

No. 612,085.

Patented Oct. 11, 1898.

T. WRIGHT.
MAGAZINE FIREARM.

(Application filed Sept. 10, 1897.)

(No Model.)

2 Sheets—Sheet I.

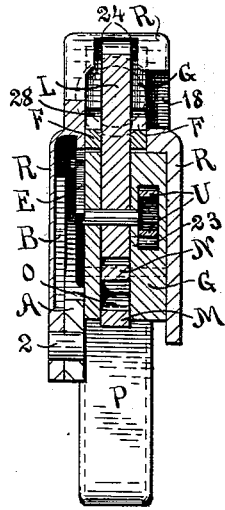
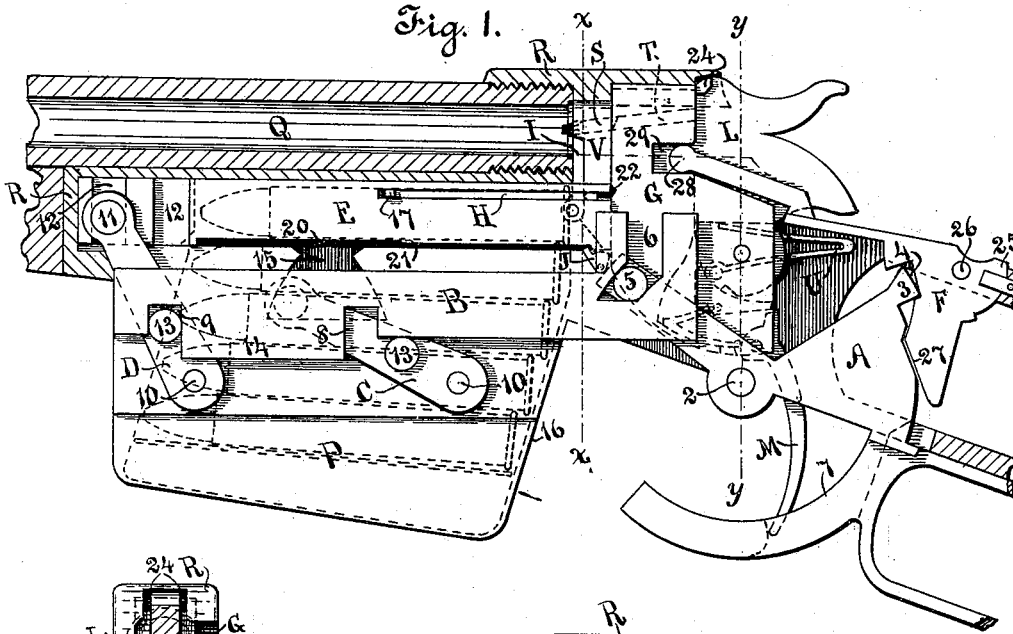


Fig. 5.

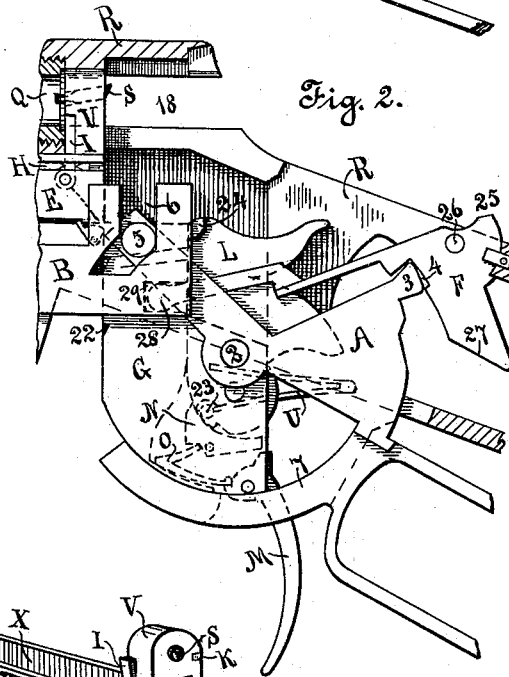


Fig. 2.

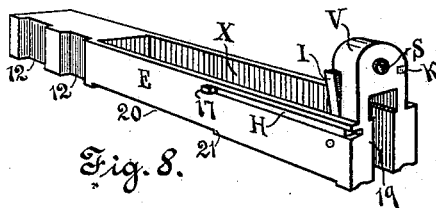


Fig. 8.

WITNESSES:

A. S. Diven
L. Tracy Stagg.

INVENTOR

Theodore Wright

BY

Eugene Diven
ATTORNEY

No. 612,085.

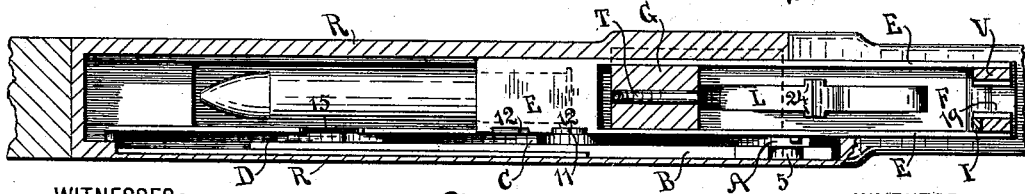
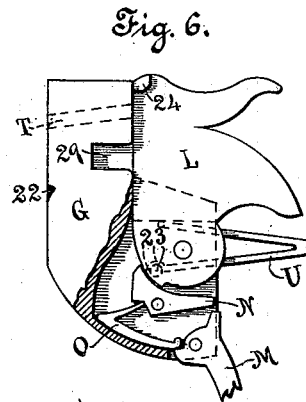
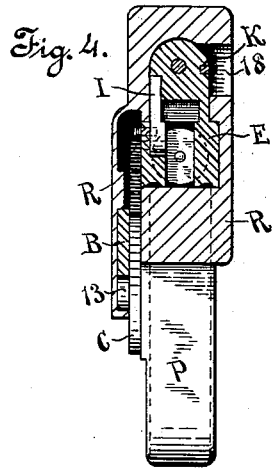
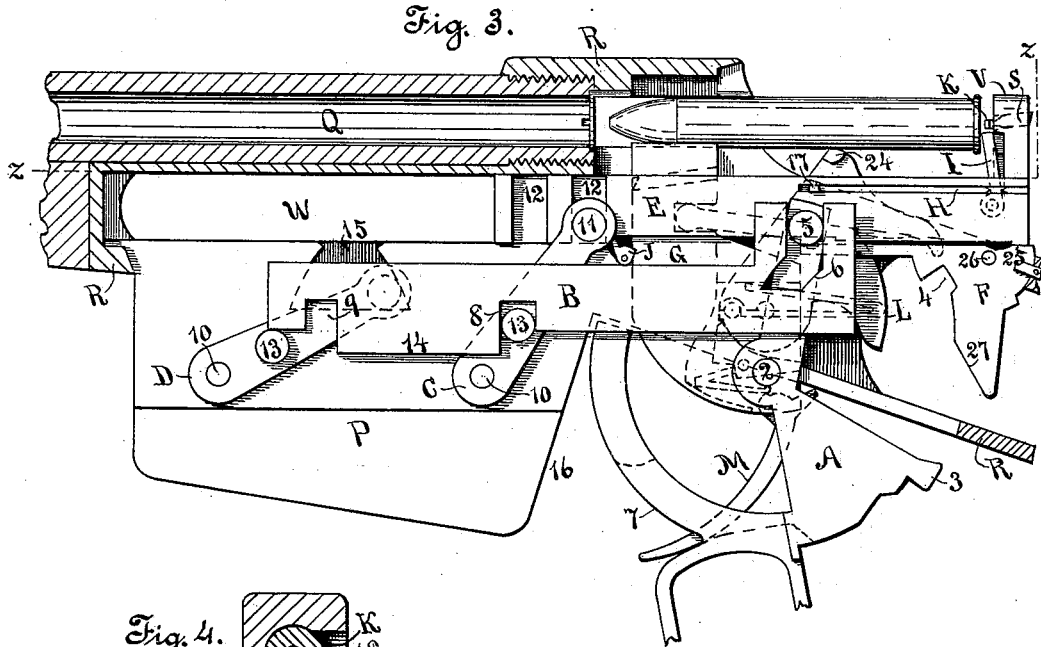
Patented Oct. 11, 1898.

T. WRIGHT.
MAGAZINE FIREARM.

(Application filed Sept. 10, 1897.)

(No Model.)

2 Sheets—Sheet 2.



WITNESSES:
A. S. Diven
C. Tracy Stagg.

Fig. 7.

INVENTOR
Theodore Wright.
BY
Eugene Diven
ATTORNEY

UNITED STATES PATENT OFFICE.

THEODORE WRIGHT, OF BENTLEY CREEK, PENNSYLVANIA.

MAGAZINE-FIREARM.

SPECIFICATION forming part of Letters Patent No. 612,085, dated October 11, 1898.

Application filed September 10, 1897. Serial No. 651,200. (No model.)

To all whom it may concern:

Be it known that I, THEODORE WRIGHT, a citizen of the United States, residing at Bentley Creek, in the county of Bradford and State of Pennsylvania, have invented certain new and useful Improvements in Magazine-Firearms, of which the following is a specification.

My invention relates to improvements in magazine-firearms in which the cartridges are contained in a magazine in front of the stock, below the barrel, and lifted into position for insertion into the barrel one at a time; and the objects of my improvements are, first, to provide a shorter and more compact firearm, and, second, to provide a leverage system which will give a longer travel to the cartridge-shifter, and thereby adapt this class of firearms to the very long cartridges now coming into use. I accomplish these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation with the barrel in longitudinal section and the receiver cut away to show the operating mechanism in closed and locked position; Fig. 2, a similar view showing the operating-lever at the first stage of its throw, the locking-block having been dropped down and the cartridge-shifter about to be withdrawn; Fig. 3, a similar view showing the operating-lever at its extreme throw, the cartridge-shifter completely withdrawn, and a cartridge thrown up ready to be inserted into the barrel when the operating-lever is drawn back; Fig. 4, a cross-section on the line *xx* in Fig. 1; Fig. 5, a cross-section on line *yy* in Fig. 1; Fig. 6, a detail showing the locking-block partly broken away to show the firing mechanism; Fig. 7, a longitudinal section on the line *zz* in Fig. 3, and Fig. 8 a perspective view of the cartridge-shifter.

Similar letters and numerals refer to similar parts throughout the several views, and the terms "right," "left," "forward," and "rear" refer to the gun when held against the shoulder in position for firing.

The operating mechanism consists, mainly, of an operating-lever A for imparting motion to the parts; a cartridge-shifter or shuttle E

V to extract the fired shells, withdraw the cartridges singly from the magazine P, and charge the barrel Q; two coördinating levers D C to exaggerate the motion of the operating-lever and impart it to the cartridge-shifter; a connecting-bar B to connect the operating-lever with the coördinating levers; a vertically-sliding locking-block G, which also acts as a carrier, shifts the firing mechanism, and locks the gun; a locking-block lever F to raise and lower the locking-block; a receiver R or framework of suitable shape to contain the foregoing parts, and a magazine P, which may be in one piece with the receiver or made detachable, whichever is more desirable.

The operating-lever A is pivoted at 2 in the left wall of the receiver R. It has two arms, the rear one having a tooth projecting at 3 to engage a notch 4 in the locking-block lever F. (See Figs. 1 and 2.) The forward arm has a round cam 5 projecting from its left-hand side and engaging a slot 6 in the rear end of the connecting-bar B. The trigger-guard of the operating-lever is provided with a vertical slot at 7 to contain the trigger M when the locking-block is lowered and to retain and return it to its proper position for firing the arm when closed.

The connecting-bar B slides longitudinally backward and forward in a groove formed in the left wall of the receiver. (See Figs. 4 and 5.) It is provided with three vertical slots 6, 8, and 9 cut in the directions shown, the rear slot 6, which receives the cam 5, departing from the vertical at its lower portion and following for a short distance the arc described by the cam 5 when the finger-lever is turned about its pivot-pin 2.

The coördinating levers D C are pivoted to the left wall of the magazine P on the outside at 10 a sufficient distance apart to insure clearing one another in their sweep. Cams 11 11 are placed on the right side of the free or distal ends of these levers to engage slots 12 12 cut in the left face of the cartridge-shifter E V. Cams 13 13 are also placed at suitable intermediate points on the levers facing outwardly or to the left to engage the two forward slots 8 9 in the connecting-bar B. The portion of the connecting-bar between

the two slots is prolonged downward to form a shoulder 14, which strikes the cams 13 13 of the coördinating levers when in their retired positions, as C in Fig. 1 and D in Fig. 3, and forces them into the slots in the connecting-bar, as has occurred to C in Fig. 3, thus imparting motion to the levers and causing their distal cams 11 11 to be thrown into gear with the shifter E V. The connecting-bar in this manner has one or the other of the coördinating levers geared with it and the shifter always, and when the shifter is at half-travel moving in either direction both levers are in equal engagement, the slots 8 9 in the connecting-bar and 12 12 in the shifter being placed at such distances apart that one lever does not become disengaged from the shifter until the other is fully in engagement, whereby a continuous and steady motion is imparted to the shifter. The side wall of the magazine is cut away at 15, so as to allow either coördinating lever to drop out of engagement with the shifter. The magazine is placed beneath the barrel Q, being a continuation of the receiver downward. It is shaped suitably for placing the cartridges one above another, as in other box-magazines, with this difference, that the rear wall 16 is sloped from above downward and forward to permit the cartridge-rims to overlap to the rear instead of to the front, as is usual in magazines of this type. This is to provide for the cartridges being drawn to the rear after they have been fed into the shifter, as will presently appear.

No device for pressing the cartridges upward out of the magazine is offered or shown, the gun mechanism being intended for and capable of combination with any of the types of box-magazines now in use. Between the magazine and barrel a space or chamber W (see Figs. 3 and 7) is provided in the receiver for the reception of the cartridge-shifter. This chamber may be closed laterally on either side by a swinging or sliding gate, (not shown,) which will open to permit the magazine to be charged from above when the shifter is thrown to the rear, as in Fig. 3.

The cartridge-shifter E is an L-shaped piece, the longer arm fitting into the chamber W above the magazine. The inside of this arm is cut out, forming an oblong slot or crib X, open above and below, the inside width and height corresponding to the diameter of the cartridge to be used at its widest part or head and the length slightly exceeding that of the cartridge. In the closed position of the firearm, as presented by Fig. 1, this crib portion of the shifter lies directly above the opening into the magazine, so that a cartridge from the magazine may be pushed up into it. The forward end of the shifter in advance of the crib is solid and has two vertical slots 12 12 cut in its left lateral face for the reception of the cams of the coördinating levers. This solid end portion, by projecting forward over the magazine-opening when the shifter is

drawn back, prevents the escape of a cartridge into the chamber W and the consequent blocking of the arm. The rear end of the shifter or rear wall of the crib is extended upward vertically at V and covers the breech-opening or chamber in the barrel Q. The face of this breech-block V, which abuts against the barrel, is of the same width as the cartridge-head and is rounded to correspond with it in outline at the top. It fits in a recess in the receiver of similar outline and size. Let into the right-hand side of this breech-block at K is the usual spring-hook extractor to hook over the head of a cartridge in the barrel-chamber and withdraw it when the shifter moves to the rear. On the opposite or left-hand side at I a long arm or lever for ejecting the shells is recessed into the breech-block and pivoted to it at the lower end. A horizontal rod H is fitted into a suitably-shaped slot cut in the side of the shifter and hooks around the lever I above its pivotal point, the forward end of the rod being provided with an outwardly-projecting lug at 17. When the shifter is thrown back and just before the end of its travel, this lug strikes a suitably-located shoulder on the inside wall of the receiver, causing the bar H to throw the lever I forward, which gives the shell a twist to the right and ejects it through an opening 18, cut in the side of the receiver. (See Figs. 2, 3, and 5.) A T-shaped slot 19 is cut through the breech-block V of the cartridge-shifter to allow for the passage of the hammer L when the shifter is thrown forward, the locking-block G being at that time raised, as shown in Fig. 3. A short firing-pin S is placed in the upper part of the breech-block at a suitable angle to connect with a second firing-pin T in the locking-block G. In the under edge of the shifter E, on the left side, is a longitudinal cut 20, having a shoulder at 21, from which point to the rear the cut is of less depth, as shown. A small latch J, pivoted in the receiver, has a slight projection, which enters this cut, so that when struck by the shoulder at the forward end of the cut, as shown in Fig. 3, the latch is thrown into a notch 22 in the locking-block and locks the block in place until the shifter has been thrown forward again sufficiently for the shoulder 21 to strike the projection and retire the latch. The locking-block is then released, so that it may be thrown down and up again in the manner presently to be set forth.

The locking-block G lies back of and against the breech-block V of the cartridge-shifter, locking the shifter in place against back pressure from an exploding cartridge in the barrel. The locking-block slides vertically in a groove cut in the right side of the receiver and contains in a medial recess the hammer L, sear N, trigger M, and trigger and sear spring O. A second recess at the right of this first recess contains the mainspring U, the

latter being connected to the hammer L by pin 23, projecting from the right side of the hammer through an annular slot cut through the party wall, as indicated in Figs. 5 and 6.

5 The top of the locking-block is thrown up into a corresponding recess in the top of the receiver, and it is slightly concaved for the reception of a cartridge when acting as a carrier. The hammer when not cocked projects

10 above the locking-block. When the locking-block is dropped, as in Fig. 2, just sufficiently low to be cleared by the shifter E V in its rearward movement, the hammer is caught by the two laterally-projecting ears 24 24, engaging the sides of the slot 19 in the breech-block V, and is forced backward to full-cock, where it is held by the sear N, the cartridge-shifter passing over it. The locking-block, then in its lowest position, lies in the hollow

20 of the trigger-guard carried by the operating-lever, and the trigger passes through the slot 7 in the guard, as previously mentioned, and is thrown up out of the way thereby. The locking-block lever F is pivoted in the upper tang of the receiver and forms in part a movable portion of the tang, which drops down out of the way when the cartridge-shifter is thrown back. It also causes the cartridge-shifter at the end of its backward travel to

30 raise the locking-block and elevate the cartridge in line with the barrel, since the short arm 25 is forced down as soon as the rear end of the shifter passes the pivot-pin 26, the long arm then assuming the position shown in Fig. 3.

35 When the operating-lever is thrown back and the shifter forward, the tooth 3 encounters a suitably-inclined surface 27 on the downward projection of the lever F, forcing the lever to throw the locking-block down again, so that the rear end of the shifter may pass over it. The locking-block lever F is slotted, so that it straddles the hammer, the distal ends 28 28 of this forked lever being rounded, so as to slide properly in the slots

40 29 29, cut in each cheek of the locking-block.

45 The operation of the firearm is as follows: After a cartridge has been fired the parts of the mechanism will have assumed the position shown in Fig. 1. The first movement of

50 the operating-lever causes the tooth 3 to swing the lever F down, dropping the locking-block to the position shown in Fig. 2. During this initial movement of the operating-lever the cam 5 on its forward arm will have traveled through the curved portion of slot 6 in connecting-bar B and that bar will have remained stationary. On the continued movement of the operating-lever the cam 5 will act on the rear wall of slot 6, imparting a backward motion to bar B. This bar in turn acts on the lever D, causing it to swing backward and starting the cartridge-shifter in its rearward movement. Next the shoulder 14 strikes the cam 13 of the lever C, causing the

65 lever to rotate and its cam 11 to rise out of the recess 15 and enter the rear slot 12 in the

shifter when in proper alinement. The cam 11 on lever D now drops into the recess 15, and the lever C carries the shifter to its extreme rearward position. The lever D becomes locked in the position shown in Fig. 3

70 by reason of the lower edge of the bar B bearing on the cam 13 and holding the lever with its cam 11 resting on the bottom of the recess 15. In the same way the lever C becomes locked on the forward movement of the shifter, and neither lever can rattle nor get out of place. As the shifter travels backward it strikes the projecting ears of the hammer and throws it back to full-cock, where it

80 is held by the sear N. Next in order the lug 17 on the rod H strikes the shoulder on the inside of the receiver, and the shell extracted from the barrel is expelled to the right through the opening 18. The rear end of the shifter

85 now strikes the arm 25 of the locking-block lever F, causing the lever to raise the locking-block and elevate the cartridge, which has been drawn from the magazine, into line with the barrel. This cartridge is supported by

90 the locking-block and hammer in grooves cut longitudinally along their top edges. The operating-lever is now swung back, but the locking-block remains stationary by reason of the latch J having been brought into engagement with the notch 22. The cam 5 acts on the forward side of the slot 6, sending the bar B forward again and imparting a corresponding motion to the shifter E V. The breech-block V of the shifter comes up against

100 the cartridge and presses it into the barrel-chamber, the cartridge being supported and guided by the locking-block until it has been run some little distance into the barrel. This movement of the shifter carries the breech-block V past the hammer, which, with its ears, passes out of the crib through the T-slot 19. Shoulder 21 now strikes the latch J, causing it to release the locking-block, which is immediately dropped down out of

110 the way of the shifter by reason of the tooth 3 striking the inclined surface 27 and forcing the lever F downward. When the shifter has regained its original position, at which time a new cartridge springs up into its crib,

115 the operating-lever has still to complete its backward swing, during which the tooth 3 enters slot 4 and throws up the lever F, which in turn raises the locking-block and locks the gun with the hammer at full-cock ready for

120 firing. All this is done by one short swing of the operating-lever forward and back, and it can readily be seen that the longest cartridges can be transferred from magazine to barrel and fired in very rapid succession.

125

The gun is automatically cocked; but, if desired, it may be uncocked and cocked by hand when the parts have assumed their normal position after inserting a cartridge.

The travel of the cartridge-shifter may be made greater or less by properly proportioning the coördinating levers D C and the dis-

130

tances apart of their cams and this without changing the throw of the operating-lever.

It will be therefore evident that firearms embodying my invention can be made to accommodate a large range of cartridges and that they are especially adapted for the longest cartridges. Moreover, the total length of the firearm is not in the least affected by the size of the cartridge to be used, since the position of the inner end of the barrel relatively to the stock remains the same, the magazine and shifter only being lengthened or shortened forward of the point of jointure of barrel with receiver, according to the cartridges to be used. By my construction I also materially shorten the length over all firearms in which a box-magazine is used, since I am enabled to locate the magazine directly beneath the breech end of the barrel.

I do not wish to confine myself to the application of my system of coördinating levers to the precise form and arrangement of cartridge-shifter shown nor to box-magazine arms alone, since I believe myself to be the first to apply to magazine-firearms of any type a system whereby a small motion of the finger-lever can be exaggerated into any desirable larger motion of the cartridge-shifter.

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

1. In a magazine-firearm, the combination of a longitudinally-movable cartridge-shifter, a vertically-movable locking-block, and a lever system whereby the shifter is made to reciprocate and the locking-block to rise through the shifter in a slot provided therein to elevate the cartridge carried by the shifter into alinement with the barrel-chamber, substantially as described.

2. In a breech-loading firearm, the combination of a vertically-movable locking-block, a trigger carried thereby, an operating-lever adapted to operate the locking-block, and a finger-guard carried by the operating-lever and provided with a slot wherein the trigger is guided and actuated substantially as and for the purpose set forth.

3. In a magazine-firearm, the combination of a box-magazine, an intermediate chamber beneath the barrel-chamber into which the magazine opens, a longitudinally-movable cartridge-shifter traveling in said intermediate chamber across the mouth of the magazine, a crib in the shifter into which the cartridges are delivered from the magazine, a breech-block rising vertically from the rear end of the shifter, extracting and ejecting devices attached thereto, and a lever system whereby the shifter in one complete reciprocation is made to extract and expel a spent shell and transfer a fresh cartridge from magazine to barrel-chamber, substantially as described.

4. In a magazine-firearm, the combination of a longitudinally-movable cartridge-shifter, a vertically-movable locking-block, a hammer

pivoted in and projecting above the locking-block coacting with the shifter to be cocked during the backward travel of said shifter, and a lever system to impart the required relative motions to the parts, substantially as described.

5. In a magazine-firearm, the combination of a longitudinally-movable cartridge-shifter, a vertically-movable locking-block adapted to rise through the shifter when in its rearward position to elevate a cartridge carried by the shifter, a hammer carried by the locking-block, ears on the hammer engaged by the shifter during its rearward travel to cock the hammer and passing through a slot in the end of the shifter during its forward travel, and a lever system to impart the required relative motions to the parts, substantially as described.

6. In a breech-loading firearm, a compound lever system comprising a reciprocating member of the breech mechanism, an operating-lever, two coördinating levers, a connecting-bar to impart motion from the operating-lever to the coördinating levers, and connections between the coördinating levers and the reciprocating member, whereby the coördinating levers are brought into successive engagement with the reciprocating member and the movement of the operating-lever is exaggerated in said member, substantially as described.

7. In a magazine-firearm, the combination of a cartridge-shifter, an operating-lever, two coördinating levers, and a connecting-bar to impart motion from the operating-lever to the coördinating levers and through them to the cartridge-shifter, whereby the movement of the operating-lever is exaggerated in the cartridge-shifter substantially as described.

8. In a magazine-firearm, the combination of a longitudinally-movable cartridge-shifter, two coördinating levers pivoted to the receiver below the shifter, cams on the distal ends of the levers to engage suitably-disposed slots in the side of the shifter, intermediate cams on the levers, a connecting-bar provided with slots to engage said intermediate cams, and an operating-lever having an arm provided with a cam at its distal end to engage a slot in the rear end of the connecting-bar to impart motion thereto, substantially as described.

9. In a magazine-firearm, the combination, with a cartridge-shifter, of a locking-block, lock-container, and cartridge-carrier in one piece, and a lever system to impart the necessary relative motions to the parts, substantially as described.

10. In a magazine-firearm, the combination of a longitudinally-movable cartridge-shifter, a vertically-movable locking-block, a lever pivoted in the receiver at the rear of the locking-block in operative connection therewith, an operating-lever to impart motion to the shifter and to depress, release and elevate said lever, a rearwardly-projecting arm on the lever engaged by the end of the shifter

to partially elevate the locking-block when
the lever is released, and a downward pro-
jection on the lever provided with an inclined
surface engaged by the operating-lever in its
5 backward throw to again depress the locking-
block while the shifter is returned to normal
position, substantially as described.

In testimony whereof I have affixed my sig-
nature in presence of two witnesses.

THEODORE WRIGHT.

Witnesses:

A. S. DIVEN,
C. TRACEY STAGG.