(No Model.)

4 Sheets—Sheet 1.

R. DINSMORE.

MAGAZINE GUN.

No. 492,864

Patented Mar. 7, 1893.

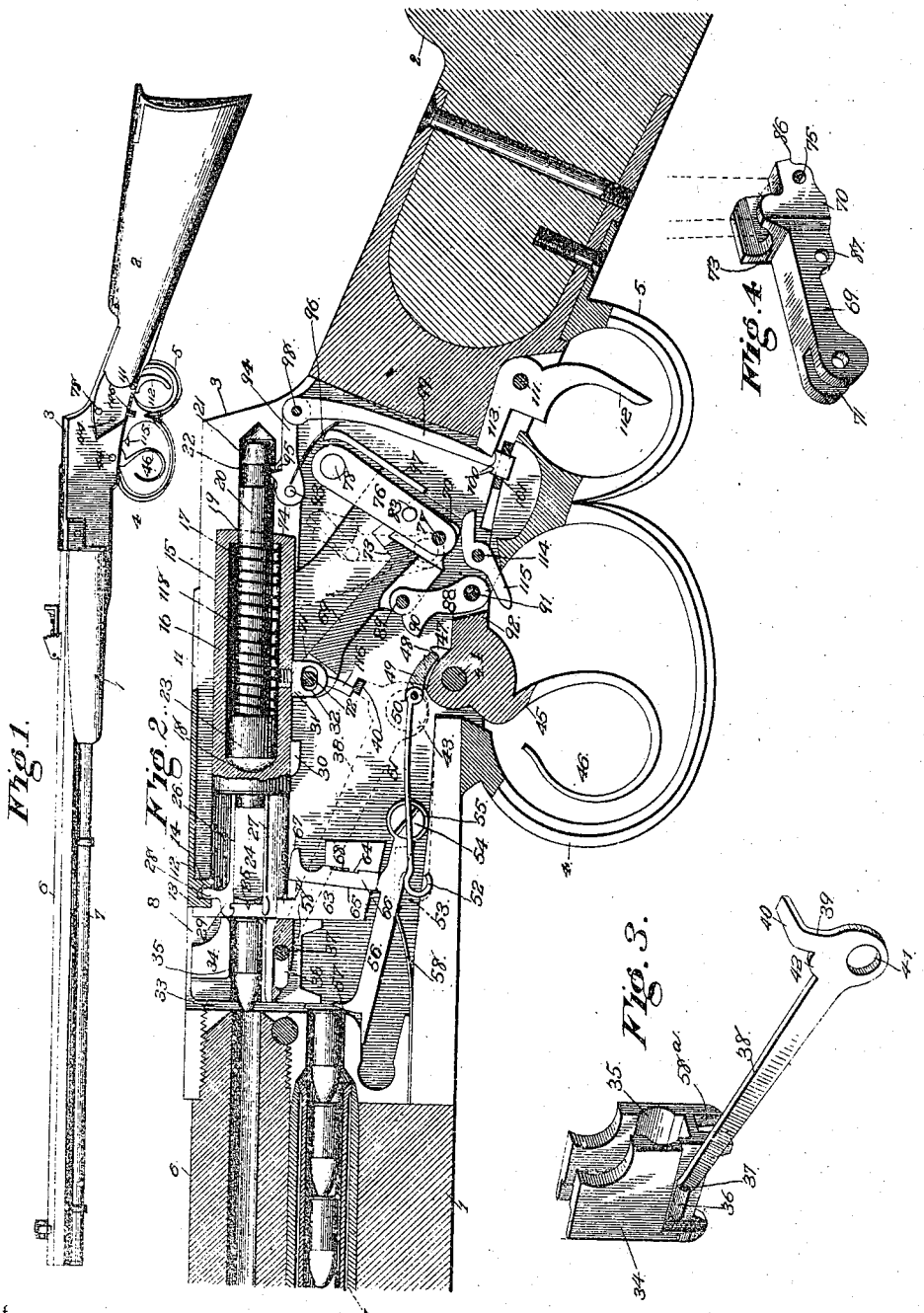

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Witnesses

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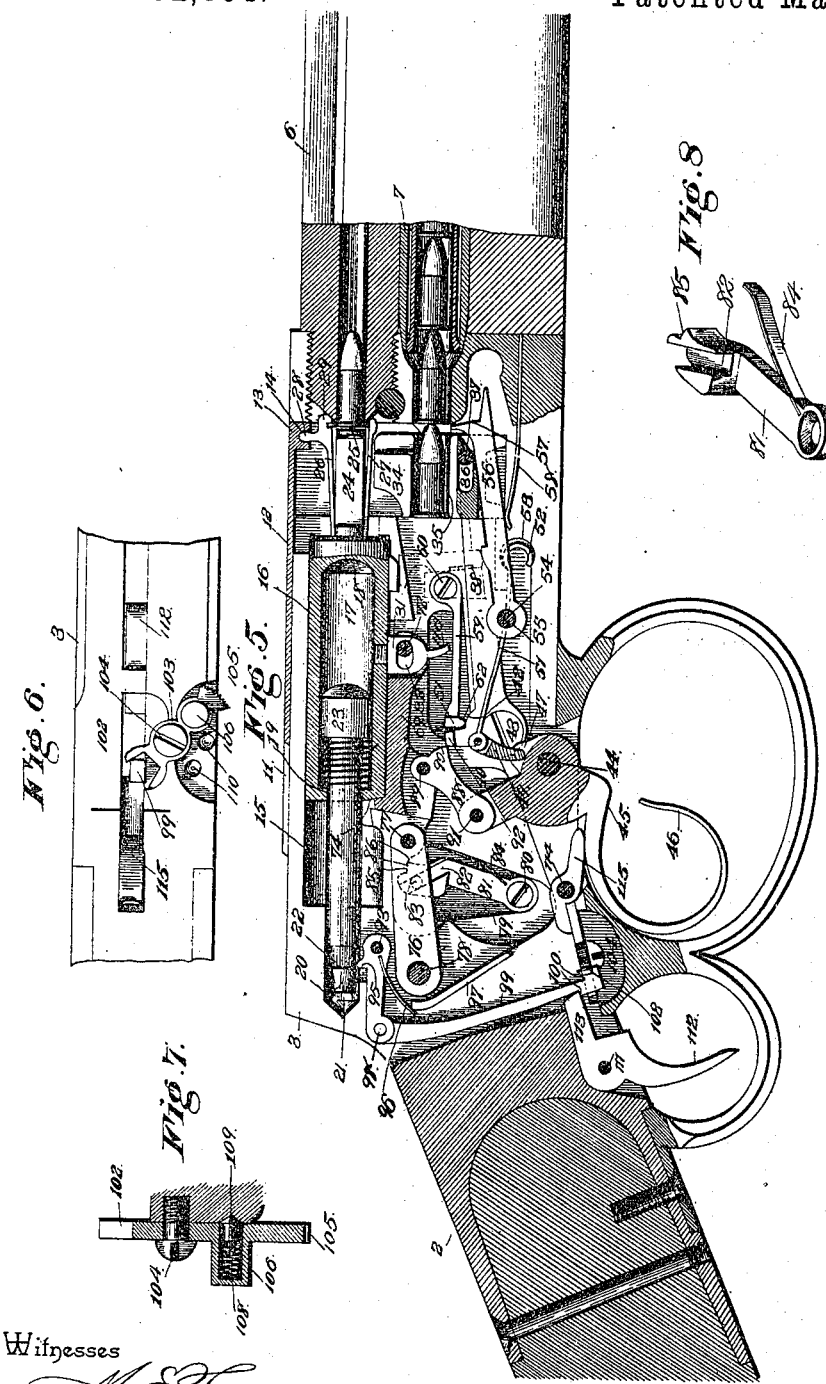

Fig. 5.

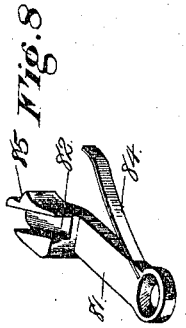

Fig. 8.

Fig. 6.

Fig. 7.

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(No Model.)

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R. DINSMORE.

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Fig. 9.

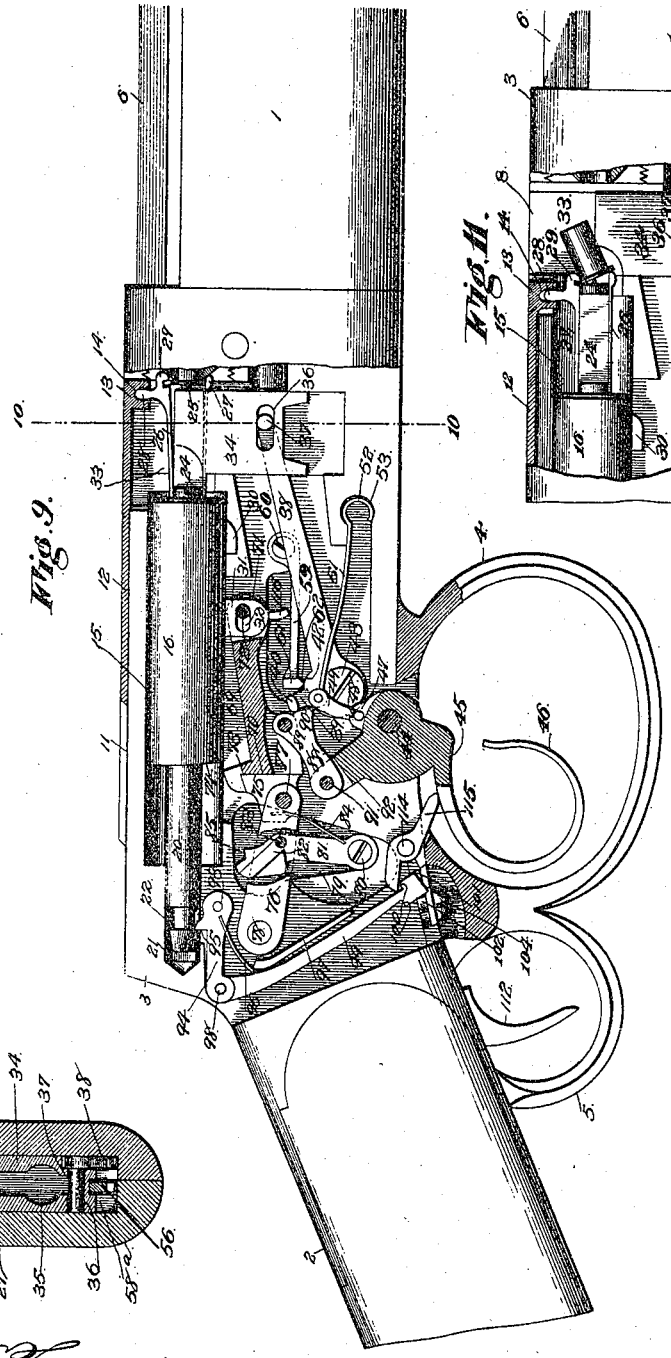


Fig. 11.

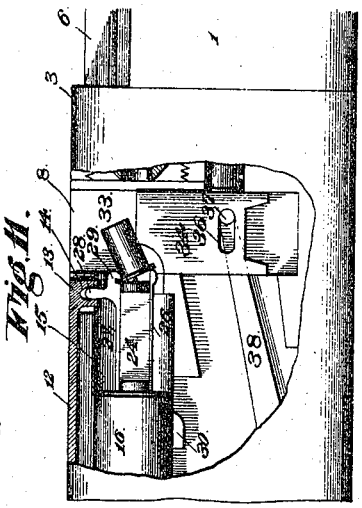
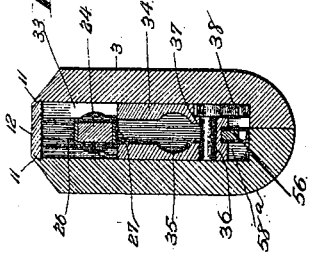


Fig. 10.



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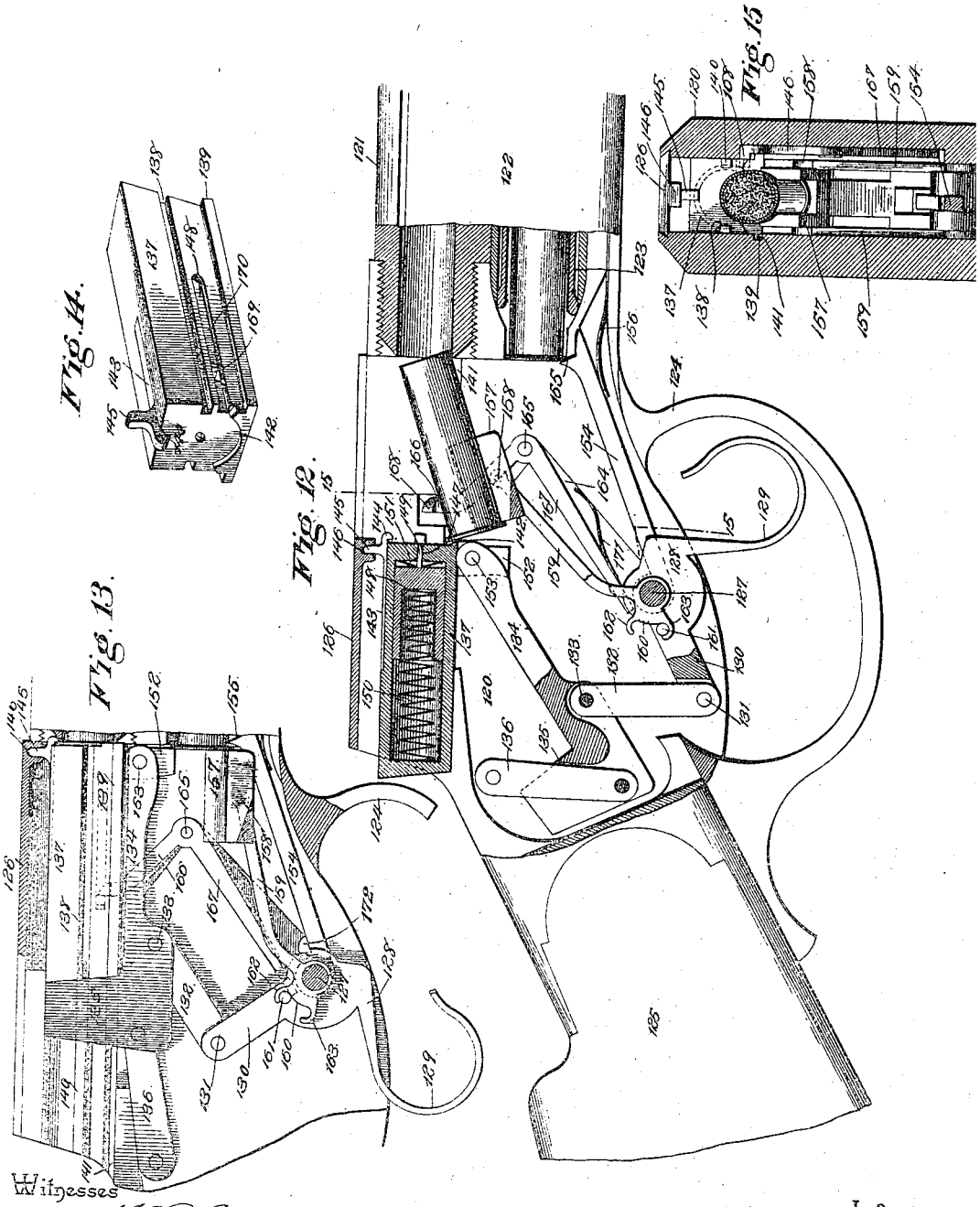

Witnesses

M. Fowler

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UNITED STATES PATENT OFFICE.

ROBERT DINSMORE, OF WESTON, WEST VIRGINIA, ASSIGNOR OF ONE-HALF TO ADOLPH GREENSTEIN, OF SAME PLACE.

MAGAZINE-GUN.

SPECIFICATION forming part of Letters Patent No. 492,864, dated March 7, 1893.

Application filed July 13, 1892. Serial No. 439,897. (No model.)

To all whom it may concern:

Be it known that I, ROBERT DINSMORE, a citizen of the United States, residing at Weston, in the county of Lewis and State of West Virginia, have invented a new and useful Magazine-Gun, of which the following is a specification.

My invention relates to magazine guns, and the objects and advantages of the invention, together with the novel features thereof, will hereinafter appear and be particularly pointed out in the claims.

Referring to the drawings:—Figure 1 is a side elevation of a gun embodying my invention. Fig. 2 is a central longitudinal section through the receiver of the gun, the parts being in the position they occupy when the gun is employed as single acting and when the plunger is withdrawn and engaged by the sear and previous to the insertion of the cartridge in the barrel. Fig. 3 is a detail in perspective of the carrier block and the lever for operating the same. Fig. 4 is a detail in perspective of the locking block. Fig. 5 is a view similar to Fig. 2 viewing the opposite side, the parts being in the positions they occupy when the plunger is engaged by the sear and the bolt advanced to force the cartridge in the barrel, or in other words, the piece is ready for firing. Fig. 6 is a detail plan of a portion of the receiver illustrating the switch for converting the gun from single to double acting. Fig. 7 is a longitudinal section of the switch in detail. Fig. 8 is a detail in perspective of the latch for supporting the locking-block. Fig. 9 is an elevation, one wall of the receiver being broken away and parts of the mechanism illustrated in section, the parts of the lock being illustrated in the positions they occupy after the plunger has been retracted and engaged by the sear and the bolt advanced to insert the cartridge but before the bolt has been locked in its advanced position, the gun also being adapted for use as a double acting gun. Fig. 10 is a transverse section on the line 10—10 of Fig. 9. Fig. 11 is an elevation of a portion of the receiver, the wall of which is broken away illustrating the parts in the positions they occupy when in the act of ejecting a shell. Fig. 12 is a longitudinal section of a modified construction of gun, the same being adapted for the discharge of shot, the parts being in the positions they occupy when in the act of introducing a loaded shell into the barrel. Fig. 13 is a similar view to Fig. 12 showing the parts ready for firing. Fig. 14 is a detail in perspective of the breech-bolt. Fig. 15 is a transverse section on the line 15—15 of Fig. 12.

Like numerals of reference indicate like parts in all the figures of the drawings.

1 designates the fore-arm of the gun, 2 the stock, 3 the receiver, 4 the front trigger-guard, 5 the rear trigger-guard, 6 the barrel, and 7 the magazine.

The receiver is formed in halves, as is usual, and secured together at proper points, the upper side of the receiver being provided from a point opposite the breech of the barrel to near its middle with an opening 8, the opposite edges of which, as best shown in Fig. 10, are provided with grooves 11, in which a sliding plate or cover 12 is located, the under side of said cover at its front end being provided with a depending lug 13 having a cavity 14. The opposite halves or sections of the receiver near their upper edges are provided with half circular grooves 15, which grooves receive for reciprocation a bolt 16. This bolt is hollow or provided with a cylindrical chamber or bore 17, the front end of which is rounded or concaved at 18, and the rear end of the bolt has a reduced circular opening 19. Mounted for reciprocation in the reduced opening 19 of the bolt is a plunger 20, whose rear end extends into a cavity or reduced bore 21 formed in the opposite halves of the receiver and is provided with an annular reduction forming a shoulder 22. The advanced end of the plunger is provided with an enlarged convexed head 23, the convexity of which agrees with the concaved inner end 18 of the bolt. Extending from the front of the bolt is a firing-pin 24, which is smaller in diameter than the bolt and is provided at its front end with a firing point 25. Above and below the firing-pin 24 spring extractors 26 and 27 respectively are secured, the upper extractor being provided near its

front end and upon its upper side with a rounded lug 28, which loosely engages with the cavity 14 formed in the lug 13 of the sliding-plate 12 while the front extremity of the said extractor is provided with a hook 29 that is forwardly-disposed and adapted to engage with the rim of a cartridge. The lower extractor is left plain, as shown, and terminates a slight distance in advance of the firing-pin 24. Formed upon the under side and at the front end of the bolt 16 is a chamfered lug 30, and in rear of the same is a lug 31 having an elongated slot or opening 32, the purpose of which will be hereinafter described.

33 designates the usual carrier-block well, or opening which is immediately in advance of the bore 15 of the receiver, and at the rear end of the barrel 6. Mounted for vertical reciprocation in the carrier-block well, or opening is the carrier-block 34, shown in detail in Fig. 3. This carrier-block is of the usual construction comprising the longitudinal bore or cartridge-passage 35 above which the walls of the block are contracted, and below said cartridge-passage is provided with an elongated slot 36. The slot 36 is engaged by the inwardly-turned end 37 of the longer branch 38 of a bell-cranked lever, the shorter branch 39 of said lever also having an inwardly-bent end 40. This bell-crank lever at the juncture of the two branches has a bolt-opening or perforation 41, and between the branches has a convexed edge 42, which is eccentric with relation to the opening 41. A bolt or screw 43 serves to pivot the bell-crank to the left wall of the receiver, as best shown in Fig. 5 of the drawings.

Upon a transverse bolt 44 is pivoted the finger-lever 45, the lower extremity of which is preferably shaped to form a finger-hold 46. The lever is provided upon its upper side with a slot forming opposite ears 47 having opposite bearing openings, and in these bearing openings loosely rest opposite trunnions 48, shown by dotted lines in Figs. 2 and 5, which are formed at the extremity of a link 49, whose front end is slotted and is pivoted at 50 to the spring 51. This spring 51 at its front end is curved to form a bearing-eye 52, and the same rests in a cavity 53, as shown in Fig. 5.

A screw 54 passes into the right wall of the receiver and through an eye 55 formed at the rear end of a cartridge retaining-arm 56 located below and some distance in rear of the magazine 7. This arm is provided upon its upper side near its front end with an upwardly-disposed finger 57, which when the arm is raised by a light spring 58 interposed between the under side of the arm and the lower side of the receiver is elevated into the path or line of cartridges within the magazine and into the path of the carrier block, which latter it will be observed, is recessed upon its under side at 58^a so as to embrace the arm.

59 designates a spring (see Figs. 5 and 9), and the same is secured at its front end by means of a screw 60 to the left wall of the receiver. This spring is located below the hollow bolt and at its rear end is provided with a head 61, the lower side of which is cut away or chamfered at 62, that rests upon the convexed or curved surface 42 of the bell cranked lever. When the bell crank lever at its front end connected with the carrier block is lowered the beveled head 61, by reason of the eccentricity of the lever tends to re-elevate said lever bearing as it does against the convexed portion 42 thereof adjacent to the arm or branch 39 of said lever, and when said lever is elevated at its front end and the carrier-block raised, the head of the spring bears against the convexed portion 42 adjacent to the arm 38 and serves to aid in depressing said arm at a subsequent lowering of the carrier block.

Between the two sections of the receiver, adjacent to the carrier-block well, or opening, a pair of transverse blocks 63 is located, one of which is provided with a stop lug 64, said blocks being arranged a slight distance apart so as to form an intermediate recess 65. In this recess there is mounted for vertical reciprocation a pin 66, whose upper end is rounded at 67, and when elevated it lies in the path of the lug 30, before mentioned as being formed upon the under side of the hollow bolt 16. The rear face of the pin is recessed at 68, the same being somewhat longer than the width of the stop-lug 64, and said pin is therefore permitted to reciprocate vertically until its movements are arrested by the contact of said lug with the end walls of the recess. The lower end of the pin rests upon the upper side of the arm 56 so that when the pin is depressed by a forward movement of the hollow bolt the arm is forced downwardly against the tension of its spring 58, and thus the shoulder 57 is removed from behind the line of cartridges in the magazine.

69 designates an arm which has formed at its rear end a locking-block 70. The arm 69, as shown in Fig. 4, has its front end bifurcated at 71, and embraces the slotted lug 31 upon the under side of the hollow bolt 16. A pin 72 passes through the bifurcations and through the slot in the lug whereby the arm is loosely and pivotally connected to the said bolt. The rear end of the bolt, as before stated, terminates in a locking-block 70, and the same has its front side or face inclined at 73 to conform with the inclined rear end 74 of the hollow bolt 16. At its rear end the block is bifurcated and provided with perforations 75, which loosely receive the free end of a link 76, which is pivotally connected by transverse bolts 77 to said bifurcations. The rear end of the link is pivotally connected by a bolt 78 to the receiver.

The left side of the receiver is provided with a V-shaped recess 79 opposite the link 76 and

in the bottom of the same a screw 80 is passed through and serves to pivotally support a locking-lever 81. The upper end of the locking-lever is provided with an inclined groove 82 upon its inner face, said groove being engaged by a pin 83, best shown by dotted lines in Fig. 5. A flat spring 84 has its lower end let into the locking lever 81, and its upper free end bears against the front wall of the recess 79, the tendency of the spring being to force the locking lever to the rear. The upper end of the locking lever is further provided with a shoulder 85 at its front end, which shoulder engages with a corresponding shoulder 86 formed at the rear end of the locking-block 70.

The under side of the arm 69 is recessed and provided with opposite perforations 87, which receive the upper extremity of a link 88, which is pivoted by a bolt 89 to said extremity. The upper front end of the link has a curved shoulder 90, while the lower end of the link is by a bolt 91 pivotally connected to the rearwardly-disposed branch 92 of the lever.

Upon a transverse pin 93 is pivoted the end of a sear 94, which immediately in rear of the pivot has an inclined shoulder 95 designed to engage with the annular shoulder 22 with which the plunger 20 is provided near its rear end. A flat spring 96 is secured to the under side of the sear, declines from the same, and at its front end rests against a stop 97, the tendency of the spring being to elevate the sear so that its locking shoulder 95 is in the line or path of the rear beveled end of the plunger. To the rear of the sear there is pivoted by a pin 98 a depending arm 99, which is provided at its front and rear edges and at its lower end with shoulders 100. The lower end of this arm extends through an opening 101 formed in the under side of the receiver and is connected by a fork or bifurcated end 102 of a shaft or switch-lever 103. This shaft or switch-lever is pivoted at its center to the under side of the receiver by a screw 104, and at its rear end is provided with a milled lug 105. A small cavity 106 depends from the under side of the switch lever and in the same is loosely mounted a coiled spring 108 upon which is situated a detent 109, whose outer end is conical and may engage any one of a series of three shallow cavities 110 formed in the under side of the receiver, all as best shown in Figs. 6 and 7 of the drawings.

Upon a transverse bolt 111 is pivoted the bell crank trigger having a finger-pull 112 at its rear end, and a forwardly-disposed branch 113 at its front end. In front of the trigger 112 and in rear of the finger-lever 45 there is pivoted upon a transverse bolt 114 a button 115, the front branch of which extends below and in the path of the rear end of the lever 45, and the rear branch of which extends rearward in the path of the lower end of the arm 99 and terminates some distance from the front end of the branch 113 of the trigger. From the lower end of the slotted lug 31 depends a finger 116, which lies in the path of the bent end 40 of the branch 39 of the bell crank lever that operates the carrier-block.

Referring to Fig. 5 in which the piece is ready for firing, a pull upon the trigger draws upon the arm 99 against the tension of the spring 96 and thus withdraws the shoulder 95 of the sear 94 from engagement with the shoulder 22 of the bolt 20. This liberation of the plunger permits the coiled spring 118, which is interposed between the head of the plunger and the rear end of the hollow bolt, to throw the latter forward so that its head abuts against the front concaved end of the bore of the bolt and its firing-pin is advanced against the cartridge so as to explode the same. This movement upon the part of the firing-pin and plunger is permitted by reason of the loose connection, namely, the slot 32 and pin 72 between the locking-block arm 69 and the hollow bolt. Now by pushing the finger-lever 45 to the front it, through the medium of the link 88, will release the locking-block and arm and the same will fall, being aided by the spring 51 to the position shown in Fig. 2, and the plunger being carried to the rear will have its shoulder 22 re-engaged by the shoulder 95 of the sear. The plate 12 which is engaged by the upper extractor 26 will be carried to the rear so as to open the carrier-block well, and the shell that has been exploded will be withdrawn by the extractors and held suspended within the well. The forward movement of the hollow bolt when in the act of firing will it will be observed, have released the bell-crank lever that supports the carrier-block by reason of the fact that the lug 116 has been advanced from any contact with the branch 39 of said bell-crank so that the carrier-block will have fallen to its lower position and out of the way of the firing-pin. The final or forward movement given the bolt when the plunger is liberated causes the lug 30 to depress the pin 66 and the latter acting upon the retaining arm 56 will lower the same so that its shoulder 57 will be withdrawn from the line of cartridges and a cartridge will pass from the magazine into the the carrier-block. Thus when the finger-lever is pulled to the rear the hollow bolt and plunger, as before described, are actuated or returned to the cocking position, and the lug 116 striking against the bent end 40 of the branch 39 of the bell-cranked lever will serve to re-elevate said lever and carrier-block, thus raising the cartridge to a point in rear of the barrel. The lug 30 being withdrawn from over the pin 66, liberates the arm 56 which is re-elevated by the spring 58 into the path of the cartridges. The re-elevation of the carrier-block will cause the same to contact with the suspended empty shell, and the lower extractor being plain and the upper one engaging the shell will cause the shell to be thrown upward through the carrier block open-

ing and thus ejected. Having thus elevated the cartridge and retracted the plunger and hollow bolt the finger-lever is pulled to the rear and through the medium of the link 88 the locking-block is swung upward thus carrying the locking-block to an operating position, that is, where it lies alongside and underneath the hollow bolt and in rear of the same. In this position the inclined faces of the locking-block and hollow bolt contact and the link 76 is elevated so as to form a practical continuation of the locking-block and thus lock the bolt in its forward or advanced position and against rebound. This advancement of the bolt is accomplished by the elevation of the block and at the same time the cartridge is forced home or into the barrel. When the parts are in these positions the pin 83 riding in the inclined groove 82 of the locking lever 81 has caused the shoulder 85 of said lever to engage with the shoulder 86 of the locking-block and thus aids in the support of the same. Now when the trigger is pulled and the plunger is liberated as before described, and the extra movement given to the bolt it will be seen that the shoulder 86 of the locking-block will be withdrawn from over the shoulder 85 of the locking-lever and thus the lever will no longer support the locking-block. The spring 51, it will be observed, acts at either side of the pivot 44, by reason of the eccentric connection between the spring and the finger-lever so that whether the finger-lever be pushed to the front or pulled to the rear, the spring will act to maintain the same in that position.

I have now described the operation of cocking by the finger-lever and firing by the trigger, and I will proceed to describe how the finger-lever may be employed for accomplishing both results, that is, so that the gun is rendered double acting. I accomplish this by swinging the switch lever 103 so that the detent 109 is in the rear opening 110, as shown in Fig. 6, this causes the arm 99 to be withdrawn from under the trigger 113, which latter is now rendered useless or inoperative, and causes the said arm to engage with the rear end of the button 115. The operations of loading and firing are now the same as before, with the exception that when the finger-lever 45 is pulled to the rear the finger-hold 46 strikes against the under side of the front end of the button 115, thus depressing the rear end of said button, and pulling down upon the arm 99, thus acting upon the arm in the same manner as did the trigger. In this manner the gun will be loaded and fired by the one trigger or finger-lever and by simply a forward and rear movement thereof.

The principle involved in the gun described may be introduced in shot-guns and this I have described in Figs. 12 to 15 of the drawings, Sheet 4. In these figures more particularly Fig. 12, 120 designates the receiver, 121 the barrel, 122 the forearm, 123 the magazine, 124 the guard, 125 the stock, and 126 the sliding receiver plate.

Upon a transverse bolt 127, the finger-lever 128 is mounted pivotally and the same consists of the depending finger-pull portion 129 and the rearwardly-disposed branch 130. The branch 130 is pivoted by a pin 131 to the lower end of the link 132, which in turn has its upper end pivoted at 133 to the under bifurcated side of the arm 134 of the locking-block 135. This locking-block has a front inclined face and is pivoted by a pair of links 136 to the opposite walls of the receiver. The bolt is, in this instance, rectangular in cross-section and is best shown in Fig. 14, wherein it is numbered 137. The exterior of the bolt is provided with opposite longitudinal grooves 138 and ribs 139, the former receiving ribs 140, and the latter entering grooves 141 formed in the opposite walls of the receiver. The front end of the bolt is provided near its lower edge with a curved forwardly-disposed flange 142, and upon its upper side has secured an extractor 143 which extends beyond the front end of the bolt where it terminates in a hook 144, and in rear of the same is provided with a lug 145 that engages with a depending recessed lug 146 formed upon the under side and at the front end of the reciprocating plate 126. The bolt is provided with a cylindrical bore closed at opposite ends with the exception of its front, which has a minute perforation 147. A hollow plunger 148 is located in the bore of the bolt and is provided at its front end with a lug or pin 149 that extends from the perforation 147 and slightly beyond the same when the plunger is in its forward position. A coiled spring 150 is interposed between the plunger and the rear end of the bolt serving to force the former to the front. A concaved spring-disk 151 is perforated to receive the firing pin or lug and is interposed between the front end of the plunger and the wall of the bolt. A lug 152 depends from the under side of the bolt and is embraced by the bifurcations at the front end of the arm 134 to which it is pivoted by a transverse pin 153. 154 designates the cartridge retaining arm and the same is pivotally mounted on the transverse bolt 127 that supports the finger-lever, the advanced end of the arm being provided with a shoulder 155, that is normally held in rear of the line of cartridges through the medium of a light spring 156 interposed between the under side of the arm and the lower portion of the receiver.

157 designates the carrier-block and the same has pivoted to its opposite sides by a pin 158 a pair of levers 159 which are of bell-cranked shape and are pivotally mounted on the bolt 127. The lower branches of the bell-cranks are provided with curved recesses 160, in which rides a pair of pins 161 which extend loosely from the rear branch of the finger-lever, said curved branches forming at

opposite ends of the same, upper and lower lugs 162 and 163 respectively.

Set in a recess 164 formed in one side of the receiver and pivoted upon a bolt 165 therein is a bell-crank sear having an upwardly-disposed branch 166 and a declining branch 167, the latter being located in the position of one of the pins 161. The upper branch of the bell-cranked sear has an upwardly-disposed beveled lug 168 which lies in the path of a transversely disposed trunnion or shoulder 169 that is formed on and extends from the plunger 148 and projects through the wall of the bolt and into a groove 170 formed in said wall. Interposed between the lower branch of the bell-cranked sear and the recess 164 is a curved spring 171. A lug 172 projects from the finger-lever 129 and is adapted to strike and depress against the tension of the spring 156 the lever 154. The operation of this mechanism will be readily understood from the foregoing description and may be briefly stated as follows:—

By drawing the finger-lever to the rear, the hollow bolt is carried forward and the locking block elevated in rear of the bolt so as to prevent a rebound of the same. The shell which is supported upon the carrier-block is pushed by the bolt into the barrel, and as the lug 169 is engaged by the lug 168 of the sear the spring 150 becomes compressed. A continued movement of the finger-lever and advancement of the bolt causes the pin 161 to strike upon the upper branch of the bell-cranked sear depressing said branch and withdrawing the upper end or lug 168 from in front of the lug 169 of the plunger which is thus thrown forward by the spring 150 and the shell exploded. In the meantime during the movements of the bolt the pin 161 is elevated against the upper lug or end wall of the recess 160 and causes a lowering of the carrier-block to a point opposite the magazine and the lug 172 has come in contact with and depressed the arm 154 thus liberating the line of shells in the magazine and permitting one of the same to pass rearward upon the carrier-block. When the piece is fired the spring-disk 151 causes the plunger to slightly rebound and be withdrawn from contact with the shell. After firing a forward movement of the finger-lever causes the locking-block to drop to the position shown in Fig. 12, and causes the carrier-block to be elevated through the medium of the pins 161 arriving at the lower end of the recess 160 and thus elevating the arms or levers 159. Such elevation causes the expulsion of the withdrawn and fired shell and brings the fresh shell to the position shown in Fig. 12, wherein its front end is directly at the breech of the barrel. Thus a subsequent pull upon the finger-lever will cause the bolt to advance and push the shell into the barrel, the operation of firing being continued in the manner described.

From the foregoing description in connection with the accompanying drawings it will be seen that I have provided a lock mechanism for guns that may be employed in repeating-rifles or shot-guns, and that said guns and rifles may be set so as to be single or double acting as may be desired and in accordance with the use to which they are to be put. It will also be seen that by throwing the switch lever to the center so that the detent will engage the center cavity of the receiver the arm 99 will not be engaged by either the finger-lever or trigger and thus the piece is locked for safety and cannot be fired until the switch lever is operated so as to throw the arm 99 into engagement with either the button or the rear trigger. It will be furthermore seen that the breech-bolt is securely locked and braced against rebound or concussion and that heavy discharges may be fired without danger of blowing the breech-block and bolt from the gun.

Having described my invention, what I claim is—

1. In a gun, the combination with the receiver, having ways, of a reciprocating bolt mounted in the ways, a plunger mounted in the bolt, means for operating the plunger, a finger-lever, a locking-block pivoted at its front end to the bolt and adapted to be swung up in rear of the same, and connections between the locking block and finger lever, substantially as specified.

2. In a gun, the combination with a receiver having ways, a hollow bolt, a plunger mounted therein, means for operating the plunger, a finger-lever, a locking-block pivoted at its front end to the bolt and having its rear end inclined and adapted to be swung up in rear of the bolt, and connections between the rear end of the finger-lever and the block, substantially as specified.

3. In a gun the combination with the receiver having ways, of a hollow bolt mounted therein and adapted to reciprocate, a lug depending from the bolt and having an elongated slot, a plunger mounted in the bolt, means for operating the plunger, a bell-crank finger-lever, a locking-block adapted to swing in rear of the bolt, a pin passed loosely through the front end of the block and elongated slot of the lug, and a link connecting the rear branch of the finger-lever with the block, substantially as specified.

4. In a gun the combination with the receiver having ways, of the hollow bolt mounted therein and terminating at its front end in a firing-pin, a plunger mounted for reciprocation in the bolt, means for operating the plunger, a bell-cranked finger-lever pivoted in the receiver, a locking-block loosely connected at its front end to the bolt and adapted at its rear end to be swung in rear of the bolt, a link pivoted to the block at the rear end thereof and pivotally connected at its rear end to the receiver, and the link pivotally connected

to the locking-block and to the inner branch of the bell-cranked finger-lever, substantially as specified.

5. In a gun the combination with the receiver having ways, of a hollow bolt mounted therein and terminating at its front end in a firing-pin, a plunger mounted in the bolt, means for operating the plunger, a bell-cranked finger-lever located below the bolt, a locking-block pivoted at its front end to swing in rear of the bolt, a link pivotally connected at its rear end to the receiver and at its front end to the rear end of the block, which latter has a link pivotally connected at its upper end to the block and at its lower end to the inner branch of the bell-crank, a spring pivotally secured at its front end in the receiver, and a link pivotally connected to the rear end of the spring and eccentrically connected with the trigger, substantially as specified.

6. In a gun the combination with the receiver having ways, a hollow bolt mounted in the ways and terminating at its front end in a firing-pin, a plunger mounted for reciprocation in the bolt, and means for actuating the plunger, a lug depending from the under side of the bolt and having an elongated slot terminating in a finger, of a bell-crank lever, a locking block loosely connected with the slot and adapted at its rear end to take in rear of the bolt, a link connecting the inner end of the bell-cranked finger-lever with the block and provided with an inclined shoulder near its upper end, a bell-cranked lever pivoted above the finger-lever and having one branch extended in the paths of the shoulder of the link and the finger of the lug, and a carrier-block mounted in advance of the finger-lever and loosely engaged by the remaining arm of the bell-crank, substantially as specified.

7. In a gun the combination with the magazine, barrel, and receiver, the latter having ways, of a hollow bolt terminating at its front end in a firing pin mounted in the ways, a plunger mounted in the bolt, means for actuating the same means for locking the bolt against retraction, a bell-cranked lever pivoted in the receiver and adapted to be actuated in one direction by the bolt and in the opposite direction by the finger-lever, a carrier block loosely connected with the forward branch of the lever and adapted to reciprocate between the magazine, and barrel, an arm pivoted in the rear of the magazine, and having its forward end spring-pressed in the path of the cartridges, and means for depressing the arm at each forward reciprocation of the bolt, substantially as specified.

8. In a gun the combination with the magazine, barrel and receiver, the latter having ways, of a reciprocating bolt mounted in the ways, a lug on the under side of the same, vertical ways formed in the receiver, an arm pivoted in rear of the magazine, a spring for elevating the same into the path of the cartridges, a pin mounted in the vertical ways above the arm and resting on the latter and arranged in the path of the lug of the bolt, and means for reciprocating the bolt, substantially as specified.

9. In a gun the combination with the receiver, magazine, and barrel, of a carrier block mounted for vertical reciprocation between the latter two, a bell-crank lever pivoted in the receiver and loosely connected at its front end to the carrier block, means for striking and vibrating the remaining branch of the bell-crank lever, which lever is provided between its branches with a convex surface and a spring secured in the receiver and terminating between the branches of the bell-crank in a beveled head adapted to slide over the convexed surface and to opposite sides of the pivot of the bell-crank, substantially as specified.

10. In a gun the combination with the receiver having ways, the hollow reciprocating bolt mounted therein and terminating in a firing pin, the plunger mounted in the bolt, means for actuating the plunger, a lug depending from the bolt and having an elongated slot, a locking block having an opening loosely engaging the slot and adapted to swing up in rear of the bolt and having its rear end provided with a shoulder, a link pivoted to the receiver and at its front end pivoted to the locking block and provided with a transverse pin, a locking lever pivoted at its lower end to the side of the receiver and having its upper end provided at its front side with a shoulder for engaging that of the locking-block, and an inclined way engaging the pin of the link, and a spring for normally pressing the lever rearward, substantially as specified.

11. In a gun the combination with the receiver having ways, the bolt mounted in the ways having a rear bore and closed front end from which extends a rigid firing-pin, the plunger mounted in the bolt and terminating at its front end in a head, a spring interposed between the head and rear end of the bolt, a shoulder on the plunger in rear of the bolt, a sear pivoted at its front end and provided between its ends with a shoulder engaging that of the bolt, a spring for normally elevating the sear and an arm depending from the rear free end of the sear and pivoted thereto, a trigger loosely connected to the arm, and means for reciprocating the bolt and plunger to the rear and the bolt to the front, substantially as specified.

12. In a gun the combination with the receiver having opposite ways, a plunger and firing bolt terminating in a pin mounted in the ways, the plunger being provided with a notch, of means for locking the firing bolt in an advanced position, a sear pivoted at its front end and provided in rear thereof with a shoulder for engaging the notch, a spring for supporting the shoulder in the path of the notch, an arm depending from the sear and

provided at its lower end and at opposite sides with shoulders, a trigger arranged in rear of the arm and of bell crank shape and adapted at its front end to engage the rear shoulder of the arm, a trigger arranged in advance of the arm, intermediate devices between the last mentioned trigger and arm whereby said trigger may actuate the arm, means for shifting the arm so as to be actuated by either trigger, and connecting devices between the hollow bolt and front trigger, substantially as specified.

13. In a gun the combination with the receiver, a reciprocating firing bolt, a lug depending from the bolt and moving therewith, a bell crank trigger, a swinging locking block adapted to take in rear of the bolt, a link having a shoulder, of a carrier block, a bell-cranked lever having one branch engaging the same and at its rear branch extending into the path of and adapted to be struck at opposite sides by the lug of the firing bolt and shoulder of the link during the movements of the two, substantially as specified.

14. In a gun the combination with the receiver having opposite ways, a reciprocating firing bolt mounted therein and provided with a depending lug, a trigger, a swinging locking block arranged between the trigger and bolt, a link provided at its upper end with a forwardly-disposed shoulder, a carrier block, a bell-crank lever for operating the same, the rear branch of the bell-crank being provided with a laterally bent portion extending into the path of and adapted to be struck alternately by the lug of the bolt and shoulder of the link, said bell crank being provided between its branches with a convexed eccentric surface, of a spring lever secured to the receiver and terminating at its rear end in a head having a beveled face lying upon the eccentrically-curved portion of the bell-crank lever and adapted to operate at opposite sides of the fulcrum of the latter, substantially as specified.

15. In a gun the combination with the receiver having ways in its upper side and provided between the same with an opening, of a reciprocating bolt located below the ways in lower ways formed in the receiver and terminating at its front end in a firing-pin, a plate mounted for reciprocation in the upper ways and adapted to cover the opening and provided upon its under side with a concaved lug, an extractor arm secured to the firing pin and terminating at its front end in a hook and provided above the same with a convexed lug engaging the concavity of the depending lug of the plate, an extractor arm at the under side of the firing-pin, the same being plain, means for reciprocating the bolt, a vertical reciprocating carrier-block, and means for elevating the same at a retraction of the firing bolt, substantially as specified.

16. In a magazine gun the combination with the magazine and receiver, of a reciprocating firing-bolt provided upon its under side with a lug, vertical ways formed upon the inner side of the receiver, a reciprocating pin mounted in the ways, an upwardly-pressed lever pivoted in the receiver in rear of the magazine and provided upon its upper side with a shoulder normally extending into the line of cartridges at the rear end of the magazine and adapted to be depressed by the downward movement of said pin, substantially as specified.

17. In a magazine gun the combination with the magazine, the receiver having ways, the firing bolt provided with a lug and mounted in the ways, of an arm pivoted in the receiver and provided upon its upper side with a shoulder extending into the path of the cartridges in the magazine, intermediate vertical blocks forming ways located upon the side of the receiver between the arm and bolt, one of said blocks being provided with a lug, and a pin mounted for reciprocation between the blocks and recessed at one edge to embrace the lug and at its lower end resting upon the arm, substantially as specified.

18. In a gun the combination with the receiver having ways, the hollow bolt mounted therein and terminating at its front end in a firing pin, a spring-pressed plunger located in the bolt and provided at its rear end with a notch, the pivoted sear having a shoulder for engaging the notch, a spring for supporting the sear, an arm pivotally connected at its upper end to and depending from the rear end of the sear, said arm being provided at opposite sides with shoulders, a bell-crank trigger pivoted in rear of the arm and adapted to engage the same, a button pivoted in front of the arm and adapted at its rear end to engage the front shoulder of the arm, a bell crank trigger in advance of the button and adapted to strike the front end of the same when drawn to the rear, a spring for said trigger, of a pivoted shifting lever located under the receiver and having one end engaging the lower end of the arm and adapted to swing the same so that its shoulders will engage either the rear trigger or the rear end of the button, and means for locking the lever in either of the positions mentioned, substantially as specified.

19. In a gun the combination with the receiver having ways, the hollow bolt mounted therein and terminating at its front end in a firing-pin, a spring-pressed plunger located in the bolt and provided at its rear end with a notch, the pivoted sear having a shoulder for engaging the notch, a spring for supporting the sear, an arm pivotally connected at its upper end to and depending from the rear end of the sear, said arm being provided at opposite sides with shoulders, a bell-crank trigger pivoted in rear of the arm and adapted to engage the same, a button pivoted in front of the arm and adapted at its rear end to engage the front shoulder of the arm, a bell-

crank trigger in advance of the button and adapted to strike the front end of the same when drawn to the rear, a spring for said trigger, of a pivoted shifting lever one end of which engages loosely with the arm, a socket formed in the lever and provided with a spring-detent and a series of three indentations adapted to be engaged by the detent whereby the shifting lever may be thrown to either side for bringing the arm into engagement with the button or bell-crank trigger or to a point between the same where no engagement is effected, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ROBERT DINSMORE.

Witnesses:
D. M. TIMBERLAKE,
C. A. WEST.