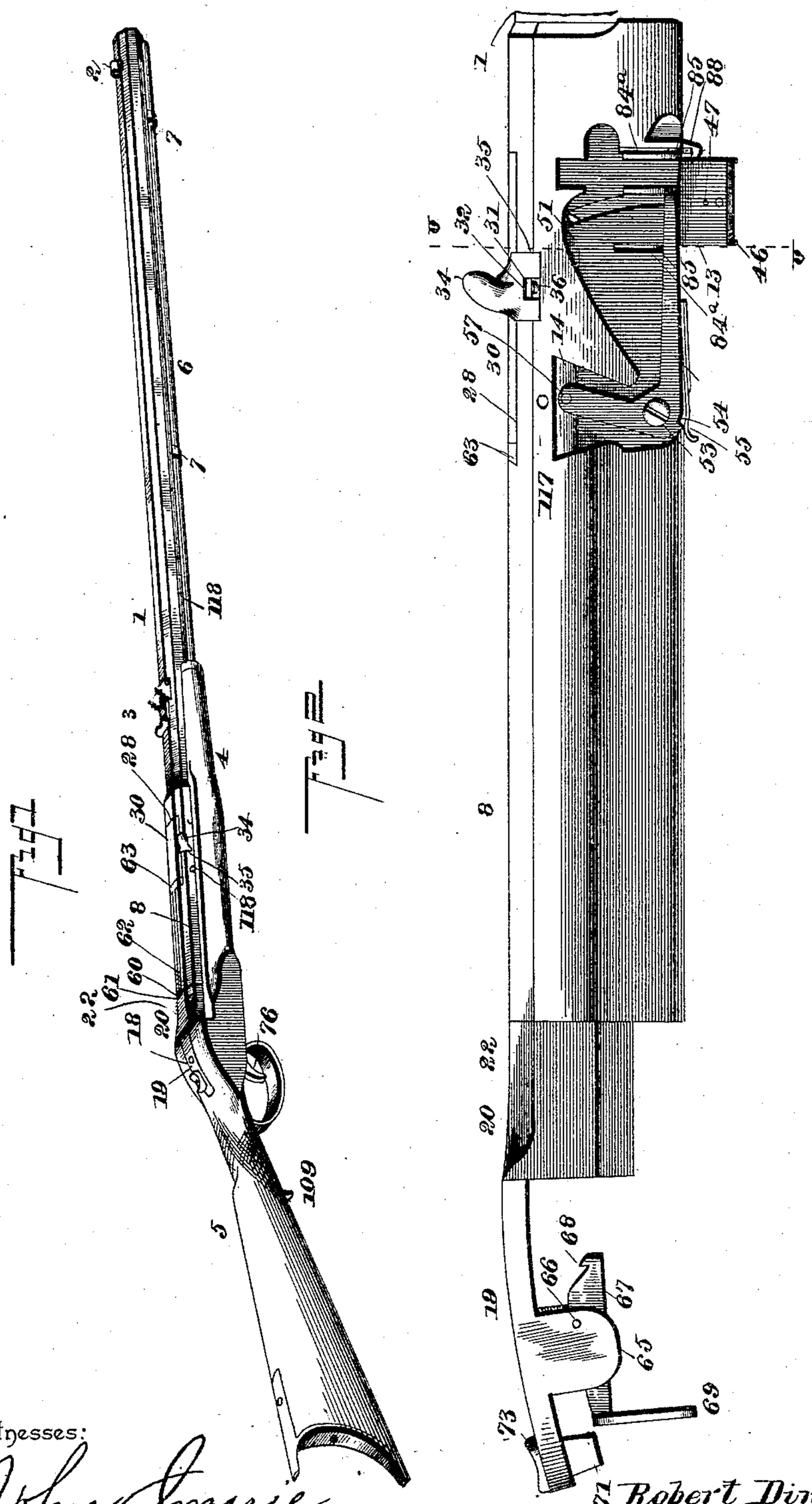
(No Model.) 4 Sheets—Sheet 1.

R. DINSMORE.

MAGAZINE GUN WITH PNEUMATICALLY OPERATED MAGAZINES.

No. 444,666. Patented Jan. 13, 1891.



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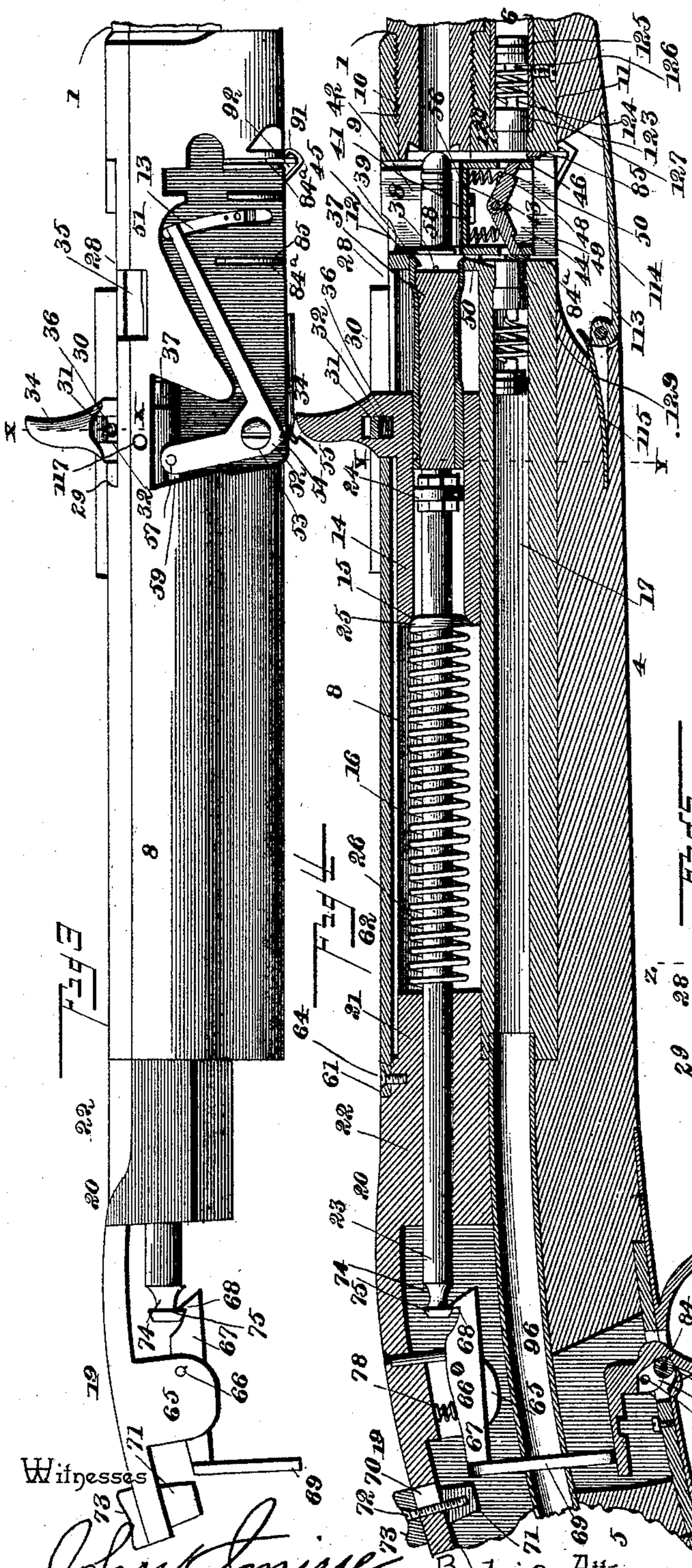
(No Model.) 4 Sheets—Sheet 2.

R. DINSMORE.

MAGAZINE GUN WITH PNEUMATICALLY OPERATED MAGAZINES.

No. 444,666. Patented Jan. 13, 1891.



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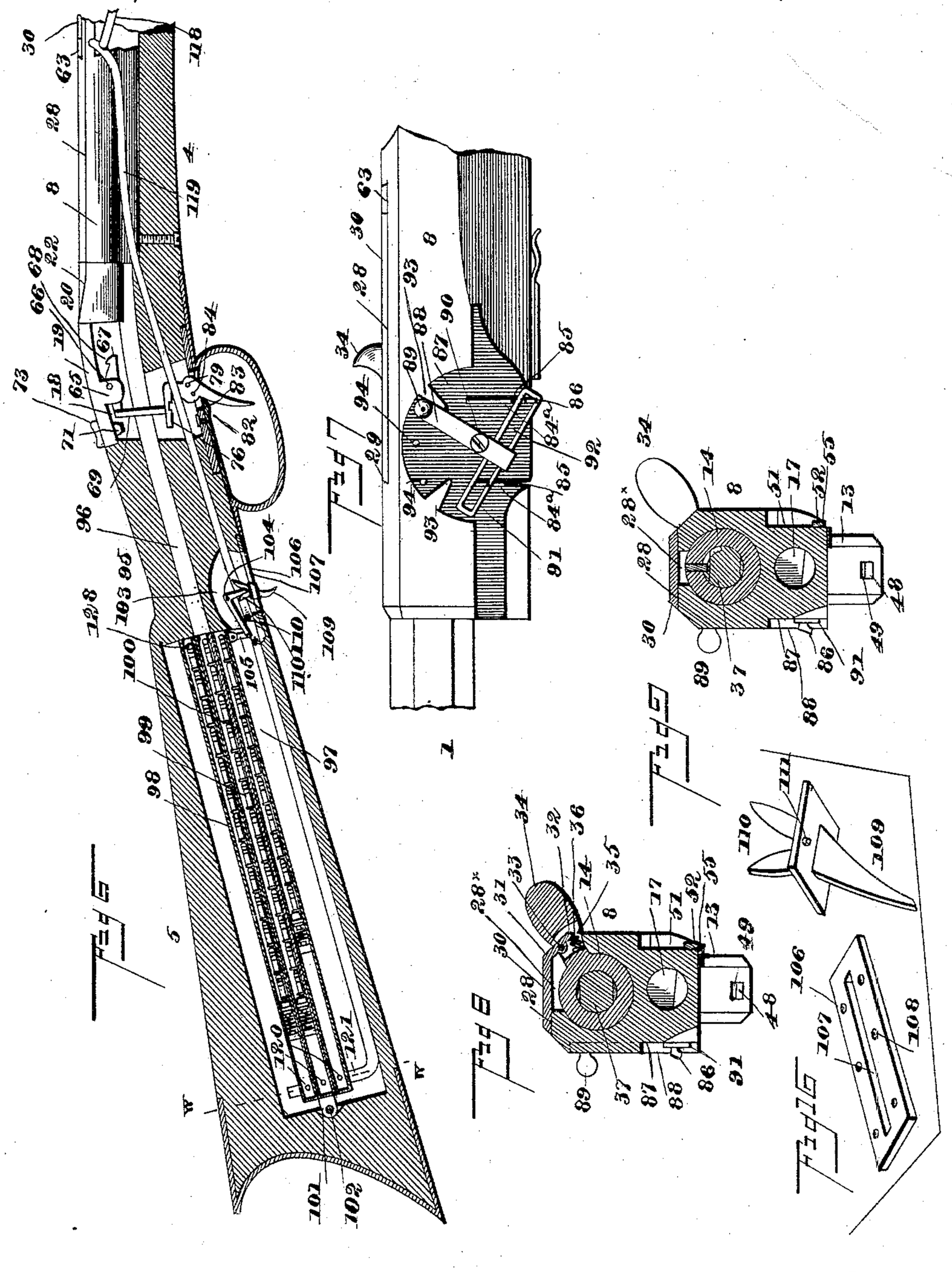
R. DINSMORE.

MAGAZINE GUN WITH PNEUMATICALLY OPERATED MAGAZINES.

No. 444,666. Patented Jan. 13, 1891.



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(No Model.) 4 Sheets—Sheet 4.

R. DINSMORE.

MAGAZINE GUN WITH PNEUMATICALLY OPERATED MAGAZINES.

No. 444,666. Patented Jan. 13, 1891.

Fig 10

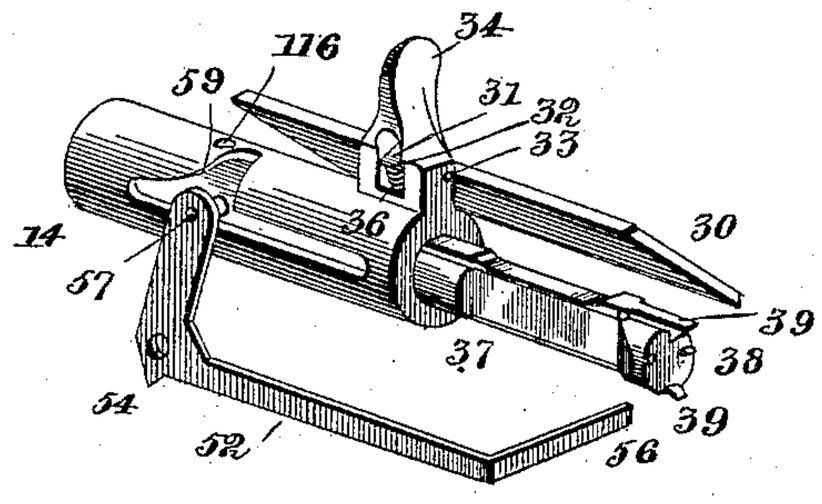


Fig 11

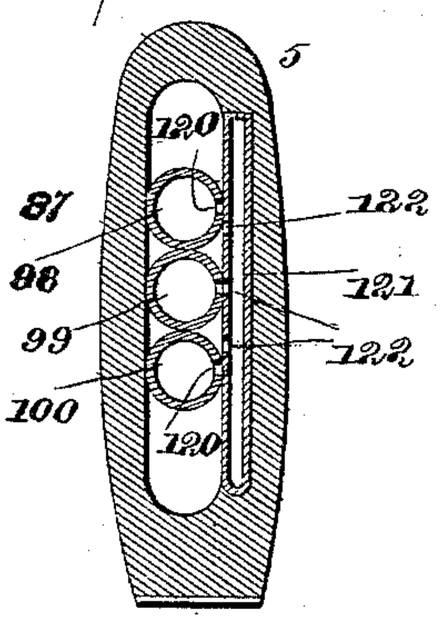


Fig 12

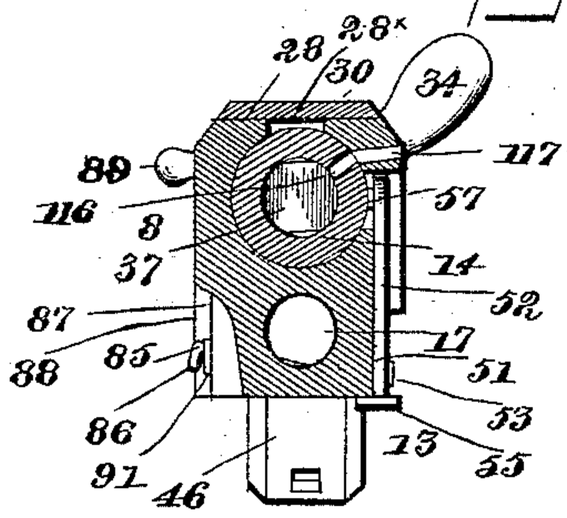


Fig 13

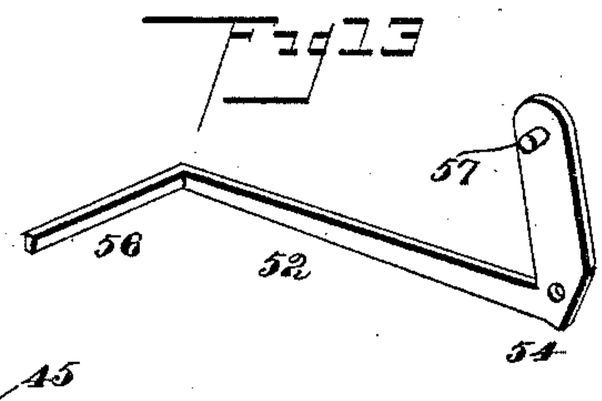


Fig 14

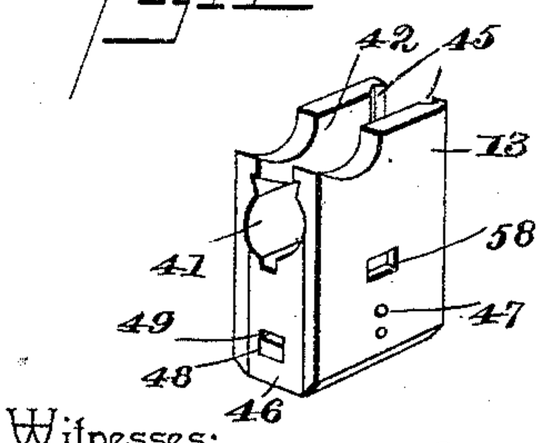
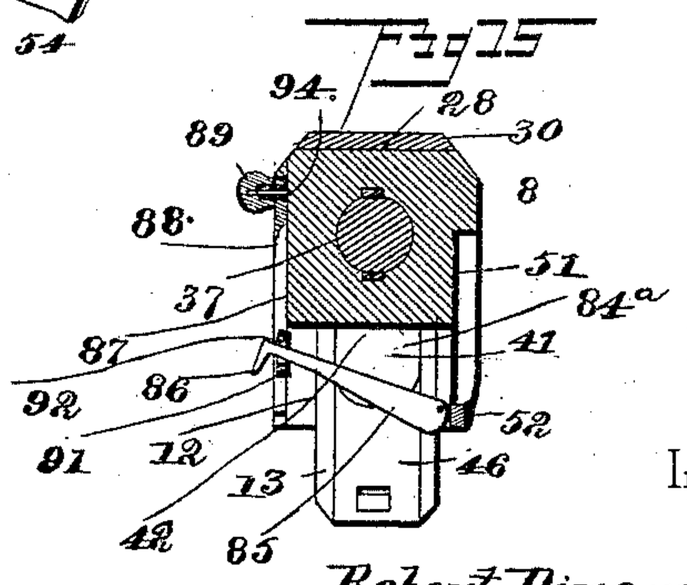


Fig 15



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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 WITH PNEUMATICALLY-OPERATED MAGAZINES.

SPECIFICATION forming part of Letters Patent No. 444,666, dated January 13, 1891.

Application filed March 21, 1890. Serial No. 344,770. (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 Fire-Arm, of which the following is a specification.

This invention has relation to improvements in magazine-guns.

The objects of the invention are to simplify the construction, reduce the number of parts, facilitate their assemblage and conjoint operation, to increase the capacities of the magazines, to provide a gun which by one movement of its carriage will withdraw and eject an empty shell, reload, and throw the firing mechanism into position for firing, which will obviate the necessity of the usual springs in the magazine for feeding the cartridges to the barrel, and to accomplish the same by means of pneumatic pressure operated by the movements of the plunger simultaneously with the discharge of the piece.

Various other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective of a magazine-gun constructed in accordance with my invention. Fig. 2 is a side elevation section of the breech-section. Fig. 3 is a similar view of the same, the carrier-block being raised and the piece ready for firing, or, in other words, the breech-plate having been swung open and to the rear and ready for closing. Fig. 4 is a central longitudinal section, the cartridge being in the act of being inserted in the breech. Fig. 5 is a similar view, the piece being loaded. Fig. 6 is a longitudinal section of the stock and rear portion of the breech-section, illustrating the rear magazine and the mechanism for adjusting the same into and out of opertive position. Fig. 7 is a side elevation of the breech-section, illustrating the means for throwing the front or rear magazine into and out of communication with the carrier-block. Fig. 8 is a transverse section on the line *x x* of Fig. 3. Fig. 9 is a transverse section on the line *y y* of Fig. 4. Fig. 10 is a perspective in detail of the carriage, firing pin or bolt, its sleeve or air-tube, and the carrier-block bell-crank. Fig. 11 is a transverse section on the line *w w* of Fig. 6. Fig. 12 is a transverse section on the line *z z*. Fig. 13 is a perspective in detail of the carrier-block bell-crank. Fig. 14 is a perspective in detail of the carrier-block. Fig. 15 is a transverse section on the line *u u* of Fig. 2. Fig. 16 are details of the rear magazine, shifting trigger, and locking-plate.

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

1 represents the barrel, which is of the usual construction, having the front and rear sights 2 and 3, respectively, and secured to the fore-arm 4 of the stock 5 in the usual manner.

6 represents the forward or front magazine, which is located under the barrel 1 and secured in position by the usual securing-rings 7, the rear end of the magazine entering the fore-arm 4 and terminating flush with the rear end or breech of the barrel 1. The upper portion of the fore-arm is not entirely occupied by the barrel, as is usual, and in the same there is located the receiver 8. The forward end of the receiver 8 is provided with an internally-threaded socket 9, into which is threaded the reduced breech portion 10 of the barrel. Below the socket 9 the receiver is provided with a plain socket 11, in which terminates the rear or discharge end of the front magazine 6.

The receiver 8 directly in rear of the breech of the gun is provided with the carrier-block opening 12, in which is mounted for reciprocation the carrier-block 13. (See Figs. 4, 5, and 14.) In rear of the opening 12 and in line with the bore of the breech there is located a cylindrical internally-bored air tube or sleeve 14, the rear end of which is slightly beveled, as at 15. In the rear of the sleeve or air-tube 14 the receiver is provided with a hollow chamber 16, and parallel with the chamber and extending throughout the length of the receiver is a cartridge-passage 17, the front end of the passage communicating with the carrier-block well 12. The upper portion of the stock 5 is recessed longitudinally, as at 18, and in the same there takes the rear extension 19 of the tail-piece 20. The tail-piece

20 is provided with a forwardly-projecting tenon 21, which enters the rear end of the receiver 8. The tail-piece is also provided with a longitudinal bar 22, (see Fig. 4,) and mounted for reciprocation in the bore is a plunger-rod 23, the front end of which enters the sleeve 14, and is provided with an air-tight head or piston 24, mounted for movement in said sleeve. In rear of the piston 24 the rod is provided with a fixed collar 25, the front face of which is beveled to agree with the bevel at the rear end of the sleeve 14. Coiled upon the plunger 23 and between the tenon 21 and the collar 25 is a spring 26, which serves to throw the plunger when the same is not otherwise influenced.

The upper side of the receiver 8 is provided with a longitudinal opening 28, the opposite ends of which are undercut or beveled, as at 29, (see Fig. 3,) to receive laterally a sliding cover or breech-plate 30, which plate is provided at one side with a perforated lug 31, projecting into a recess 32, in which said perforated lug is pivoted upon a bearing-pin 33, the recess being formed in a thumb-lug 34, projecting laterally from the sleeve and moving in the longitudinal opening 28. The opening 28 is provided with an offshoot 35, into which the thumb-piece may be thrown by a lateral swing of the same and communicates with the opening 28, in which the lug moves. By swinging the thumb-piece laterally in its recess the breech cover or plate is drawn in position to cover the opening 28, and by swinging the thumb-lug into the longitudinal opening 28 the breech cover or plate is projected laterally from over the opening, and thus uncovers the carrier-block well 12. The breech-plate is prevented from leaving the breech-piece, or rather is somewhat snugly maintained in position against the same, by means of a light spring 36, arranged in the recess 32 and under the rear end of the perforated lug 31.

Mounted loosely in the front end of the sleeve 14, so that said sleeve may be partially rotated thereon, is a firing pin or bolt 37, which pin moves longitudinally with the sleeve. The front end of the pin may be adapted for central fire; but in the present instance is shown adapted for rim-fire, and is therefore provided with diametrically-opposite shell-exploding ribs 38 and at an angle to said ribs with diametrically-opposite forwardly-disposed shell-extractors 39.

13 represents the carrier-block provided with a central longitudinal cartridge-receiving bore 41, above which said block is longitudinally recessed or bifurcated, as at 42. The bottom of the bore 41 is provided with a longitudinal groove 43, in which ride the lowest of the extractors 39, so that the bolt or pin 37 is prevented from revolving, or any movement whatever, in a lateral direction at the time that the sleeve 14 and the breech-plate are partially revolved. Below the bore 41 the carrier-block is recessed, as at 44, the opposite edges of the side walls of the recess being dovetailed, as at 45, and in said dovetails are mounted sliding shutters 46. (See Figs. 5 and 14.)

Upon a pin 47, mounted transversely in the recess 44 of the carrier-block, there is pivotally mounted a pair of leaves 48, the ends of which loosely engage openings 49, formed in the lower ends of the shutters. Between the top of the recess 44 and the inner faces of the leaves there is located a pair of light coiled springs 50, which act to normally depress the leaves, and consequently maintain the shutters in a lowered position, and so as to close the longitudinally-opposite ends of the recess 44 and the magazine-openings.

A recess 51 is formed in the side of the receiver 8, and seated in the same is a bell-crank-shaped carrier-block-supporting arm 52, which arm is pivoted, as at 53, at its angle, and at the outer portion of the angle is provided with a cam-face 54, against which rests the free end of a flat spring 55, the tendency of which is to keep the longer branch of the bell-crank elevated. As shown clearly in Fig. 13, the bell-crank is provided with an inwardly-projecting arm 56 at the extremity of its longest branch and at the opposite extremity with an inwardly-disposed bearing-pin 57. The arm 56 takes into and loosely fits an opening 58, formed in the side of the carrier-block, and the bearing 57 takes into a semi-arrow-shaped groove 59, formed in the adjacent side of the sliding and revoluble sleeve 14.

The upper front end of the tail-section 19 is provided with a circular recess 60, into which takes the head 61 of a strap 62, of a dimension adapting it to snugly fit the reduced opening or slot 28*, the large portion 28 of which is occupied, or nearly so, by the breech-plate. A slight portion of the recess 28 is uncovered by the plate, and is covered and occupied by a T-shaped head 63, formed at the front end of the strap 62. In this manner the tail-section is prevented from leaving the breech-section.

The head 61 is provided with a screw-receiving opening, and through the same is inserted a screw 64, which takes into the tail-section.

Upon the extension of the tail-section on its under side there is formed a pair of depending lugs 65, through which is inserted a transverse bearing-pin 66, upon which is pivotally mounted a catch 67, the front end of which is provided with a shoulder 68. The rear end of the catch is provided with a laterally and downwardly disposed L-shaped arm 69. The rear end of the extension 19 is provided with a slot 70, and located under the extension is a stop-block 71, connected to a pin 72, which passes through the slot 70 and is connected with a button 73, mounted for sliding on the extension 19. The plunger-rod 23 terminates in a conical head 74, in front of which there is formed an annular shoulder 75, said conical head being designed to ride over the inclined

face of the dog and the shoulder of the rod and be engaged by the shoulder of the catch.

76 represents the inverted-L-shaped trigger, the rear L portion of which rests under the depending L-shaped portion of the pivoted catch, and said latter L-shaped portion is maintained normally in a depressed position by means of a coiled spring 78, interposed between the extension 19 and the catch. The trigger 76 is pivoted upon its bearing-pin 79, and below is recessed, as at 80, for the reception of a friction-roller 81, mounted in the recess and upon a pin. A spring-detent 82 is secured to the stock and projects forward and terminates in a curved finger 83, which takes below the roller, which roller is mounted upon a pin 84 and eccentric with relation to the pivot 79 of the trigger. When the trigger is in its normal position, the detent 82 does not in any way influence the same, and the piece to be fired necessitates simply the pressing of the trigger to the rear and a consequent elevation of the upper L portion against the depending L portion of the pivoted catch, which releases the plunger-rod 23, and the collar of the same, coming in contact with the end of the sleeve, actuates the same to explode the cartridge. In thus operating the trigger it is apparent that the piece is fired against the tension of the coiled spring 26, and as said spring must be of sufficient strength to throw the bolt or plunger with sufficient force to explode the cartridge the strength of said spring must be overcome by the pressure on the trigger, which might have a tendency to destroy or affect an accurate aiming of the piece. By previously pushing the lower portion of the trigger forward, however, the same is accomplished against the tension of the spring-detent 82 and its embracing finger, and by reason of the eccentric location of the roller with the pivot-pin 79 said trigger is maintained in this forward position, but by a very slight pressure may be forced back beyond a vertical line drawn through its pivot, and the detent thus being released serves to swing the trigger with considerable force, so that its upper L-shaped end comes in contact with the depending L-shaped end of the latch, and thus tilts the dog or latch and releases the plunger-rod.

At each side of the carrier-block recess the receiver is provided with narrow slots 84ª, (see Fig. 7,) in each of which there is pivoted a gate 85. (See Figs. 7 and 15.) The gates 85 are reduced at their free ends to form headed lugs 86, which project beyond the side of the receiver, which at that side is provided with a recess 87.

88 represents a shifting-lever, provided at its free end with a thumb lug or knob 89, and pivoted near its center, as at 90, in the recess 87 and centrally between the vertically-sliding gates. A cross-arm 91 is rigid with and arranged at a right angle to the lever 88, and has its opposite extremities slotted, as at 92, to loosely engage the headed lugs of the opposite gates.

The front gate, it will be observed, covers the discharge end of the front magazine of the piece, while the rear gate in a similar manner covers the front or exit end of the bore 17 of the breech-section, so that by the construction described it will be apparent that when the exit of the front magazine is closed the exit to the bore 17 is open, and vice versa. It will also be observed that when the lever is arranged parallel with the slots in which the gates are located the magazine and the bore 17 are both closed. The upper wall of the recess 87 is semicircular and concentric with the pivot 90 of the lever 88, and said recess is provided with opposite stops 93 to limit the throw of the lever, and between the said stops the bottom of the recess is provided with three indentations 94, arranged in a concentric circle, there being an indentation located at the ends of the movements of the lever and one at the center. Thus it will be seen that the thumb-lug projecting above the arm of the stock may be operated by the person handling the piece, and it will be evident to said person when the lever is in the desired position.

Located in the grip portion 95 of the stock is a tube 96, one end of which communicates with the rear end of the bore or chamber 17, and the opposite end of which terminates at the front end of a chamber or recess 97, located in the butt of the stock. Within the recess 97 there is arranged a series of magazine-tubes, the series comprising in this instance three tubes 98 99 100, said tubes being arranged parallel with each other and joined, and at their rear ends provided with a central rearwardly-disposed perforated lug 101, pivoted in the end of the recess 97 by a bolt 102. In a small recess 103 in front of the recess 97 there is pivoted a bell-crank 104, the rear end of the bell-crank being connected to the magazines in the recess 97 by a pivoted link 105. Covering the recess 103 is a plate 106, having a longitudinal slot 107, the opposite edges of which are provided with three indentations 108. Mounted in the slot and adapted to slide within the same is a trigger 109, the upper end of which within the recess 103 is bifurcated, as at 110, and receives the disengaged end of the bell-crank. The trigger is provided with a pair of opposite lugs 111, which are adapted to take into either pair of the indentations. If the trigger be in the front pair of indentations, it is apparent that the upper magazine 98 will be thrown into alignment with the tube 96, and if it be in the rear pair of indentations the magazine 100 is thrown into alignment with the tube 96, and likewise if it be in the central pair of indentations the central magazine will be thrown into alignment and communication with the tube 96. It will thus be apparent that the magazines for the purpose of refilling

or discharging may be successively brought into alignment and communication with the tube 96, leading to the bore 17.

The fore-arm of the stock opposite the carrier-block well 12 is provided with an opening 113, and pivoted in one end of the same is a hinged cover or plate 114, a spring 115, located in rear of the opening 113, bearing upon the pivoted end of the plate and serving by reason of the angular faces of the rear end of the plate to maintain said plate either in a closed or open position.

The tube 14 is provided with a port 116, (see Fig. 10,) which when the breech-plate 30 is in a closed position is swung into register with a port 117, formed in the side of the receiver. From the port 117 there lead branch tubes 118 and 119, the tube 118 passing through the stock toward the front end and lying between the barrel 1 and the front magazine 6 and at the upper end of the magazine communicating therewith. The rear branch passes through the stock to the rear end of the recess 97, where it is bent laterally and in close contact with the rear ends of the three magazines 98 99 100. The rear ends of each of the three magazines above mentioned are provided with induction air-ports 120, and the lateral branch 121 of the tube or branch 119 is likewise provided with three ports 122. (See Figs. 6 and 11.) To load the magazines, the piece is inverted and the plate 114 opened. The lever 88 is swung against the rear stop 93, which raises the gate 85, covering the discharge end of the front magazine. The cartridges are now introduced into the rear end of the magazine through the carrier-block, the sliding shutters 46 readily yielding to the pressure caused by the introduction of the cartridges and closing as soon as the introduction is completed. In this manner the front magazine is completely filled with cartridges, after which the lever 88 is thrown to the rear position, so as to uncover the front end of the bore or chamber 17, and cartridges are now forced rear end first into said chamber. The trigger 109 is manipulated so as to bring the magazines 98 99 100 successively into register with the tube 96, so that each magazine becomes filled, and also the tube 96 and the chamber 17.

In the front magazine and behind the line of cartridges there is located a follower 123, upon the rear end of which is located a stud 124. In rear of the plate is a disk 125, upon the front base of which is a stud 126. Between the follower 123 and the disk 125 and coiled about the studs 124 and 126 is a coiled cushioning-spring 127.

To operate the front magazine the lever 88 is swung so as to open the same. The thumb-lug 34 is swung laterally to remove the plate 30 from the breech-opening. This lateral movement of the thumb-lug and plate swings the sleeve 14, so that the lug 57 of the bell-crank for raising the carrier-block takes into the lower elongated portion of the recess 59. The thumb-lug is now drawn to the rear, and with it the sleeve and plate. By reason of the elongated portion of the recess 59 the sleeve 14 can move a certain distance to the rear before the end of the recess abuts against the lug 57, at which time the advanced end of the firing-pin will be withdrawn from over the carrier-block well and from the bore 41 of the hoist-block. The movement of the sleeve 14 now begins to affect the bell-crank arm, and the latter is tilted upon its pivot so as to elevate the carrier-block. This elevation of the hoist-block raises a cartridge and presents the same to the breech of the barrel. In this rearward movement of the tube the plunger-rod 23 is moved against the tension of the coiled spring 26, and the conical head 74 rides over the inclined face of the pivoted catch until the shoulder of the catch engages the shoulder of the head 74. The piece is now cocked, and to render the same ready for firing it simply remains to move the sleeve 14 and breech-plate to the front, the firing-pin entering the bore 41 of the carrier-block, and after such movement the thumb-lug 34 is swung laterally and carries with it the breech-plate 30, which covers the breech-opening. The piece is now in condition for firing and may be discharged in the ordinary way or by setting the trigger so as to require a very light pull. After firing, the same operation takes place as before described, the hooks 39 of the firing-pin serving to lightly engage the shell of the cartridge and withdraw the same from the breech and from the bore 41 of the carrier-block, by which time the carrier-block has descended into line with the magazine to receive a fresh cartridge. During its descending movement the empty shell is supported loosely by the hooks 39, so that the slightest touch will disengage the same and eject it from the carrier-block well or chamber. When the plunger-rod 23 is withdrawn from the tube 14, the tube becomes filled with air, and when suddenly released by the trigger in the act of discharging the piece the air is suddenly compressed by the piston-head upon the plunger-rod and, finding only the port 116, makes its escape through the same, and is carried by the branch pipe or tube 118 to the front end of the magazine-chamber and behind the spring following-plate in rear of the line of cartridges. To cushion this sudden injection of compressed air, I provide the spring-follower described, and thus I obviate the necessity of providing the magazine-chambers with coiled feed-springs, which not only occupy valuable space, but are liable to lose their resiliency and refuse to properly feed the cartridges to the carrier-block. From this construction it will be apparent that the cartridges are fed positively and regardless of the number within the magazine, the last cartridge being projected into the carrier-block as promptly as the first of the series.

Supposing the front magazine to have become exhausted, we will now describe the op-

eration of successively emptying the three rear magazines, beginning with the upper magazine 98 of the series. The lever 109 is moved to the front end of the slot 107, so that its lugs will lightly interlock with the indentations located at that point. This movement of the lever tilts the bell-crank 104, which, through the medium of the link 105, swings the series of magazine-chambers upon their pivot 102, so as to bring the upper chamber 98 into line with the cartridge-tube 96. The pivot of the magazine-chambers being in rear of the ends of the same, it will be apparent that the ends of the magazines will move upon a circle concentric with its pivot. The ports 122 in the branch 121 of the air-pipe 119 are so arranged with relation to the ports 120 of the rear magazine that when one of the ports of the branch is in line or registers with any one of the ports of the magazines the remaining ports of the branch and the magazines are out of register, so in the present instance the port of the upper magazine 98 is in register with the upper port of the branch when the front end of said magazine is in line with the tube 96. It will of course be understood that the lever 88 has been swung to open the rear gate 84 and remove the same from over the front end of the chamber 17. The operation of loading, cocking, and discharging the piece is exactly the same as before described, with the exception that the air is injected in rear of the line of cartridges located in that magazine being emptied, and the cartridges are thus fed from the magazine to the cartridge-tube 96 into the chamber 17, to be successively elevated by the carrier-block and forced into the breech of the barrel. After the piece has been discharged and the firing-pin retracted with the cartridge-shell lightly supported thereby, the subsequent upward movement of the carrier-block striking the shell serves to eject the same from the carrier-block well.

The piece is designed to contain one hundred and fifty cartridges of the "short" pattern, or ninety-seven of the "long" pattern. The front magazine is designed to carry sixty of the short cartridges, the remaining quantity being contained in the three magazines 98 99 100 and in the tube 96 and chamber 17.

The upper magazines 98 and 99 are provided with fillets 128, the lower magazine being plain, and in each of the magazines there is mounted a spring cushion-follower similar to the one mounted in the front magazine, which latter magazine is also provided with a fillet 129 at its discharge end. The fillets prevent the spring-follower from leaving the magazine-chambers. The lower magazine 100 being minus a fillet, however, and being the last one discharged, it is apparent that the follower therein will be free to pass into the chamber 96 and 17 and up to the breech-block recess. This lower magazine having been the last fired will naturally be in the position to be the first of the three magazines so be recharged, and thus the spring-follower belonging to that magazine will be forced back into its proper position previous to the time that the two upper magazines are successively brought into the recharging position.

Having thus described my invention, what I claim is—

1. In a magazine-gun, the combination, with a stock having a recessed butt and a tube leading from the recess, and a breech-section mounted upon the fore-arm of the stock and provided with a carrier-block moving across the tube, of a series of magazines pivoted in the recess of the butt and adapted to be swung so as to bring either into line with the tube of the stock, means, substantially as specified, for raising and lowering the breech-block, and means for feeding the cartridges from the magazines, substantially as specified.

2. In a magazine-gun, a recessed stock, in combination with a series of magazine-tubes pivoted at their rear ends in the recess, and means for swinging the series of tubes upon their pivot, so as to bring either one of the same into line with a cartridge-tube located in the grip of the stock, substantially as specified.

3. In a magazine-gun, a stock provided with a recess and in the grip of the same with a cartridge-passage, in combination with a series of magazine-tubes arranged parallel with each other and pivoted at their ends in the rear end of the recess, a bell-crank lever arranged in front of and below the magazines, a link pivotally connecting one branch of the same with the magazines, and a pivoted trigger loosely connected to the opposite end of the bell-crank and adapted to operate the same upon its pivot so as to raise and lower the magazines, substantially as specified.

4. In a magazine-gun, the combination, with the recessed butt of the stock provided with a cartridge-passage communicating with the recess and formed in the grip of the stock, of a series of parallel magazine-tubes pivoted at their rear ends in the rear end of the recess of the stock, a bell-crank lever pivoted in a recess in front of the magazine-recess, and a link loosely connecting one branch of the lever with the series of magazines, a plate longitudinally slotted, mounted over the bell-crank-receiving recess, and provided at its opposite edges with indentations, and a trigger having opposite lugs adapted to take into the indentations, and having its upper end bifurcated to receive the remaining branch of the bell-crank, substantially as specified.

5. In a magazine-gun, the combination, with a stock having a recess, of a series of magazine-tubes pivotally mounted in the recess and provided at their rear ends with ports, means for raising and lowering the tubes, an air-tube arranged adjacent to the magazines and having ports so located that when one registers with a port of a magazine the others are

out of register and closed, and means, substantially as specified, for forcing air from the tube into the magazines, substantially as specified.

6. In a magazine-gun, the combination, with a stock having a recess and a magazine located therein, of an air-tube leading to the rear end of the magazine, and means for forcing air into the tube, substantially as specified.

7. In a magazine-gun, the combination, with a stock provided with a recess, of a magazine-tube located therein, a spring-follower mounted in the tube, an air-pipe communicating with the tube, and means for forcing air into the pipe and tube in rear of the follower, substantially as specified.

8. In a magazine-gun, the combination, with a magazine, of an air-tube leading to the rear end of the same, and means, substantially as described, for forcing air into the tube at each discharge of the piece, substantially as specified.

9. In a magazine-gun, the combination, with a magazine, of a tube having an air-port, a pipe leading from the port to the rear end of the magazine, a headed plunger mounted in the tube, means for withdrawing the plunger and locking the same and for releasing the plunger, and a spring for throwing the plunger after its release, substantially as specified.

10. In a magazine-gun, the combination, with a magazine, of a tube having an opening, an air-pipe leading from the opening in the tube to the rear end of the magazine, a plunger having a head mounted in the tube and provided at its rear end with a shoulder and between its ends with a coiled spring, means for withdrawing the plunger from the tube, a pivoted catch spring-pressed for engagement with the shoulder, and a trigger adapted to be swung into contact with the rear end of the catch for depressing the front end of the catch out of engagement with the shoulder of the plunger, substantially as specified.

11. In a magazine-gun, the combination, with a magazine, of a sleeve having an opening, a plunger having a piston mounted for movement in the sleeve and having a coiled spring for forcing the same into the sleeve and terminating at its rear end in a shoulder and at its front end in a firing-pin, a pivoted latch adapted at its front end to engage the shoulder and having a depending L-shaped arm, and a pivoted trigger having an inverted-L-shaped arm depressed by the L-shaped arm of the latch, substantially as specified.

12. In a magazine-gun, the combination, with a front and rear magazine, of an intermediate tube having a port, oppositely-disposed air-pipes branching from the port and communicating with the rear ends of the front and rear magazines, a plunger having a piston-head mounted in the tube, a spring for throwing the plunger, and means for retracting and locking the plunger and for releasing the same, substantially as specified.

13. In a magazine-gun, the combination, with a series of rear magazines located in a recess in the stock of the gun and means for throwing either one of said series into line with a cartridge-tube located in front of the recess and in the stock, and a front magazine located under the barrel, of a tube provided with an orifice located between the front and rear magazines, a plunger having a piston mounted in the tube, a coiled spring for throwing the plunger, a pivoted latch for engaging the rear end of the plunger and terminating at the opposite side of the pivot in an L-shaped arm, an inverted-L-shaped trigger depressed by the arm, opposite air-pipes branching from the orifice of the tube, one of the air-tubes leading to the rear end of the front magazine and the opposite tube to the rear ends of the rear magazines, and means for throwing either one of said magazines into communication with said air-tube, substantially as specified.

14. In a magazine-gun, a magazine, in combination with a follower formed of opposite disks having an interposed cushioning-spring, an air-tube communicating with the rear end of the magazine, and means for injecting compressed air through the tube into the magazine in rear of the follower, substantially as specified.

15. In a magazine-gun, front and rear magazines terminating in rear of the breech of the barrel, in combination with pivoted gates located over the ends of the magazine, and means, substantially as described, for opening one gate and simultaneously closing the opposite gate, substantially as specified.

16. In a magazine-gun, the combination, with a receiver having a carrier-block well, a carrier-block mounted therein, and front and rear magazines communicating with the recess at opposite sides, of slots arranged in the walls of the recess opposite the openings of the magazines, gates pivoted over the openings and for movement in the slots, and a lever pivoted between the slots and having a lateral arm loosely engaging the ends of the gates, substantially as specified.

17. In a magazine-gun, the combination, with a receiver having a carrier-block well, front and rear magazine-passages communicating with the opening and provided with opposite slots, and a recess formed in one side of the receiver and provided with stops and indentations, of opposite gates mounted in the slots, a lever pivoted intermediate the slots within the recess and provided with a thumb-lug and a detent for taking in the indentations, and at the opposite side of its pivot with a longitudinally-slotted cross-arm engaging reduced ends of the gates, substantially as specified.

18. In a magazine-gun, a receiver having a carrier-block well and opposite cartridge-passages communicating with the opposite ends of the opening, a carrier-block mounted in the opening and provided with opposite recessed edges, and spring-pressed shutters

mounted in the recesses and adapted to normally close the passages and to yield for the introduction of the cartridge into the passages, substantially as specified.

19. In a magazine-gun, the combination, with a receiver having a carrier-block well the wall of which is slotted, of a carrier-block mounted for vertical movement in the opening, a bell-crank pivoted in rear of the opening and having one of its terminals loosely engaging the block and passing through the slot in the wall of the opening, and means for tilting the bell-crank, substantially as specified.

20. In a magazine-gun, the combination, with a receiver having a carrier-block well, one wall of which is slotted, of a carrier-block mounted in the opening, a bell-crank pivoted in rear of the opening and having one of its terminals inwardly bent to loosely engage the hoist-block, and a sliding tube mounted for movement above and in rear of the opening and loosely connected with the opposite branch of the bell-crank, substantially as specified.

21. In a magazine-gun, the combination, with a receiver having a carrier-block well an opening above the same, and a bore below the opening and in rear of the wall, of a bell-crank pivoted to the receiver in rear of the well, one arm of the bell-crank passed through a slot in the wall of and into the well, the carrier-block mounted in the well and engaged by the said arm, a reciprocating sleeve mounted in the bore and having at one side a recess the base of which is elongated, and in which terminates the opposite arm of the bell-crank, a thumb-lug mounted upon the sleeve, and a plate hinged to the lug and mounted in the opening of the receiver and adapted for lateral movement into and out of the same, substantially as specified.

22. In a magazine-gun, the combination, with a receiver having a breech-opening and in rear of the same provided with a way, of a sliding tube mounted in the way and provided with a thumb-lug having an opening, a breech-plate adapted to close the opening in the breech and having a perforated lug pivoted in the opening of the thumb-lug, and a spring arranged under the lug of the plate in rear of its pivot, substantially as specified.

23. In a magazine-gun, the combination, with a receiver having a longitudinal bore, of a sliding tube mounted in the bore and provided at one end with a firing-pin and in rear of the same with an operating-lug projecting upwardly through a slot in the receiver, a plunger provided with a piston-head mounted in the tube, a spring for throwing the same, said plunger terminating at its rear end in a shoulder, a spring-latch for engaging the shoulder, and a trigger for operating the latch to release the plunger, substantially as specified.

24. In a magazine-gun, the combination, with a magazine, a receiver having a bore, and a reciprocating tube mounted in the bore and provided with an operating-lug projecting through a slot in the receiver, of a plunger-rod having a piston, and in rear of the same a fixed collar for striking the end of the tube, a spring coiled upon the plunger for throwing the same, means for locking and releasing the plunger, an air-pipe leading from the reciprocating tube in front of the piston of the plunger and communicating with the rear end of the magazine, and a firing-pin mounted at the front end of the reciprocating sleeve, substantially as specified.

25. In a magazine-gun, the combination, with a receiver having an opening, of a bore arranged longitudinally in the receiver, magazine-passages terminating at each side of and near the bottom of the opening, a breech-arm, a carrier-block mounted in the opening, a hollow sleeve mounted for sliding in the bore and provided with a loose firing-pin adapted to enter an opening in the block, and said sleeve being provided with a recess elongated at its lower end, a bell-crank pivoted in rear of the hoisting-block and having one end engaging said block and the opposite end taking in the recess of the sleeve, a flat spring bearing against the shoulder formed within the bell-crank in front of its pivot, so as to normally elevate the same, a plunger mounted in the sleeve and provided at its front end with a piston and in rear of the same with a sleeve-striking collar, a spring coiled about the plunger, a pivoted spring-pressed latch arranged in rear of the plunger and adapted to engage a shoulder formed upon the same, a trigger for tilting the latch to release the plunger, and an air-tube leading from the sliding sleeve to the rear of the magazine, substantially as specified.

26. In a magazine-gun, a receiver having a carrier-block well and a longitudinal way in rear of and communicating with the opening, in combination with a carrier-block having a firing-pin-receiving opening, a reciprocating firing-pin, and a hollow sleeve revolubly mounted thereon and provided with a recess terminating in an elongated groove, and a bell-crank pivoted in rear of the carrier-block, connected thereto at one branch and having its opposite branch terminating in the groove of the sleeve, substantially as specified.

27. In a magazine-gun, the combination, with the stock having a recess in its butt, a breech-section, and barrel secured to the stock, of a magazine located under the barrel, a series of magazines located in a recess in the stock and adapted to be thrown into line with a cartridge-passage formed in the breech-section, a sleeve mounted above the cartridge-passage, a piston and plunger mounted in the sleeve, branch pipes leading from the sleeve to the front and rear magazines, and means for withdrawing the plunger, locking and releasing the same, substantially as specified.

28. In a magazine-gun, the combination, with a sleeve having a firing-pin, of a plunger

mounted in the sleeve and having a collar for abutting against the rear end of the same and terminating at its rear end in a shoulder, a pivoted latch for engaging the shoulder, and a locking-block mounted in rear of the latch and having a pin mounted in a slot above the latch and formed in the receiver, and a push button or slide mounted on the upper end of the pin, substantially as specified.

29. In a magazine-gun, the combination, with a receiver having an opening and opposite cartridge-passages leading from the magazines to the opening, of a carrier-block mounted in the opening and having its lower end recessed and provided at opposite sides with dovetailed ways, sliding shutters mounted in the ways, a bearing-pin mounted in the recess, leaves pivoted on the bearing-pin and having their free ends engaging openings in the shutters, and springs bearing upon said free ends of the leaves for depressing the shutters, substantially as specified.

30. In a magazine-gun, the combination, with a carrier-block having a bore the bottom of which is provided with a groove, of a firing-pin having an arm or rib for engaging the groove, and a hollow sleeve adapted to partially revolve upon the firing-pin and to withdraw and insert the same, substantially as specified.

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

ROBERT DINSMORE.

Witnesses:
J. H. SIGGERS,
R. W. DAYTON.