(No Model.) 2 Sheets—Sheet 1.

S. B. SHAFFER.

MAGAZINE GUN.

No. 435,905. Patented Sept. 2, 1890.

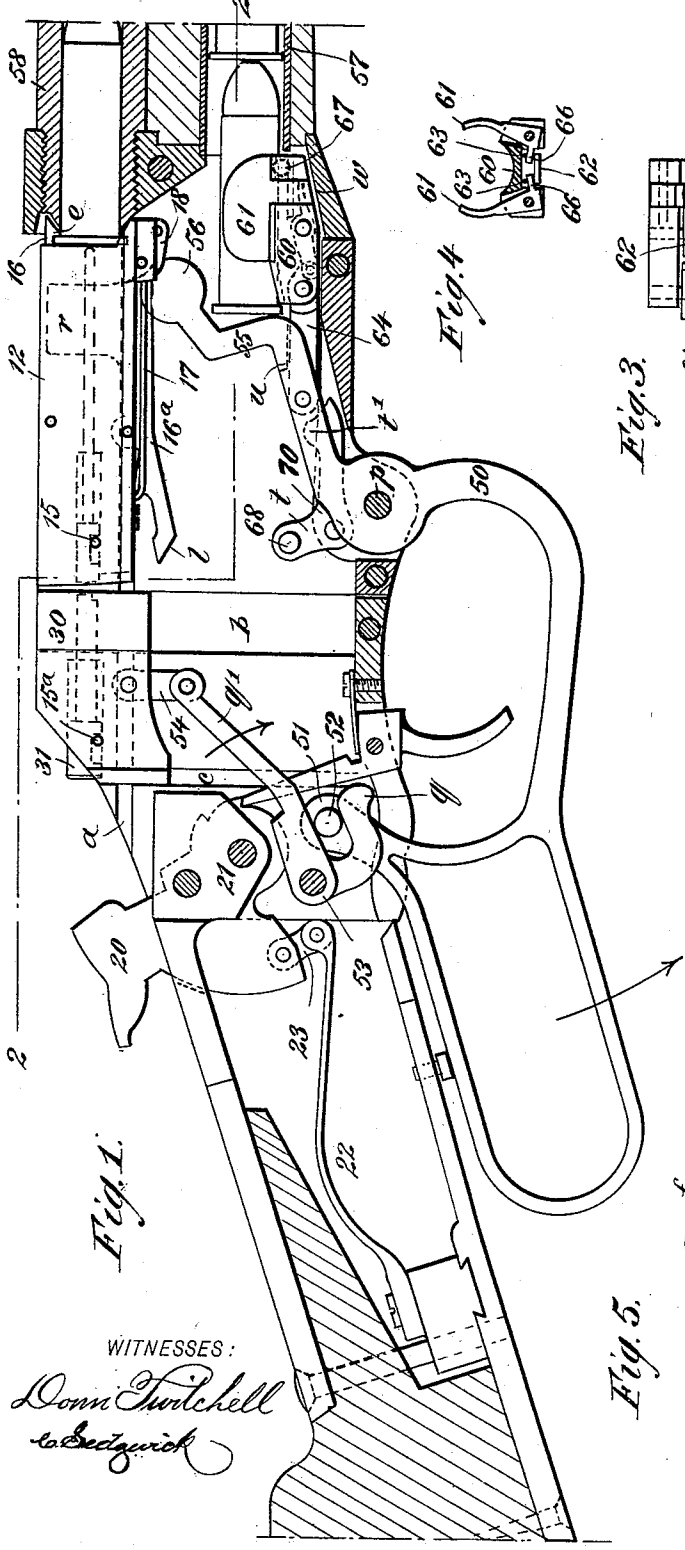


Fig. 1.

Fig. 4.

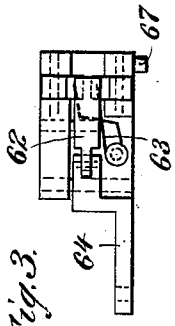


Fig. 3.



Fig. 5.

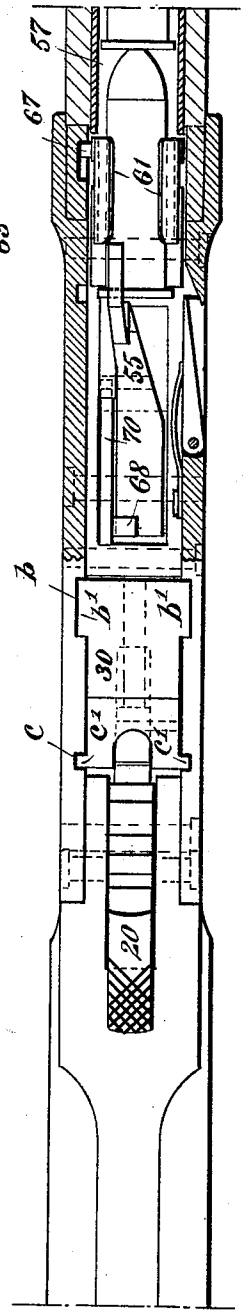


Fig. 2.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.)

2 Sheets—Sheet 2.

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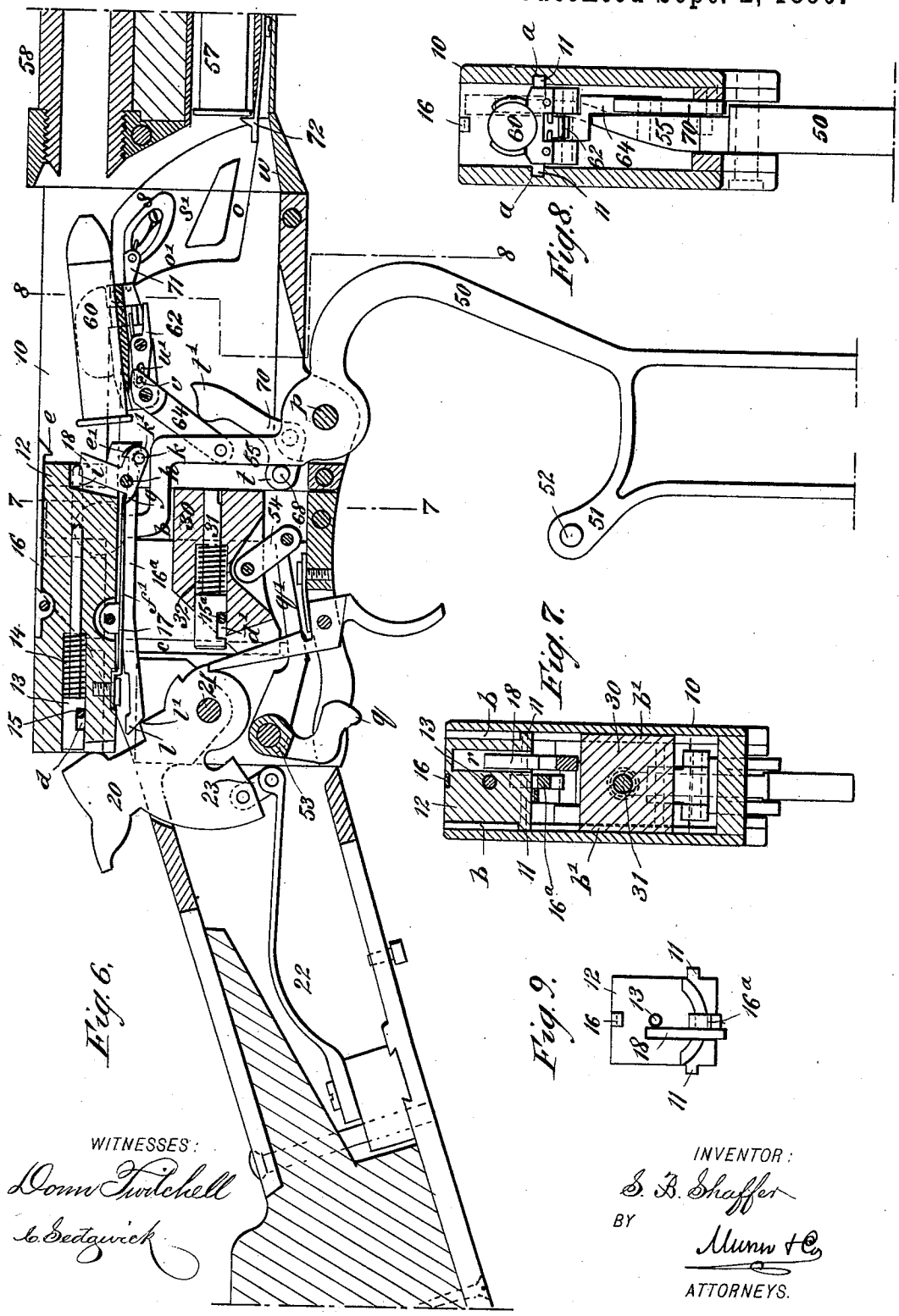


Fig. 6.

Fig. 8.

Fig. 7.

Fig. 9.

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UNITED STATES PATENT OFFICE.

SIMON B. SHAFFER, OF EKALAKA, MONTANA.

MAGAZINE-GUN.

SPECIFICATION forming part of Letters Patent No. 435,905, dated September 2, 1890.

Application filed November 19, 1889. Serial No. 330,865. (No model.)

To all whom it may concern:

Be it known that I, SIMON B. SHAFFER, of Ekalaka, in the county of Custer and State of Montana, have invented a new and Improved Magazine-Gun, of which the following is a full, clear, and exact description.

This invention relates to magazine-guns of the type wherein a horizontally-sliding breech bolt or block is operated by a lever that swings downward beneath the frame, and wherein a tubular magazine located beneath the barrel is employed, the main objects of the invention being to firmly lock the breech bolt or block in position at the time of firing, to obviate the throwing of the breech block or bolt to the rear of the hammer when the breech is opened, and to improve the extractor mechanism.

The invention will first be described, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a longitudinal sectional view of my improved magazine-arm, the view being taken just inside of the right-hand plate of the frame, and the parts being represented as they appear when in the firing position. Fig. 2 is a sectional plan view on line 2 2 of Fig. 1. Fig. 3 is an inverted plan view of the carrier-block and its attachments. Fig. 4 is a cross-sectional view of the carrier-block. Fig. 5 is a plan view of the combined extractor and ejector-spring. Fig. 6 is a central longitudinal sectional view of the arm, the parts being represented as they appear when the breech is open. Fig. 7 is a cross-sectional view on line 7 7 of Fig. 6. Fig. 8 is a cross-sectional view on line 8 8 of Fig. 6; and Fig. 9 is a detail view of the forward end of the forward section of the breech block or bolt.

In the drawings above referred to, 10 represents the lock case or frame, the side plates of which case or frame are formed with horizontal grooves *a* and with vertical grooves *b* and *c*. The horizontal grooves *a* are entered by flanges 11, that extend laterally from the side faces of the breech-block proper 12. Within the breech-block 12 I arrange the forward firing-pin section 13, such firing-pin section being normally held retracted by a spring 14, the action of the spring, however, being controlled by a stop or limit pin 15, carried by the breech-block 12, the pin 15 riding in a slot *d*, that is formed in the firing-pin. The upper face of the block 12 is recessed to receive the body of a spring-extractor 16, such extractor being formed with a hook *e*, while the lower face of the block is recessed to receive an extractor 16^a, formed with a hook *e'*, such hook being normally held in a position to engage a cartridge-rim by the arm *f* of a spring 17, the other arm *f'* of such spring engaging a heel *g*, that extends to the rear from an ejector 18, such ejector being pivotally mounted at *h* and being normally held within a recess *i* by the arm *f'* of the spring 17. The extractor 16^a extends over a lateral projection *k*, carried by an arm *k'*, that extends forward from the pivotal support of the ejector, the arrangement being such that if the forward end of the extractor 16^a be thrown downward the ejector will be moved to the position in which it is shown in Fig. 6 and the forward end of the empty shell tilted upward.

To bring about the desired movement of the forward end of the extractor 16^a, I form such extractor with a rearwardly-extending arm having an inclined face *l*, which, when the block 12 is moved to the rear, will bear against a shoulder *l'*, formed upon the hammer 20, said hammer being mounted upon a pivot-pin 21 and connected to the mainspring 22 by a link 23.

To the rear of the block 12 I mount a locking-block 30, which has side flanges *b'* and *c'*, such flanges riding in the grooves *c* and *b*. The block 30 is bored to receive the rear firing-pin section 31, which section is normally held retracted, as represented in Fig. 6, by a spring 32, the throw of the spring being limited by a stop 15^a, that is carried by the block and rides in a slot *d'* formed in the firing-pin.

In order that the blocks 12 and 30 may be reciprocated within their ways, I provide an operating-lever 50, that is pivotally mounted at *p*, and this lever I form with a spur or arm 51, which has lateral projections 52, which said projections, when the parts are in the

position in which they are shown in Fig. 1, rest above the short arms q of a lever 53, the long arms q' of such lever being connected to the block 30 by a link 54. The lever 50 is also provided with a forwardly-extending arm 55, which has a flat head 56, which, when the parts are in the position shown in Fig. 1, rests somewhat below the lower surface of the block 12 and directly beneath a recess r formed in said block.

From the construction above described it will be seen that when the lever 50 is thrown, as indicated by its arrow, (see Fig. 1,) the initial movement of the lever 50 will carry the lever 53, as indicated, and as the lever 53 so moves the block 30 will be carried downward to the position in which it is shown in Fig. 6—that is, to a position below the block 12. The above-described movement of the lever 53 will carry the arms q to a position such that the lever projections 52 will clear said arms, and just as the lever projections 52 clear the arms q the head 56 of the arm 55 will be brought to bear against the rear defining-wall of the recess r, and any continued movement of the lever 50 will carry the block 12 to the rear, and eventually to the position in which the parts are shown in Fig. 6, this rearward movement of the block 12 forcing the hammer 20 backward to its cocked or firing position.

In order that the cartridges may be transferred from the tubular magazine 57 to the cartridge-receiving chamber of the barrel 58, I provide a carrier-block 60, which has pivotally-mounted side wings 61, that are normally held, as represented in Fig. 8, by springs 63, which bear upon projections 66, that extend inward from the wings. The carrier-block is pivotally connected to a link 64, that is also pivotally connected to the arm 55 of the lever 50, the link 64 extending forward from its pivotal connection with the arm beneath a shoulder u, that is formed on the arm.

In order that the wings 61 may be moved to the position in which they are shown in Fig. 4—that is, to a position to permit of the passage of a cartridge-rim—I provide a tongue 62, that is pivotally connected to the block 60 and arranged to bear upon the wing projections 66, the rear end of this tongue 62 being slotted, as shown at w', (see Fig. 6,) to engage a pin v, carried by the link 64, the arrangement being such that if the forward end of the cartridge-carrier be raised the forward end of the tongue 62 will be carried upward and will throw the wings 61 outward against the tension of their springs 63. This is the position the parts assume whenever the lever 50 is thrown upward, as represented in Fig. 1, the forward portion of the carrier-block 60 at this time riding up upon an inclined surface w and the rear portion of the carrier-block being held down by the action of the shoulder u upon the link 64.

In the inner face of one of the side plates I form grooves o o' s s', such grooves being adapted to receive a projection 67, that extends laterally from the carrier, the arrangement being such that as the lever 50 is thrown downward the carrier will be drawn to the rear, its projection 67 at this time riding in the groove o; but just as the projection 67 reaches the rear end of the groove o beneath the groove o' the arm 55 of the lever 50 will bear upon a projection 68, that is carried by the short arm t of a lever 70, said lever 70 being pivotally mounted to the left of the lever 50, and any continued movement of the lever 50 will rock the lever 70 in a manner such that its long arm t' will be raised to bear against the link 64, and thereby raise the forward end of the link, and with it the carrier, thus moving the carrier to a position such that when the motion of the lever 50 is reversed the cartridge held by the carrier will be borne upon by the forward end of the block 12 and forced forward into the firing-chamber of the barrel, the projection 67 at this time traveling forward in the groove or way s, finally arriving at the position in which the parts are shown in Fig. 1.

Although not positively essential, I prefer to provide a switch 71, that is arranged as shown in Fig. 6, and although any proper attachment might be employed to retain the cartridge within the magazine, I prefer to employ a spring-catch 72, which catch is depressed when the carrier is moved downward to a position proper to receive a cartridge from the magazine.

One great advantage of the construction above described is that it is impossible to explode a cartridge until the breech and locking blocks are in firing position and the breech-block firmly locked to place, whereby the danger of the blowing of the breech-block to the rear by a premature explosion is avoided.

In referring to "horizontal" and "vertical" movements in the above description and in the following claims I desire it to be understood that when such terms are employed the gun is supposed to be in the firing position.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the lock case or frame and a longitudinally-reciprocating breech-block, of a locking-block mounted in vertical ways to the rear of the normal position of the breech-block and having its lower end at all times within the case or frame, the lowest downward movement of the said locking-block being above the bottom of the lock case or frame, and mechanism for operating said breech and locking blocks, substantially as set forth.

2. The combination, with the lock case or frame, the hammer, and the reciprocating breech-block, the rear end of which rests in its extreme retracted position against the striking-face of the cocked hammer, and a le-

ver for throwing the breech-block rearwardly into said position, of a vertically-reciprocating locking-block mounted in vertical ways to the rear of the normal position of the breech-block and a lever in the casing connected to the said locking-block and in the path of the first-named or main operating-lever, substantially as set forth.

3. The combination, with a breech-block mounted in horizontal ways, of a locking-block mounted in vertical ways to the rear of the position normally occupied by the breech-block, a lever 50, formed with an arm having a head that is arranged to enter a recess formed in the breech-block and with laterally-extending projections, and a lever formed with arms that are connected to the locking-block and with other arms that are arranged to be engaged by the laterally-extending projections of the operating-lever, substantially as described.

4. The combination, with a breech-block, of an extractor 16, a tilting extractor 16^a, extending, respectively, along the top and bottom of the breech-block to engage the cartridge-flange with their forward ends, and means, substantially as described, for tilting the extractor 16^a, as and for the purpose stated.

5. The combination, with a breech-block, of an extractor arranged in the upper portion thereof, a tilting extractor arranged in the lower portion thereof, a means for tilting the lower extractor, an ejector carried by the forward end of the breech-block, and means for tilting the ejector forwardly against the shell, substantially as described.

6. The combination, with a breech-block, of an upper extractor, a lower tilting extractor, a shoulder or abutment to engage the rear end of the lower extractor and tilt it when the breech-block is retracted, an ejector formed with a laterally-extending projection that is borne upon by the lower extractor to throw the said ejector into action, and springs arranged in connection with the lower extractor and the ejector to hold them in their normal position, substantially as described.

7. In a magazine-gun, the combination, with a carrier-block, of wings pivotally connected thereto, a spring arranged in connection with the wings, and a longitudinally-extending lever or tongue pivoted on the lower side of the block for throwing the wings against the tension of their spring, substantially as described.

8. In a magazine-gun, the combination, with the carrier-block, of wings pivotally connected thereto, a spring arranged in connection with the wings, a tongue pivotally connected to the block and arranged in connection with the wings, a link to which the block is pivotally connected, a connection between the tongue and link, an operating-lever formed with an arm to which the link is pivotally connected, a pivotally-mounted lever 70, having a projection 68 and an arm t', which arm, when the operating-lever is depressed, will bear against the link, and an inclined surface w, substantially as described.

9. In a magazine-gun, the combination, with a frame formed with grooves o, o', and s, of a carrier-block having a laterally-extending projection 67, adapted to enter said grooves, and wings pivotally connected thereto, a spring arranged in connection with the wings, a tongue pivotally connected to the block and arranged in connection with the wings, a link to which the block is pivotally connected, a connection between the tongue and link, an operating-lever formed with an arm to which the link is pivotally connected, a pivotally-mounted lever 70, having a projection 68 and an arm t', which arm, when the operating-lever is depressed, will bear against the link, and an inclined surface w, substantially as described.

10. The combination, with a frame formed with grooves o, o', and s, and provided with a switch 71, of a carrier-block having a laterally-extending projection 67, adapted to enter said grooves, and wings pivotally connected thereto, a spring arranged in connection with the wings, a tongue pivotally connected to the block and arranged in connection with the wings, a link to which the block is pivotally connected, a connection between the tongue and link, an operating-lever formed with an arm to which the link is pivotally connected, a pivotally-mounted lever 70, having a projection 68 and an arm t', which arm, when the operating-lever is depressed, will bear against the link, and an inclined surface w, substantially as described.

SIMON B. SHAFFER.

Witnesses:
G. M. MILES,
WM. F. MILLARD.