

M. BYE.
MAGAZINE PISTOL.

No. 562,455.

Patented June 23, 1896.

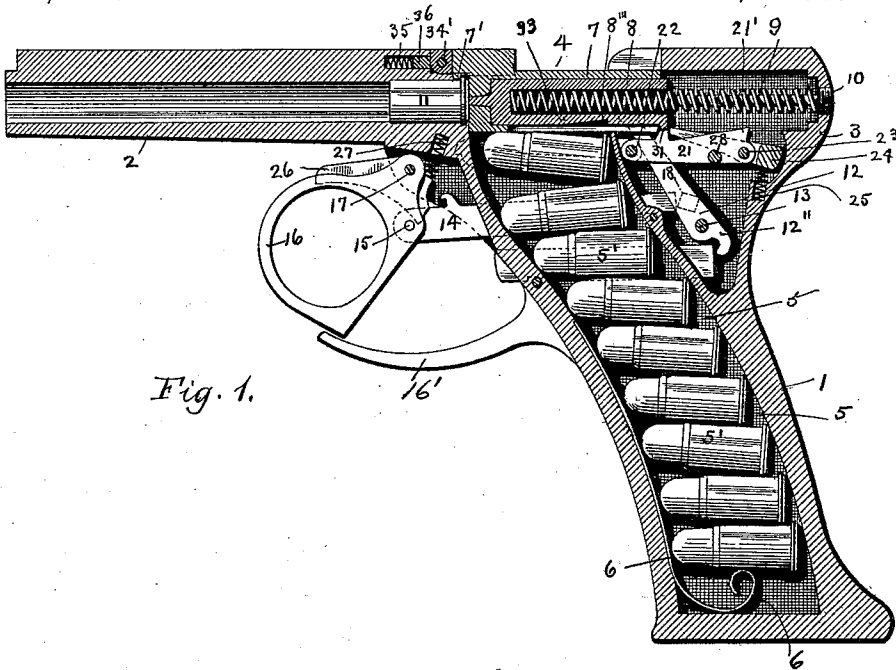


Fig. 1.

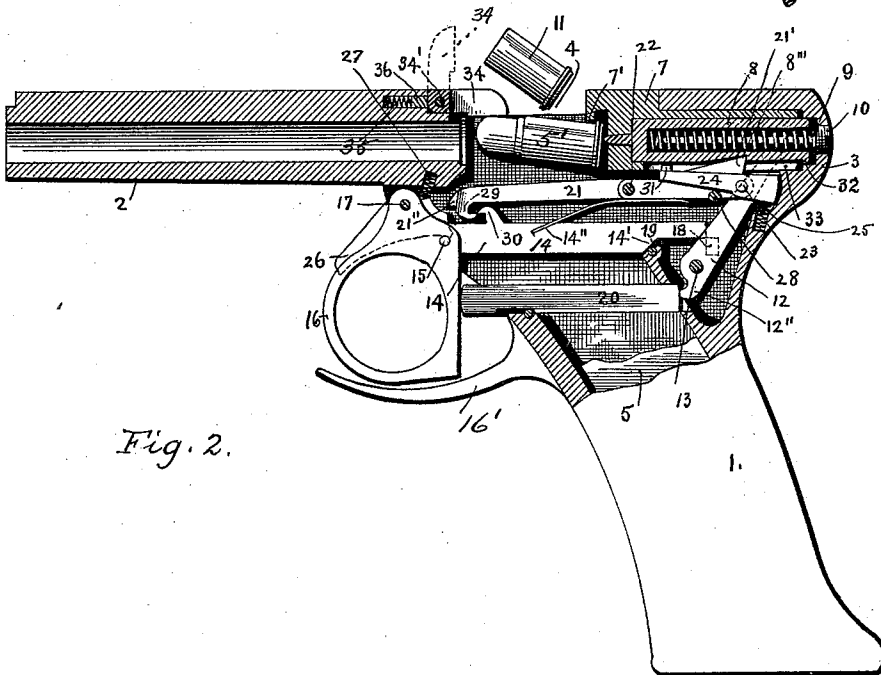


Fig. 2.

Witnesses:

Chas. F. Stimmel
M. J. Galvin

Inventor.

Martin Bye,

By
John C. Dewey
Attorney.

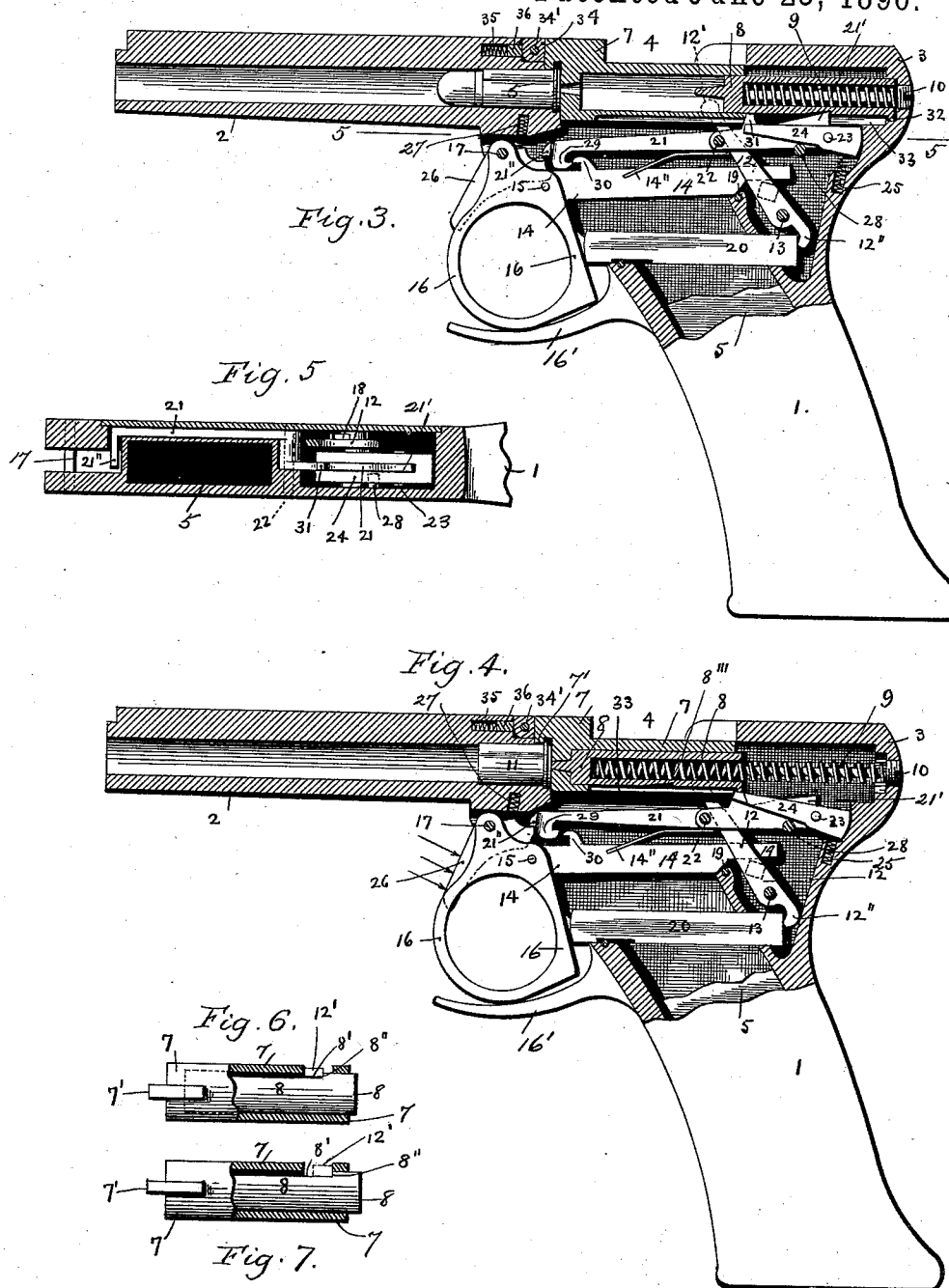
(No Model.)

2 Sheets—Sheet 2.

M. BYE.
MAGAZINE PISTOL.

No. 562,455.

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Chas. F. Shively
Wm. J. Galvin

Inventor.

Martin Bye,

By
John C. Dewey
Attorney.

UNITED STATES PATENT OFFICE.

MARTIN BYE, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO JOHN C. SPEIRS, OF SAME PLACE.

MAGAZINE-PISTOL.

SPECIFICATION forming part of Letters Patent No. 562,455, dated June 23, 1896.

Application filed April 22, 1895. Serial No. 546,690. (No model.)

To all whom it may concern:

Be it known that I, MARTIN BYE, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Magazine-Pistols, of which the following is a specification.

My invention relates to magazine-pistols of that class which are provided with a magazine, extending vertically in the handle portion of the pistol; and the object of my invention is to improve upon the construction of said magazine-pistols, as now ordinarily made, and to provide a magazine-pistol of simple construction and effective operation, and containing but few parts; and my invention consists in certain novel features of construction and operation of my magazine-pistol, as will be hereinafter fully described, and the nature thereof indicated by the claims.

Referring to the drawings, Figure 1 is a central longitudinal section through my pistol, showing the magazine filled with cartridges and the operating parts of the pistol in the position they occupy after the pistol has been fired and the trigger and operating-lever released. Fig. 2 is a sectional view of the upper part of the pistol, showing the position of the operating parts upon the ejecting of the cartridge-shell, preparatory to transferring a cartridge from the magazine to the barrel. Fig. 3 corresponds to Fig. 2, but shows the position of the operating parts after the cartridge has been transferred from the magazine to the barrel. Fig. 4 shows the position of the operating parts immediately after the firing of the pistol and before the trigger and operating-lever have returned to the position shown in Fig. 1. Fig. 5 is a cross-section on line 5 5, Fig. 3, looking in the direction of arrow *a*, same figure. Fig. 6 is a sectional detail of the sliding cylinder and firing-pin removed, showing the upper end of the cylinder-operating lever in its forward position, preparatory to returning the firing-pin and cylinder to their rearward position; and Fig. 7 corresponds to Fig. 6, but shows the operating-lever moved back, having started the firing-pin preparatory to moving back the cylinder.

In the accompanying drawings, 1 is the

handle portion of the pistol, 2 the barrel, and 3 the frame or breech, in which are located the operating parts or mechanisms.

Extending vertically in the handle 1 and through the upper part of the frame 3 to an opening 4 in the top of the frame is a magazine or chamber 5 for the cartridges 5', which are arranged horizontally in said chamber and are adapted to be forced up to be loaded into the barrel, in this instance by means of a flat coiled spring 6, free at its lower end, and similar to an ordinary clock-spring.

I will now describe my mechanism for cocking the firing-pin, and for withdrawing and ejecting the discharged shell, and for transferring another cartridge from the magazine into the barrel, preparatory to again firing the pistol, and for releasing the firing-pin to fire the pistol.

In the upper part of the frame 3 a breech-bolt 7 is arranged horizontally, and adapted to have a reciprocating motion in a horizontal plane, and to be moved rearward into the upper rear part of the frame 3 to leave open the opening 4 through the upper part of the frame through which the cartridge-shell is ejected, and to be moved forward to close said opening 4.

Within the breech-bolt 7 a spring-actuated firing-pin 8 is adapted to have a longitudinal motion and to be moved back with the breech-bolt 7 when the firing-pin is cocked, and moved forward, independently of the breech-bolt, after said cylinder is moved forward to fire the cartridge. The firing-pin 8 is cored out centrally to receive the spiral spring 9, which is supported at its inner end on a pin 10, secured in the end of the frame.

The front end of the breech-bolt 7 is provided with a hook 7', which is adapted to extend over and engage the flange on the head of the cartridge, as shown in the drawings, so that upon the rearward movement of the breech-bolt 7, after the pistol is fired, the cartridge-shell will be withdrawn from the barrel and will be ejected through the opening 4, as shown in Fig. 2, by the upward pressure of the next cartridge, leaving the hook 7' on the breech-bolt 7 to extend over and engage the flange on the head of the next cartridge, as shown in said figure.

In order to communicate a reciprocating motion to the breech-bolt 7, to withdraw the shell of the cartridge, as above described, and to transfer the next cartridge from the magazine into the barrel, I provide a swinging lever 12, located in the frame 3, at the rear of the magazine 5, and pivoted at its lower end on a pin 13.

The upper end 12' of the lever 12 is preferably made rounded, and is adapted to extend into a notched or cut-out portion 7'' on one side of the breech-bolt 7, as shown in Fig. 6. The firing-pin 8, which extends within said breech-bolt, is provided with a flattened portion 8' on one side thereof, so as to leave a shoulder 8'' thereon, as shown in Figs. 6 and 7, and against said shoulder the upper end 12' of the lever 12 strikes in the backward movement of said lever. The lever 12 is moved backward by a lever 14, arranged horizontally in the frame, at one side of the cartridge-magazine, in this instance beyond said magazine. Said lever 14 is pivotally connected at one end by a pin 15 to the operating finger-lever 16, which extends upon the outside of the pistol, over the guard 16', and is pivoted on a pin 17 in the front portion of the frame. The rear side of the lever 14 is adapted to engage a projection 18, in this instance on the inner side of the lever 12, so that the backward movement of the finger-lever 16, from the position shown in Fig. 1 to the position shown in Fig. 2, through the lever 14 engaging the projection 18 on the lever 12, will move back the lever 12, and with said lever the breech-bolt 7 and firing-pin 8, said breech-bolt and firing-pin being engaged by the upper end 12' of said lever 12, as above described, until they are in the rearward position shown in Fig. 2.

A spring 14'', arranged above the lever 14, may be used to press said lever down at its free end. The continued backward movement of the finger-lever 16 and the lever 14 will cause the free end of the lever 14, which is provided with an inclined or cam portion 14', to ride up on a transverse pin 19, secured in the frame, and disengage the end of said lever 14 from the projection 18 on the lever 12, as shown in Fig. 2, and allow the sliding bar 20, located below the lever 14, and engaging at one end with a downward extension 12'' on the lever 12 below its pivot-point, and engaged at its other end by the finger-lever 16, to operate to move forward the swinging lever 12, and with it the breech-bolt 7, from the position shown in Fig. 2 to the position shown in Fig. 3, to transfer the cartridge from the magazine into the barrel.

In order to retain the firing-pin in its rearward position and prevent its moving forward with the breech-bolt 7, I provide a lever 21, preferably of the shape shown in Figs. 4 and 5, and pivoted at about its central point in the frame upon a pin 22 above the lever 14, and provided at the rear end with an inclined projection 21', which is adapted to extend

into an undercut notch 8''' in the lower part of the firing-pin 8, as shown in Fig. 2. Pivoted on the rear end of the lever 21, on a pin 23, is what I term a "locking-lever" 24, which is made bifurcated or divided at its front end, and adapted to straddle the rear end of the lever 21, as shown in Figs. 4 and 5.

A coiled spring 25, located in a chamber in the rear of the frame, bears upon the heel of the lever 24 and operates to force up the end of the lever 21, at the proper time, to cause the projection 21' thereon to enter the notch 8''' in the firing-pin and hold said pin in its rearward position, as shown in Fig. 3, while the breech-bolt 7 is moved into its forward position by the lever 12, as above described.

In order to release the firing-pin 8 to fire the pistol, I provide a trigger 26, extending in the upper slotted part of the finger-lever 16, and pivoted on the pivot-pin 17 of said lever. A spiral spring 27, extending in a hole in the under side of the barrel portion at the inner end thereof, as shown in Fig. 1, and bearing at its free end on the heel of the trigger 26 back of its pivot-point, is used in this instance to move outwardly said trigger on its pivot-point, and also to move outwardly the finger-lever 16 as the inner lower end of said trigger bears against the transverse pin 15 in said lever or against the inner surface of the slot in said lever, in which the trigger 26 is pivoted.

When the finger-lever 16 is moved inwardly into the position shown in Fig. 3, by the middle finger of the operator, and the trigger 26 is also moved inwardly by the first finger, the heel or inner end of the trigger 26 will engage a lateral projection 21'' (see Fig. 4) on the front end of the lever 21, as shown in Fig. 3, and tilt up said lever 21 at its front end, and consequently move it down at its rear end, and move the projection 21' thereon out of engagement with the firing-pin 8, to release said firing-pin and allow the spring 9 to act to move it forward, to fire the pistol, as shown in Fig. 5. At the same time, by means of a stationary pin 28, secured to the side of the frame, as shown in Fig. 4, and extending under and engaging the locking-lever 24, pivoted on the end of the lever 21, the front ends of said lever 24 will be forced up to extend behind the breech-bolt 7, as shown in Fig. 5, to lock said breech-bolt in its forward position, and prevent the rebound thereof on the firing of the pistol.

When the parts of the operating mechanisms of the pistol are in the position shown in Fig. 2, in order to lock the firing-pin 8 in its rearward position and prevent the lever 21 from being moved to release said pin, and also in order to hold the breech-bolt 7 in its rearward position to leave the opening 4 open, so that the magazine may be charged through said opening, I provide means for locking the front end of the lever 21 to the lever 14, so that the rear end of the lever 21 cannot be released from engagement with the firing-pin 8,

and the free end of the lever 14 will be held in engagement with the projection 18 on the swinging lever 12, which moves the breech-bolt 7, to hold said breech-bolt in its rearward position. In this instance my locking mechanism consists of a hook 29 on the front end of the lever 21, which hook is adapted to engage a hook 30 on the upper edge of the lever 14.

It will be seen by referring to Fig. 2, that after the pistol has been fired, as shown in Fig. 1, and the finger-lever 16 is drawn back to move back the cylinder 7 and the firing-pin 8, and eject the shell 11, as shown in Fig. 2, the releasing of the finger-lever 16 will allow the spring 27 to act to move outwardly said lever, and the outward movement of said lever will cause the hook 30 on the lever 14 to engage and hook into the hook 29 on the lever 21. This will prevent any further outward movement of said lever 16, and will lock the levers 21 and 14 together at one end, and prevent any movement of said levers at their other ends, thus forming a safety-lock for the firing-pin 8.

In order to unlock the levers 21 and 14 to release the breech-bolt 7 and the firing-pin 8, if desired, the lever 16 must be moved backward by the finger of the operator until the hooks 29 and 30 are disengaged, as shown in Fig. 2, when the free end of the lever 14 will be disengaged from the projection 18 on the swinging lever 12, and the slide 20 will act to move said lever 12 and carry the breech-bolt 7 into its forward position, as shown in Fig. 3. If the finger-lever 16 is again released, after the breech-bolt 7 has been moved forward, as shown in Fig. 3, the hook 30 on the lever 14 will again engage with the hook 29 on the lever 21, and again lock said levers together, to lock the firing-pin 8 in its cocked position, where it will remain until the finger-lever 16 is drawn back again sufficiently far to disengage the hooks 29 and 30, when a pull on the trigger 26 will tilt up the front end of the lever 21, and move down the other end, to release the firing-pin 8 and allow the spring 9 to act to move it forward to fire the pistol, as shown in Fig. 4.

In order to hold the hook 29 on the lever 21 out of engagement with the hook 30 on the lever 14, after the pistol is discharged, as shown in Fig. 4, and preparatory to the outward movement of the finger-lever 16 to the position shown in Fig. 1, I in this instance provide a projection 31 on the upper side of the lever 21, at the rear of its pivot-support, which, after the pistol is fired, is adapted to engage a lug or projection 32 on the lower inner end of the firing-pin 8. (See Figs. 1 and 3.) It will thus be seen that as the finger-lever 16 is moved forward by the spring 27 from the position shown in Fig. 4 to the position shown in Fig. 1, the front end of the lever 21 being held up by the engagement of the projection 31 thereon with the lug 32 on the firing-pin 8, the hook 30 on the lever 14 will not engage the hook 29 on the lever 21,

as said lever moves forward with said lever 16. The return movement of the finger-lever 16 to eject the shell and reload and fire the pistol will, through the lever 14, move the lever 12, the upper end of which engages the shoulder 8" on the firing-pin 8, as shown in Fig. 7, and start back the firing-pin 8 to release the projection 32 thereon from the projection 31 on the lever 21, so that said projection 32 can extend into the longitudinal slot 33, cut in the lower part of the breech-bolt 7, and thus allow the spring 25 to act to push up the heel of the lever 23 and force down the inner ends of said lever from engagement with the end of the breech-bolt 7, as shown in Fig. 1, to allow the continued backward movement of the swinging lever 12 to move back said breech-bolt 7 to eject the shell, as shown in Fig. 2.

I provide upon the top of the barrel an arm 34, which is hung on a pin 34' and held by a spring 35, pressing against a follower 36, extending in a longitudinal hole in the barrel portion. Said lever 34 is made bifurcated or divided at its free end and is adapted to extend upon each side of the hooked portion 7' on the breech-bolt 7, and in its downward position, as shown in Fig. 2 by full lines, to prevent the throwing out of the next cartridge on the ejecting of the shell. By turning up said pivoted arm, as shown by dotted lines, Fig. 2, the opening 4 is made longer, so that the cartridges may be inserted through said opening to charge the magazine, or a cartridge may be removed through said opening.

It will be understood that the levers 21 and 14 and the slide 20 are arranged in the frame at one side of the magazine and in this instance beyond the magazine.

From the above description, in connection with the drawings, the operation of my magazine-pistol as a repeating pistol will be readily understood by those skilled in the art.

Supposing the pistol to have been fired, the parts will be in the position shown in Fig. 1. By means of the middle finger, inserted in the opening in the lever 16, said lever is drawn backward, causing the swinging lever 12, operated by the lever 14, to move backwardly the breech-bolt 7 and firing-pin 8 into the position shown in Fig. 2. The backward movement of the breech-bolt 7 will withdraw the shell from the barrel and cause it to be ejected through the opening 4, as shown in Fig. 2. The continued backward movement of the lever 16 will, through the slide 20 and swinging lever 12, move forward the breech-bolt 7, the firing-pin 8 being retained in its rearward position by means of the projection 21' on the lever 21, said lever being forced up to engage the firing-pin by the spring 25, acting on the heel of the locking-lever 23, pivoted on said lever 21. The trigger 27 is now pulled by the first finger, causing the inner end thereof to engage and raise the outer end of the lever 21 and at the same time depress the inner end, which will release the firing-pin 8 and

allow the spring 9 to act to force forward said pin to discharge the cartridge. At the same time the locking-lever 23 will be rocked on its pivot-point, by coming in engagement with the stationary pin 29, and be forced up at its front ends, against the action of the spring 25, to extend back of and lock the breech-bolt 7 in its forward position, as shown in Fig. 5. The operating-lever 16 will now return to its first position, as shown in Fig. 1, and the operation is repeated.

In case it is desired at any time to use the safety-lock mechanism, the finger-lever 16 will be released to allow the hooks 29 and 30 to engage, as above described, after said lever has been drawn back far enough to cause the shell to be ejected, as shown in Fig. 2.

It will be understood that the details of construction of my magazine-pistol may be varied if desired.

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

1. In a magazine-pistol, provided with a longitudinally-moving breech-bolt and firing-pin in the breech portion, the combination with said breech-bolt, of mechanism for communicating a positive reciprocating motion thereto in each direction, consisting of a swinging lever, engaging said breech-bolt, a longitudinally-moving lever engaging said swinging lever above its pivot-support to move it in one direction, and a slide engaging said swinging lever below its pivot-support to move it in the other direction, said longitudinally-moving lever and slide operated by a lever extending on the outside of the frame, and adapted to be engaged by the finger, to draw back said lever, to operate said cylinder, substantially as set forth.

2. In a magazine-pistol provided with a magazine extending vertically in the handle portion, intermediate the external operating-lever and firing mechanism, the combination with a longitudinally-moving breech-bolt, of a lever pivoted on the outside of the frame directly in front of the magazine, and adapted to be engaged by the finger of the operator, and mechanism intermediate said lever and breech-bolt, located at one side of and back of the magazine, to communicate a positive motion to said breech-bolt in both directions, by the backward movement of said lever, substantially as set forth.

3. In a magazine-pistol provided with a magazine extending vertically in the handle portion, intermediate the external operating-lever and firing mechanism, the combination with a longitudinally-moving breech-bolt and firing-pin, of a lever hung on the outside of the frame, directly in front of the magazine, and adapted to be engaged by the finger of the operator, and mechanism intermediate said lever, and breech-bolt and firing-pin, said mechanism located at one side of and back of the magazine, to communicate a posi-

tive rearward motion to said breech-bolt and firing-pin, and a positive forward motion to the breech-bolt, independently of the firing-pin, by a backward pull on said lever, substantially as set forth.

4. In a magazine-pistol, the combination with a longitudinally-moving breech-bolt and firing-pin, and means for moving rearwardly said breech-bolt and firing-pin, consisting of a swinging lever engaging at one end with said breech-bolt and firing-pin, and a longitudinally-moving lever engaging with said swinging lever, and a lever hung on the outside of the frame and connected with said longitudinally-moving lever to operate the same, of means for holding the firing-pin in its rearward position, consisting of a pivoted lever provided with a projection at one end adapted to engage with the firing-pin, and said lever adapted to be engaged at its other end by a trigger to release the firing-pin, and said trigger located at the front of the frame, substantially as shown and described.

5. In a magazine-pistol, the combination with a longitudinally-moving breech-bolt and firing-pin, and means for moving rearwardly said breech-bolt and firing-pin, consisting of a swinging lever engaging at one end with said breech-bolt and firing-pin, and a longitudinally-moving lever engaging with said swinging lever, and a lever hung on the outside of the frame and connected with said longitudinally-moving lever to operate the same, of means for holding the firing-pin in its rearward position, consisting of a lever pivoted at its central part, and provided with a projection adapted to engage with the firing-pin to hold the same in its rearward position, and a second lever pivotally supported on said firing-pin lever, with its front end adapted to extend back of the breech-bolt, to lock the same in its forward position when the firing-pin lever is raised at its forward end by the trigger, to release the firing-pin, substantially as set forth.

6. In a magazine-pistol, the combination with a longitudinally-moving breech-bolt and firing-pin, and means for moving rearwardly said breech-bolt and firing-pin, consisting of a swinging lever engaging at one end with said breech-bolt and firing-pin, and a longitudinally-moving lever engaging with said swinging lever, and a lever hung on the outside of the frame and connected with said longitudinally-moving lever to operate the same, of means for holding the firing-pin in its rearward position, consisting of a centrally-pivoted lever adapted to be engaged by the trigger at its front end to release the firing-pin, and provided with a projection at its other end, adapted to engage with the firing-pin, and a lock-lever pivoted on the rear end of said lever, and a spring acting on said lock-lever to raise the rear end thereof and move down the front end thereof, and hold the firing-pin lever in engagement with the firing-

pin, and a stationary pin adapted to engage with the lock-lever, when the firing-pin lever is released from the firing-pin, to raise the ends of said lock-lever and cause the same to
5 extend back of the breech-bolt, to hold the same in its forward position, substantially as shown and described.

7. In a magazine-pistol, the combination with the longitudinally-moving breech-bolt
10 and firing-pin, of means for locking the breech-bolt and firing-pin in their rearward position, consisting of a hook on the lever which engages and holds the firing-pin in its rearward
15 position, and a hook on the longitudinally-moving lever which engages and moves the swinging lever which moves the breech-bolt, said hooks adapted to engage with each other

to lock said levers, for the purpose stated, substantially as shown and described.

8. In a magazine-pistol provided with a 20 magazine extending vertically in the handle thereof, and in the upper part of the frame, and having an opening in the top of the frame leading to the magazine, the combination with
25 an arm pivoted on top of the frame at the rear of the barrel, and adapted to partially close the opening from the magazine, of a spring for holding said arm in its lowered and raised position, substantially as set forth.

MARTIN BYE.

Witnesses:

JOHN C. DEWEY,
M. J. GALVIN.