug 127 was released from slot 126. Operating rod 24 was then free to travel forward under the influence of an operating rod spring 27 drawing forward bolt H with it.

The clip latch release comprises an elongated lever member 101 shown in detail in Fig. 4 and is mounted for bodily movement around its longitudinal axis. This member is journaled on a pin 102 (Fig. 3) and has a depending clip engaging finger 103 (Figs. 2 and 4) affixed to its rear end which projects into the receiver for engagement with a notch in a clip positioned in the magazine. The finger 103 normally holds the clip in the magazine under the influence of a spring 105 acting on a thumb portion 101*a* of the latch. A second finger 104 on the front end of latch 101 laterally projects through an opening in the receiver for engagement with arm 130 on the rear end of catch 125 of the aforementioned operating rod catch mechanism. It will be seen from Fig. 2 that as the shoulder portion 128 on follower rod 28 engages the cam surface 129 on catch 125 the catch is rocked on pin 118. When this occurs the rearwardly extending arm 130 is moved downwardly to engage finger 104 thereby rocking latch 101 on pin 102 causing finger 103 to swing outwardly. This action releases the empty clip I (Fig. 3) and as the bolt retracts after the last cartridge is fired spring 80 forces the clip out of the magazine.

The improvement of the present invention comprises the addition to the clip latch 101 of an external depending thumb piece 150 preferably secured to the forward end thereof as shown in Figs. 3 and 4.

Referring once more to Figs. 2 and 3, it will be seen that as pressure is applied to thumb piece 150 the clip latch 101 rotates about pin 102 and finger 104 swings upwardly lifting arm 130 which is in contact with finger 104. This upward movement of arm 130 rocks catch 125 on pin 118 causing the forward portion of the catch to move downwardly a sufficient amount to release lug 127 from slot 126. As the release is effected the operating rod and bolt connected to it may now move forward under the tension of the operating rod spring to close the breech.

It will be noted that the present invention is particularly useful where it is desired to fire single rounds of ammunition with this type of gun instead of using the usual loaded clip. In such instances the present invention enables the operator to load single shots with great rapidity and safety since he no longer needs to insert his finger into the magazine to depress the cartridge follower after each shot.

The invention also facilitates the closing of the bolt during drill by eliminating unnecessary manipulation of the hands thereby enabling the operator to carry out the drill in a more military manner.

It should be understood, of course, that the foregoing disclosure relates to only a preferred embodiment of the invention and that numerous modifications or alterations may be made therein without departing from the spirit and scope of the invention as set forth in the appended claims.

The invention described herein may be manufactured and used by or for the Government of the United States of America for governmental purposes without the payment of any royalties thereon or therefor.

What is claimed is:

1. In a gun of the character described a receiver, a clip latch mechanism carried by the receiver, said latch mechanism including a finger projecting into the receiver; a bolt operating rod, a lug on said rod; a bolt operating rod catch having a notch adapted to receive the lug on the operating rod for holding the operating rod in retracted position; and a lever on said latch for moving said finger whereby said catch may be moved to disengage the lug from the notch to thereby release the operating rod.

2. In a gun of the character described a receiver, a clip latch mechanism carried by the receiver including a latch member mounted externally of the receiver, a finger integral with said member and projecting into the receiver; a reciprocable breech bolt in the receiver, a bolt operating rod, a lug on the rod; an operating rod catch mechanism including a catch having a notch to receive the lug on the operating rod for holding the rod in retracted position, an arm on said catch adjacent said finger; a lever on said latch for moving said finger and said arm whereby said catch may be moved so as to disengage the lug from the notch and thereby release the operating rod from the effect of the catch mechanism.

3. In a gun of the character described a receiver, a reciprocable breech bolt in the receiver, an operating rod connected to the bolt, a lug on said rod, resilient means for normally urging the bolt closed, an operating rod catch mechanism having a notch adapted to receive said lug to retain the bolt in retracted position, a latch operable to release the operating rod catch mechanism so that the bolt may be closed by said spring, the latch including a finger positioned adjacent the catch mechanism, and manually operable means to raise said finger to trip the catch and allow the spring to close the bolt.

4. In a gun of the character described a receiver, a reciprocable breech bolt in the receiver, an operating rod connected to the bolt for normally retaining the bolt retracted, a lug on said rod, an operating rod catch mechanism having a notch adapted to receive said lug, and a latch operable to release the operating rod catch mechanism so that the bolt may close, said latch including a thumb engageable portion which may be depressed to bodily rotate the latch about its longitudinal axis to thereby withdraw said lug from the notch.

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