

Jan. 27, 1931.

O. F. MOSSBERG

1,790,482

FIREARM

Filed May 16, 1929

2 Sheets-Sheet 1

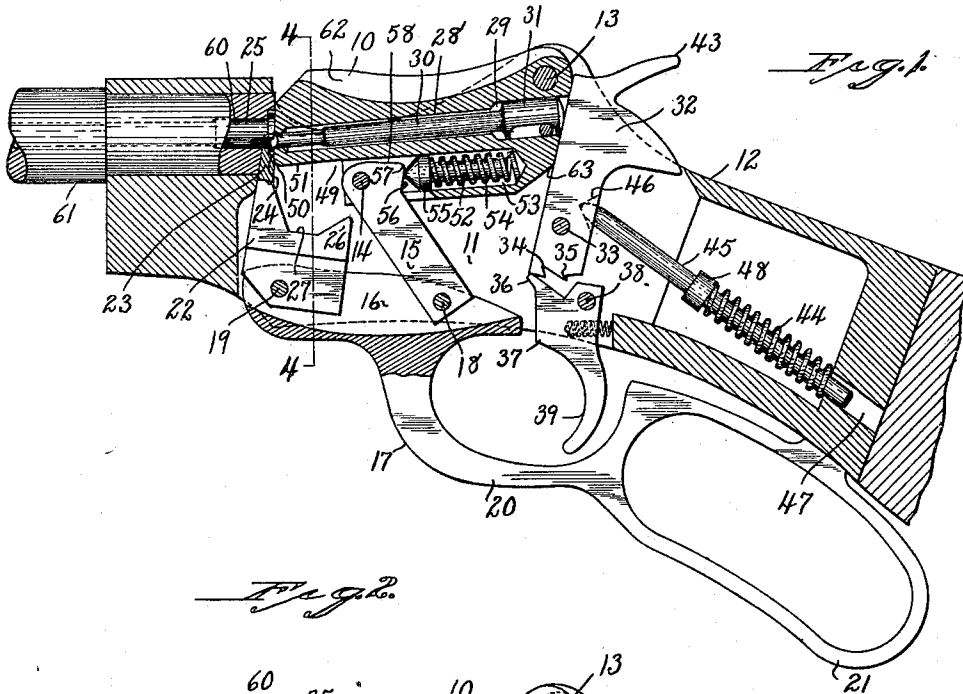
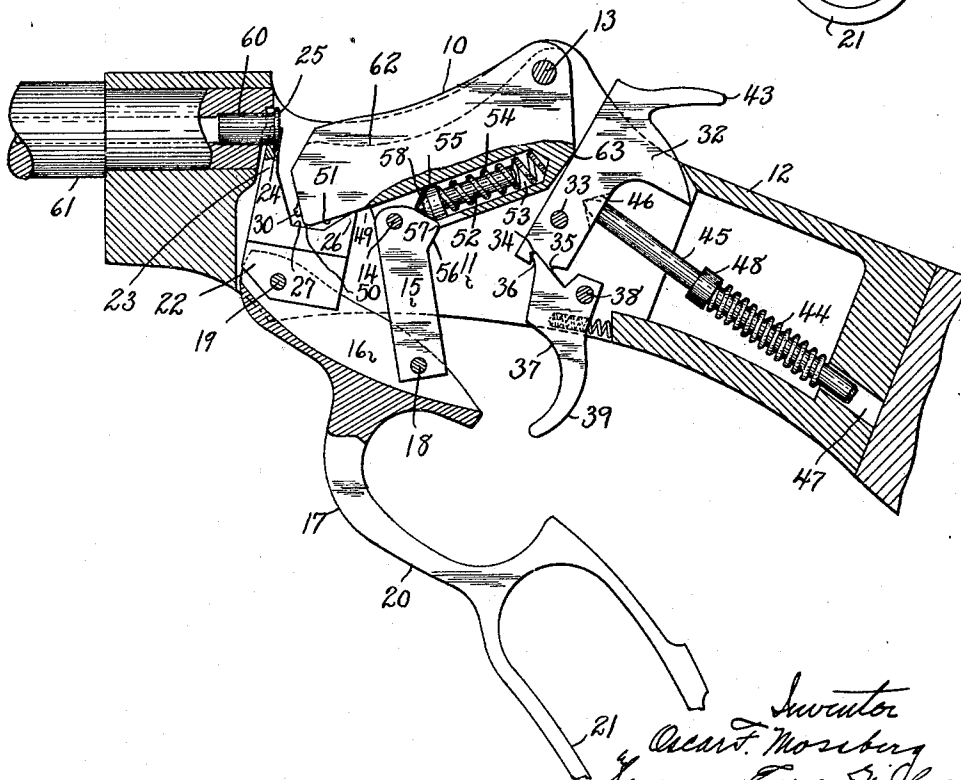


Fig. 1.



Inventor
Oscar F. Mossberg
Seymour Carl Nichols
Att'y

Jan. 27, 1931.

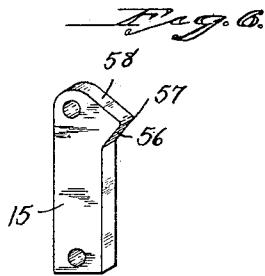
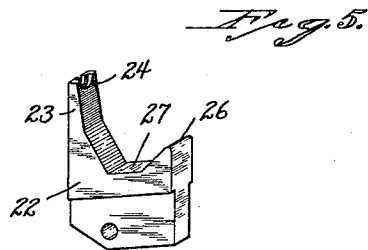
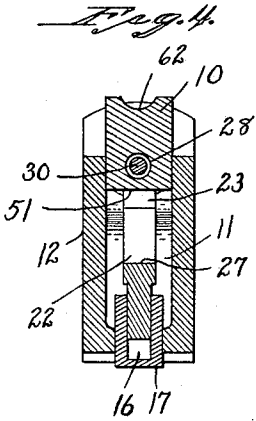
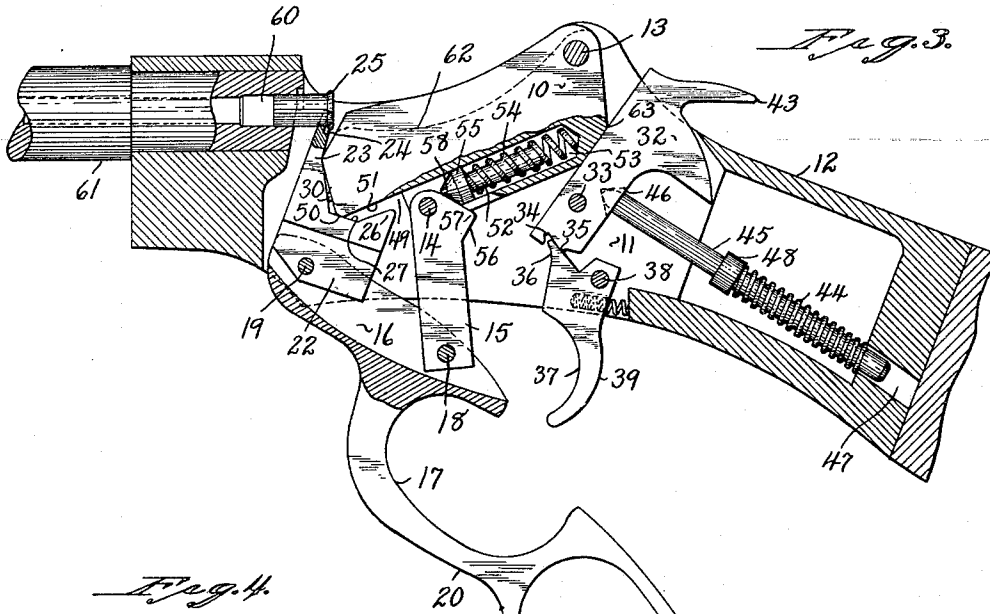
O. F. MOSSBERG

1,790,482

FIREARM

Filed May 16, 1929

2 Sheets-Sheet 2



Inventor.
Oscar F. Mossberg
by Seymour Isaac Richman
attor

UNITED STATES PATENT OFFICE

OSCAR F. MOSSBERG, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO O. F. MOSSBERG & SONS INC., OF NEW HAVEN, CONNECTICUT, A CORPORATION

FIREARM

Application filed May 16, 1929. Serial No. 363,540.

This invention relates to an improvement in firearms and particularly to firearms of the lever-action type though not so limited.

One of the objects of my invention is to provide a firearm with simple and effective means for extracting and ejecting the shells.

Another object of my invention is to provide a lever-action firearm at a low cost for manufacture with a simple and effective arrangement of parts acting to simultaneously hold the lever in its retired position and the breech-block in its breech-closing position.

A further object of my invention is to provide a firearm with a simple arrangement of parts for automatically effecting the cocking of the hammer when the breech-block is moved into its breech-opening position.

With the above and other objects in view, my invention consists in a firearm having certain details of construction and combinations and arrangements of parts as will be hereinafter described and particularly recited in the claims.

In the accompanying drawings:

Fig. 1 is a longitudinal sectional view through the receiver portion of a firearm embodying my invention, the parts being shown in the positions due them when the breech-block is in its breech-closing position and the lever in its retired position after the discharge of a cartridge;

Fig. 2 is a corresponding view but showing the parts in the positions due them when the lever is swung downward and the breech-block has engaged the pivotal ejector and has slightly moved the same;

Fig. 3 is a corresponding view but showing the parts in the positions due them when the lever is swung downward to its final position to effect the ejection of a cartridge-shell from the chamber of the gun;

Fig. 4 is a transverse sectional view taken on the line 4—4 of Fig. 1;

Fig. 5 is a detached perspective view of the pivotal ejector; and

Fig. 6 is a similar view of the link which connects the breech-block to the operating-lever of the firearm.

In carrying out my invention as herein shown, I employ a pivotal breech-block 10

located within a chamber 11 in the gun receiver 12 and hung at its upper rear end upon a pin 13 extending transversely across the said receiver.

The breech-block 10 just above described has pivotally connected to it by means of a transverse-pin 14 the upper end of a link 15, the lower end of which latter extends into a longitudinal groove 16 formed in the upper face of an operating-lever 17 and is pivotally connected to the latter by means of a transverse-pin 18.

The operating-lever 17 just above referred to is pivotally mounted at its forward end, which is located partially within the chamber 11 of the receiver, upon a pin 19 extending transversely therethrough and is shaped to form a trigger-guard 20 and a loop-shaped operating-handle 21 at its rear end.

Pivotally mounted upon the pin 19 upon which the operating-lever 17 swings and having its lower end located in the groove 16 in the said lever, is a pivotal ejector 22 having an upstanding ejector-arm 23 which is formed in its extreme upper end with a semicircular shouldered notch 24 adapted to receive the flanged rear end of a cartridge-shell 25. The ejector 22 is also formed at its upper rear corner with an abutment-nose 26 and at a point nearer the pin 19 upon which it rocks, with an abutment-surface 27 for the purpose as will be hereinafter described.

The breech-block 10 is formed with a longitudinal bore 28 enlarged in diameter at its rear end as at 29 and receiving a reciprocating firing-pin 30 having a head 31 located in the enlarged portion 29 and adapted to be engaged by the forward face of a pivotal hammer 32 located mainly within the chamber 11 of the receiver and rocking upon a pin 33 extending transversely therethrough.

The said hammer 32 is formed in its lower end with a half-cock notch 34 and with a full-cock shoulder 35 adapted to be engaged by the forwardly and upwardly pointed nose 36 of a trigger 37 which has its upper end located in the chamber 11 in the receiver and is mounted therein upon a transverse-pin 38 and is formed with a finger-piece 39 projecting downward from the receiver.

The hammer 32 is provided with the usual finger-piece 43 by means of which it may be manually cocked and is swung forward counter-clockwise to engage the forward face of its upper end with the rear end of the head 31 of the firing-pin 30, by means of a hammer-spring 44 encircling a plunger 45, the rounded forward end of which latter is seated in a conical pocket 46 in the rear face of the hammer 32. The plunger 45 bears at its rear end in a guide-passage 47 in the receiver 12 and is provided about midway of its length with a spring-abutment collar 48 engaged by the forward end of the spring 44, the rear end of which bears against the portion of the receiver adjacent the passage 47 therein.

The forward lower edge of the breech-block 10 is cut away to form a transverse right-angled notch 49 which results in the formation upon the said breech-block of an abutment-nose 50 adapted to engage the abutment-surface 27 of the ejector and with an abutment-surface 51 adapted to co-act with the abutment-nose 26 of the said ejector, as will be hereinafter described.

For the purpose of simultaneously yieldingly holding the breech-block 10 in its breech-closing position and the operating-lever 17 in its retired position, as shown in Fig. 1 of the drawings, as well as for propelling the said parts into their downwardly-rocked position shown in Fig. 3 of the drawings, after they are manually started toward such position, I employ a detent-plunger 52 reciprocating within a longitudinal socket 53 located in the breech-block 10 at a point below and parallel with the firing-pin 30 before described.

The rear end of the said detent-plunger 52 is encircled by a helical spring 54 which beats at its rear end against the closed rear end of the socket 53 and at its forward end impinges against the rear face of the conically-contoured head 55 of the said plunger. The said conically-contoured head 55 of the plunger 52 is adapted to engage either the lower sloping face 56 of a latching-nose 57 formed upon the link 15 or the upper sloping face 58 thereof for the purpose as will hereinafter appear.

As shown in Fig. 1 of the drawings, the parts of my improved firearm are shown in the positions due to them immediately after the trigger 37 has been operated to release the hammer 32 to the action of its spring 44 for driving the firing-pin 30 forward into engagement with the rim of a cartridge 25 positioned in the cartridge-chamber 60 in the rear end of the rifle-barrel 61.

For the purpose of ejecting the fired shell 25 from the firearm and permitting the introduction of a fresh shell, it will be necessary to swing the operating-lever 17 downward

and forward by means of its looped hand-grip 21.

In so doing the link 15 connecting the operating-lever 17 and the breech-block will exert a downward-pull upon the said breech-block with the effect of swinging its forward end out of line with the chamber 60 in the barrel 61, during which operation the detent-plunger 52 will be cammed rearward by the nose 57 of the said link until such time as the high point of the said nose passes the apex of the conical head of the said plunger.

As soon as the just above described action has occurred, the head 53 of the plunger 52 will ride over the upper face 58 of the nose 57 of the link 15 and exert an effort to swing the operating-lever 17 and the breech-block 10 rapidly downward with the effect of first engaging the abutment-surface 51 of the breech-block with the abutment-nose 26 of the ejector, as shown in Fig. 2 of the drawings, so as to rock the ejector 22 relatively slowly but powerfully rearward to loosen and slowly extract the cartridge-shell 25, and then of engaging the nose 50 of the breech-block 10 with the abutment-surface 27 of the said ejector for rocking the same more rapidly, with the ultimate effect of flipping the cartridge 25 from the chamber 60 and causing the same to ride rearwardly and upwardly through a curved longitudinal guide-channel 62 formed in the upper edge of the breech-block 10 and thence completely out of the firearm.

The initially-slow and powerful movement of the ejector 22 effected by first engaging the abutment-surface 51 of the breech-block with the abutment-nose 26 of the ejector is due to the fact that the said nose 26 is located a greater distance from the pin 19 upon which the ejector rocks than is its abutment-surface 27. Now when in the continued rocking movement of the ejector as just above described, the nose 50 of the breech-block engages the abutment-surface 27 of the ejector, the rocking movement of the same will be much more rapid, due to the fact that the engaging surfaces are much nearer the pin 19 upon which the said ejector rocks.

I thus provide a two-speed ejector having a relatively-slow but powerful initial movement to loosen the cartridge-shell and a final rapid movement to flip or eject the same from the firearm.

When the breech-block has been swung downward by the manipulation of the operating-lever 17, as previously described, the hammer 32 will be rocked rearward against the tension of its spring 44, by a cocking-nose 63 formed at the rear end of the said breech-block and engaging the forward edge of the said hammer, as shown in the drawings. The said cocking-nose 63 is so proportioned as to move the hammer 32 rearward just enough to permit the entry of the nose 36 of the trigger into the half-cock notch 32 of the said

trigger, though it will be apparent without further illustration, that should it be desired to effect the full-cocking of the hammer, the parts may be so proportioned as to give a greater rearward swing to the hammer when the breech-block is rocked downward, as described, and effect the full cocking of the hammer.

I claim:

1. In a lever-action firearm, the combination with a pivotal operating-lever and a pivotal breech-block; of a link connecting the said operating-lever and breech-block and formed with a detent-nose; and spring-pressed means acting upon the detent-nose of the said link to yieldingly hold the said lever in its retired position and the said breech-block in its breech-closing position.

2. In a lever-action firearm, the combination with a pivotal operating-lever and a pivotal breech-block; of a link connecting the said operating-lever and breech-block and formed with a detent-nose; and spring-pressed means carried by the said breech-block and acting upon the detent-nose of the said link to yieldingly hold the said lever in its retired position and the said breech-block in its breech-closing position.

3. In a lever-action firearm, the combination with a pivotal operating-lever and a horizontally-arranged pivotal breech-block positioned above the said lever; of a vertically-arranged link connecting the said operating-lever and breech-block and formed with a detent-nose and a horizontally-arranged spring-pressed plunger carried by the said breech-block and engaging the detent-nose of the said link to yieldingly hold the said lever in its retired position and the said breech-block in its breech-closing position.

4. A firearm having a pivotal ejector and a pivotal breech-block adapted to actuate the said ejector, the said parts being so shaped and positioned with respect to each other that the said breech-block in moving from its breech-closing to its breech-opening position will first engage a portion of the said ejector relatively distant from the pivot-point thereof and then engage a portion relatively nearer the said pivot-point; and a spring-pressed member carried by the said breech-block for forcing the same into engagement with the said ejector after the said breech-block has been initially moved manually from its breech-closing position; whereby the said ejector initially receives a relatively-slow and powerful impulse to loosen a cartridge and subsequently receives a more rapid and weaker impulse to eject the said cartridge from the arm.

5. In a lever-action firearm, the combination with a pivotal operating-lever and a pivotal breech-block; of a link connecting the said operating-lever and breech-block and formed with a detent-nose; a pivotal ejection

located in the path of travel of the said breech-block; the said ejector and breech-block being so positioned with respect to each other that the said breech-block in moving from its breech-closing to its breech-opening position will first engage a portion of the said ejector relatively distant from the pivot-point thereof and then engage a portion relatively nearer the said pivot-point; and a spring-pressed plunger co-acting with the nose of the said link for swinging the said breech-block into engagement with the said ejector when the breech-block has been initially moved manually from its breech-closing position; whereby the said ejector initially receives a relatively-slow and powerful impulse to loosen a cartridge and subsequently receives a more rapid and weaker impulse to eject the said cartridge from the arm.

In testimony whereof, I have signed this specification.

OSCAR F. MOSSBERG.

70

75

80

85

90

95

100

105

110

115

120

125

130