

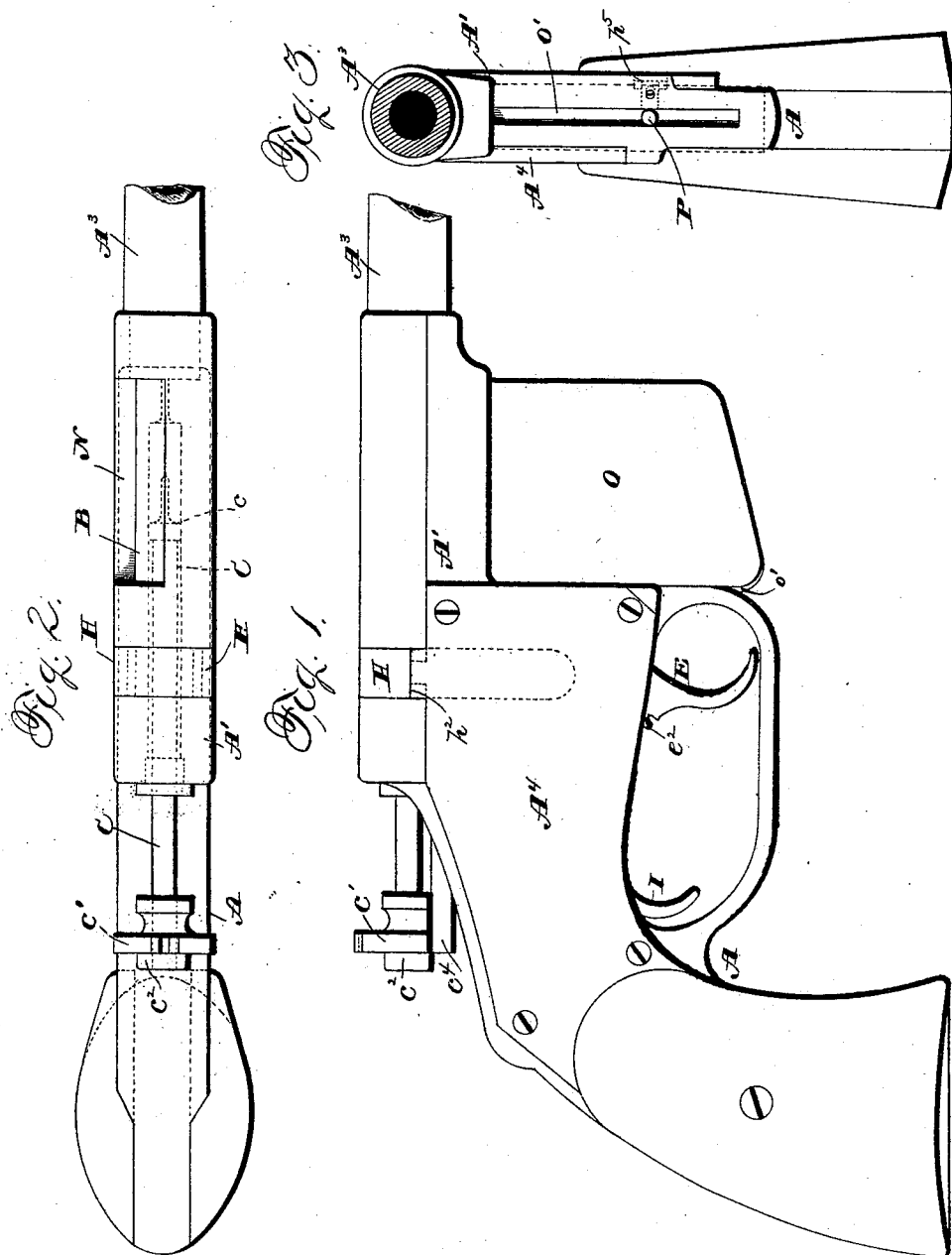
(No Model.)

3 Sheets—Sheet 1.

W. W. KIMBALL.
PISTOL.

No. 513,237.

Patented Jan. 23, 1894.



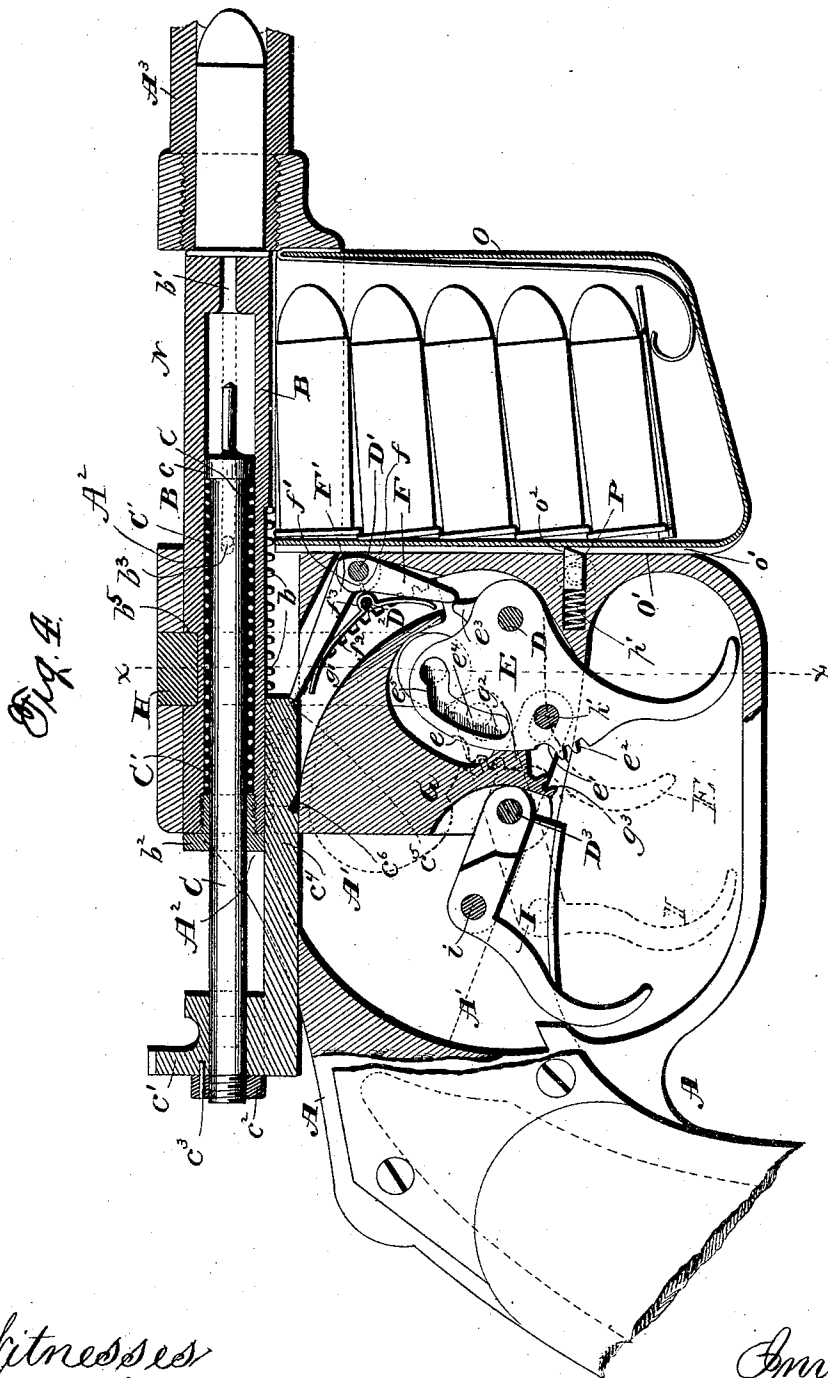
Witnesses
Chas Williams.
Henry C. Hazard.

Inventor
Amos H. Kimball, by
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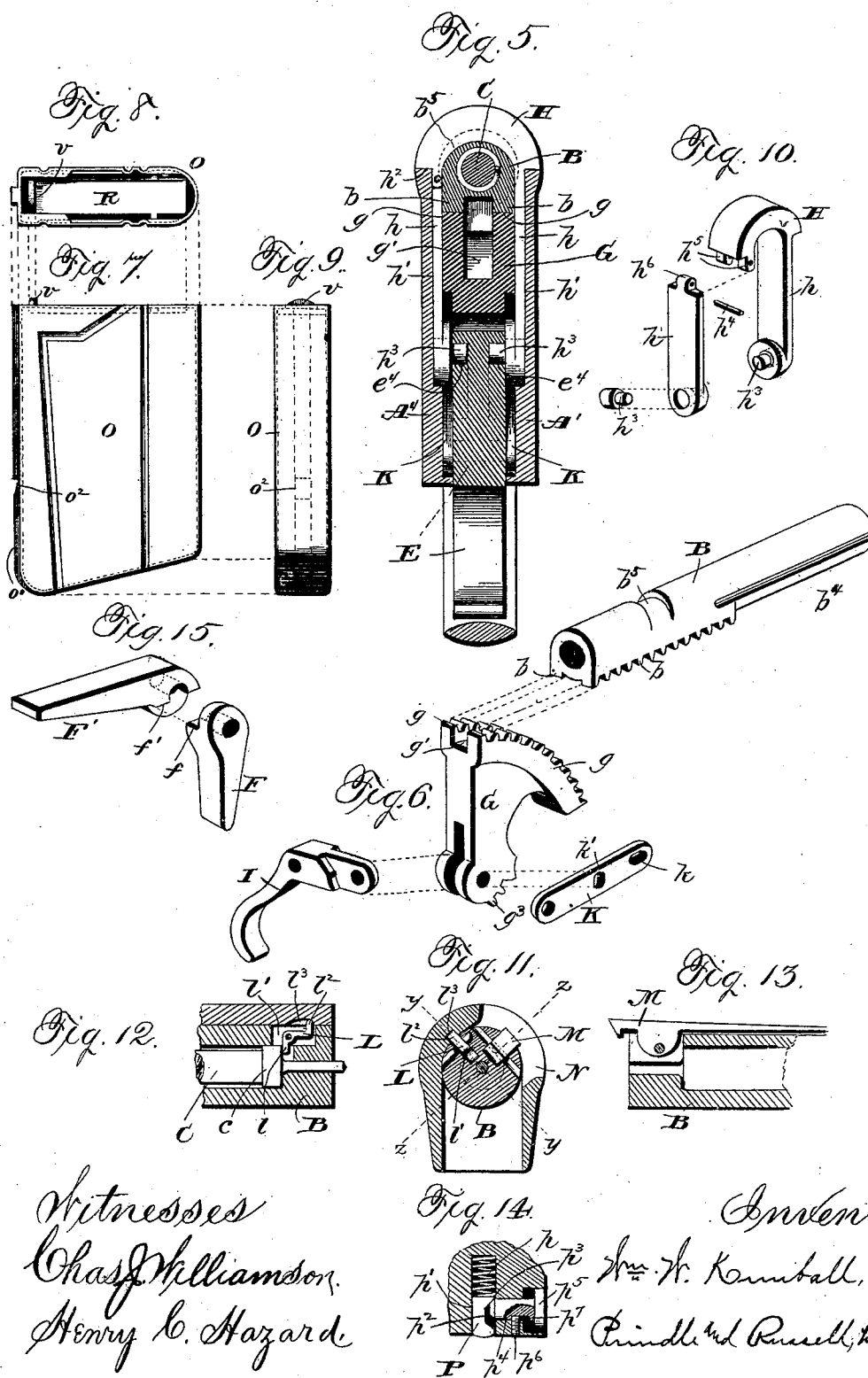
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UNITED STATES PATENT OFFICE.

WILLIAM W. KIMBALL, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR
OF ONE-HALF TO GEORGE S. PRINDLE AND PHILIP G. RUSSELL, OF SAME
PLACE.

PISTOL.

SPECIFICATION forming part of Letters Patent No. 513,237, dated January 23, 1894.

Application filed August 6, 1891. Renewed June 9, 1892. Again renewed June 17, 1893. Serial No. 478,005. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. KIMBALL, of Washington, in the District of Columbia, have invented certain new and useful Improvements in Pistols; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 shows a view of my improved pistol in side elevation; Fig. 2, a plan view of the same; Fig. 3, a front end view of the pistol with the barrel in section; Fig. 4, a view on an enlarged scale showing, partly in side elevation and partly longitudinal section, the various parts of the operating mechanism; Fig. 5, a view of a section on line *x, x*, of Fig. 4; Fig. 6, a detail perspective view showing separated from each other, the bolt, bolt throwing segment, the rear trigger, and one of the links for connecting the same with the forward trigger; Fig. 7, a view of the magazine in side elevation; Fig. 8, a plan view of the same; Fig. 9, a view of the same in end elevation; Fig. 10, a detail perspective view of the bolt lock; Fig. 11, a cross section of the bolt and receiver, showing the retractor and extractor; Fig. 12, a view of a section on line *y, y*, of Fig. 11; Fig. 13, a view of a section on line *z, z*, of Fig. 11; Fig. 14, a detail sectional view showing the magazine holding latch mechanism, and Fig. 15, a detail perspective view of the sear and its fly, separated from each other.

Letters of like name and kind refer to like parts in each of the figures.

The object of my invention has been to provide an improved repeating magazine pistol, which shall be capable of being most readily and quickly recharged, shall have a clean sharp trigger pull for releasing the firing mechanism, and shall be without any joint between the firing chamber and the barrel, through which the powder gases can escape to diminish the pressure within the barrel applied to the propulsion of the projectile, and to this end my invention consists, in the pistol and the parts thereof constructed, arranged and combined, as hereinafter specified.

While the arm, as it will be shown and described, is especially intended for cavalry

use, being so designed and arranged, as to admit of the best and steadiest possible aim during the pull off for firing, and a quick recharging, with a minimum use of the bridle arm, it is well adapted for employment elsewhere wherever a good shooting, repeating pistol is desired.

A special purpose which I have had in view, and which will be found to have been carried out in inventing the present arm, has been to make certain of having such an easy pull off, as will enable the user to secure good aim in firing, to have all the movements of the various parts of the mechanism except those of the firing pin and sear positive, and to obtain them all by a simple rearward pull or pressure of the fingers of the hand gripping the stock or butt.

While the magazine shown is of the detachable kind known as the Burchard Lee, and while I prefer that kind as the most convenient and best, I desire it to be understood that I do not limit myself thereto, but contemplate using, with the operative mechanism of the pistol, any other desired form of cartridge holding and feeding device, adapted to feed the cartridges up into position to be engaged by the breech bolt and carried forward thereby into the chamber of the barrel, as in any of the well known forms of bolt gun.

For quick recharging, the detachable magazine is found the best, but, if desired, my pistol can be provided with a fixed one, whether occupying the position of the one shown, or consisting of a longitudinal tube with suitable feed spring, follower, and carrier, to lift the cartridges up into the path of the bolt.

In the drawings *A, A*, designate the frame having the receiver *A'* for holding the operative parts of the mechanism, the bolt way *A²* for holding and guiding the reciprocating bolt *B*, the magazine holder, for receiving and holding the magazine, arranged, so that the bolt will reciprocate over the top of the magazine, in position to engage the head of the top cartridge and carry the latter forward, and the barrel *A³* screwed or otherwise fastened into the frame in line with the bolt. As shown the receiver has a removable side plate *A⁴*, to be fastened in place by screws, or

other fastening devices, as desired, while for convenience in assembling and dismounting the different parts of the mechanism, the several stationary supporting pivot pins are driven or otherwise fixed in the frame. If preferred, however, any one or all of the pins may be made removable from the frame, without involving any departure from my invention.

10 The main or forward part of the bolt B is, preferably, but not necessarily made cylindrical, while its rear portion is, on its under side provided with the two series of teeth or racks b, b , arranged so as to leave a longitudinal space between them. Within this bolt, 15 which is hollow, is arranged the firing pin C having its forward end reduced in size to pass through the small opening b' in bolt end, so as to reach and explode the primer of the 20 cartridge, when the bolt has been thrown forward. To the rear of this reduced striking part, the firing pin has the head or collar c engaged by the spiral spring C' , whose other end bears against the hollow screw b^2 , screwed into the bolt and surrounding the shank of the 25 pin. On the outer end of the latter is the cocking piece or head c' held by the nut c^2 screwed upon the firing pin and fixed from turning thereon by the pin c^3 passing through it, and into the head. A horizontal longitudinally extending arm c^4 on this head passes forward into the space on the under side of the bolt between the two racks b, b , on the 30 latter, and has a shoulder C^5 and under cut safety notch C^6 , to be engaged by the sear, to be described, when the pistol is at full cock and half cock, respectively.

To prevent any tendency on the part of the bolt B to turn or twist in its way, a pin b^3 can 40 be provided on the frame extending into and engaging a longitudinal groove b^4 in the bolt side. Instead of this arrangement, the bolt and way can, of course, be made non-cylindrical, or so shaped, that turning of the bolt 45 will be impossible. Such a change from the construction shown would not involve any departure from my present invention.

The rear portion of the cocking piece or head C' is, preferably, extended upward, as 50 shown, and, as its motion with the bolt is a rectilinear one, in line with the barrel, it can be notched or otherwise arranged, so as to be used as a rear sight in connection with any desired form of front sight.

55 Pivoted upon pin D, within the forward part of the receiver, is the trigger E which, as will be seen, serves to trip the sear, operate the bolt block, and actuate the bolt throwing mechanism. It has on the rear side of 60 its body or main portion, a concentric face e , forming a portion of a cylinder whose axis is coincident with the trigger pivot, a depression e' at the lower end of such face, and the teeth e^2, e^2 , below the depression. On the upper 65 side of its pivotal portion, is a cam lug or projection e^3 , which, when the trigger is forward in its normal position, stands just to the

rear of the end of the fly F on the sear F' , so that the first rearward movement of the finger engaging arm of the trigger, will cause 70 the sear to be swung, to release the firing pin from its retracted position. The sear and fly are both pivoted on the pin D' which, as indicated hereinbefore, can be a driven or a removable one, and have their pivotal portions 75 provided with shoulders f , and f' , respectively, which allow a limited movement of the two parts on the pivot independent of each other. A double armed spring f^2 , having a loop f^3 , engaging pin D^2 , so that the spring 80 cannot turn thereon, has its opposite arms bearing against the sear and fly, respectively, so as to hold them swung apart, as far as their shoulders f and f' will allow, and to keep the sear pressed upward into position to 85 engage the shoulder c^5 , or the notch c^6 , on the arm c^4 of firing pin head c' . With this construction, the sear will, when the bolt B has been moved rearward and is traveling forward again, to carry the cartridge into the 90 chamber of the barrel, engage the shoulder c^5 and hold the cocking piece or head c' , and, consequently, the firing pin, retracted against the stress of spring C' . If the trigger E has been swung rearward and is being returned 95 to its normal position again, the fly F' will yield to let the tripping lug e^3 pass under it, and will then fly forward into position in front of such lug.

To prevent the turning of spring f^2 on pin 100 D^2 , the latter can be flattened or made non-cylindrical, to fit a correspondingly shaped space within the spring loop.

Pivoted upon pin D^3 , to the rear of the trigger F, is a bolt thrower G, having on its upper 105 portion, the two segmental racks g, g , to mesh with racks b, b , on the bolt, and the channel g' , to leave space for the accommodation of the sear, sear spring, and fly, already described. On the pivotal portion of 110 this thrower is a forwardly extending locking toe g^2 , which, when both trigger E and bolt thrower are forward in their normal positions, as shown in Fig. 4, is adapted to engage the concentric cylindrical face e on the 115 trigger, so as to hold the thrower from swinging rearward to retract the bolt, or allow the latter to move back. The face engaging portion of the toe is preferably made concave, as shown, so as to be concentric with said 120 face, when the thrower is swung forward in its bolt closing position.

On the pivotal portion of the thrower below the toe, are the teeth g^3 adapted to mesh 125 with those on the trigger, when the latter has been swung rearward far enough to release the toe from the locking action of the concentric face e on the trigger. Said face is made of such extent, as to securely hold the bolt thrower from any backward movement, 130 until after the trigger has been swung far enough to cause its projection e^3 to engage the sear fly, and trip the sear, so that a firing action is secured. The bolt would then be

held forward in a closed position during the firing. To effectually lock it, without depending upon the bolt thrower alone, I provide the lock H, adapted to engage and be raised out of the locking notch or depression b^4 in the upper side of the bolt, and consisting, preferably, of an inverted U-shaped piece, having the main upper portion or head, for engaging the bolt notch, fitting and moving in an opening in the upper part of the frame, above and partly surrounding the bolt way, and the two legs h, h , extending downward on opposite sides of said way, into the receiver space, and guided in vertical grooves h', h' , in the receiver walls.

Where, as described hereinbefore and shown in the drawings, one side of the receiver is formed of a removable cap or plate, the latter can be grooved to receive one of the lock legs, and have a projection h^2 , to form a shoulder for the under side of main part of the lock to rest upon, when down in locking position. (See Figs. 1 and 5.)

The lower portions of the lock legs extending down on opposite sides of the bolt thrower G and trigger E, are provided on their lower ends with pins h^3, h^3 to engage the cam grooves e^4 in the body of or main part of the trigger. Each of such grooves consists of the forward and rear portions concentric with the trigger, connected by an incline or eccentric part. Of these concentric portions, the forward one is nearer the center of movement of the trigger than the other is, being so arranged as to hold the bolt lock down in locking position. It is also made of such length that the lock will be held, as described until after the trigger has been moved to secure a tripping of the sear and firing of the pistol. Continued movement of the trigger then brings the upward and rearward incline e^5 of each groove into contact with its respective pin h^3 , so that the lock is raised to unlock the bolt. After such raising, as the pins on the lock legs are in the outer concentric portions of the grooves, the lock will be held, as raised, and the trigger will be free to be moved farther, to cause the movements of the bolt thrower hereinbefore indicated, and more fully set forth hereinafter.

For convenience sake, especially where, as I prefer, the various pivot pins are driven ones, one leg of the bolt lock, the outer one, is hinged to the lock body, as by a pin h^4 passing through two ears h^5, h^5 , on such body, and a projection or ear h^6 on the leg. I do not, however, limit myself to such construction, but can, instead, detachably attach or hinge the leg to the lock body in any other desired way, without departure from my invention.

Where it is desirable, the lock legs can both be made integral with the body, if the pivot pins of the trigger and bolt thrower are made removable and not fixed or driven.

With the parts constructed as already described, and occupying the positions shown

in Fig. 4, a rearward pull on the trigger E, would cause first a tripping of the sear, to release the firing pin for firing the cartridge in the barrel chambers, then a lifting of the bolt lock to release the bolt, and then, through the engagement of the upper side of the first tooth e' on the trigger with the toe g^2 , and the subsequent meshing of teeth e^3, e^3 , with the thrower teeth g^3, g^3 , a rearward swinging of the thrower to quickly retract the bolt. If desired, a spring, put under compression by the described movements of the trigger and thrower, could be used to return them to their first normal positions again, the bolt, on its forward travel, being caused, in the usual well-known way, to carry a fresh cartridge from the magazine into the chamber of the barrel, but I prefer to make the operation of the pistol positive and not to depend upon a spring, in the manner and for purpose indicated. I therefore provide, a rear trigger I, in addition to the one described, preferably, but not necessarily, pivoted upon the same pin with the bolt thrower G. As shown, its pivotal portion is in the form of a nose entering a recess or slot in the pivotal part of the thrower, but I do not intend to limit myself to such construction. In general form it is very nearly a right angled lever. At or near its angle, is a pin i , whose opposite ends, projecting beyond the sides of the trigger, engage openings in the rear ends of the two links K, K, which, extending forward on opposite sides of the receiver space, are pivoted upon pin D^3 , and have in their forward ends, short longitudinal slots k, k , engaging the pin k' , passed through the rear portion of the body or main part of the trigger E.

Instead of using the pins i and k' passing through the rear and forward triggers, respectively, as described, I can, of course, employ link engaging studs or short pins made integral with or inserted in the respective triggers, without involving any departure from my invention.

With the construction described, a rearward movement of the forward trigger to fire the arm, unlock the bolt, and retract the latter, in the manner set forth hereinbefore, will, through the action of the two links, cause the rear trigger to be swung forward into the position indicated by dotted lines in Fig. 4, and a rearward pull on such trigger will throw the other trigger E forward again to its normal position, causing the bolt thrower to close the bolt and hold it closed, and the bolt lock to descend into its locking position again, through the operation of the cam grooves on the trigger upon the pins of the lock legs.

To enable the front trigger E to be moved rearward far enough to trip the sear and secure a firing without movement of the rear trigger, I, preferably, enlarge or slot the pivot holes k', k' , of the links K, as shown best in Fig. 6. The pistol can then be fired without

a releasing of the grip upon the rear trigger, and, consequently, without any interference with a firm hold or grip upon the pistol butt or stock.

Obviously, one link might be employed to connect and operate the two triggers the one from the other, without departure from my invention, but I prefer the two, as, by them, I avoid all chance of any twisting action which is especially to be avoided in pistols.

To secure a retraction of the firing pin within the bolt, when the latter is first moved rearward and while it is to the rear of its closed position, I provide the bolt with the bell crank lever L which, being pivoted in a slot L' in the former, has the inner arm l adapted to engage the forward side of the collar c on the firing pin, and the outer arm l^2 arranged to project beyond the bolt periphery, when the inner arm is swung into position to leave the firing pin free to be thrown forward to the full extent of its movement.

A recess l^3 in the wall of the bolt way serves to allow the outer arm of the retractor to project, as described, when the bolt has been fully closed. During the first rearward movement of the bolt from said position, the inclined bottom of the recess cams the outer projecting lever arm l^2 , inward, so as to swing the inner arm back in the bolt, to retract the firing pin, as will be understood from Fig. 12 of the drawings. The wall of the bolt way will then hold the retractor as moved, until the bolt reaches its closed position again.

The cartridge shell extractor M , can be of any one of the well known forms, and need not be described herein.

The opening N , for allowing the ejection of the shells, is, preferably, placed as shown, on the left side of the bolt way, but can, instead, be arranged on the other side or on the top of the frame if desired, the position of the extractor being changed accordingly.

The magazine O , shown, is, as indicated hereinbefore, of the kind commonly known as the Burchard-Lee, and need not therefore be described in detail herein. The holder for detachably holding it with its top in proper position with reference to the bolt way consists, essentially, of an opening or slot in the under side of the forward part of the frame, in front of the trigger guard, adapted to fit the upper part of the magazine, and having in its rear side, which is continued downward nearly to the full depth of the magazine, a vertical groove O' to receive the rib o' on the magazine case. On such rib is a notch o^2 to be engaged by the nose of the latch P normally held projected in operative position by a spring p . The construction of this latch is best shown in Figs. 4 and 14. It consists of a pin inserted and moving in a cavity p' in the frame and having its inner end engaged by the spring p referred to above. Its nose is made with the inclined under face to facilitate the quick thrusting of the magazine up into place, and in its left side is a notch p^2

with its inner end inclining outward to form a cam p^3 . Guided in a passage p^4 at right angles to the cavity p' is a latch operating push piece or pin p^5 , whose inner end projecting into the notch p^2 is adapted to engage cam p^3 , so as to force the latch inward against the stress of its spring p when the pin is pressed in. A small screw p^6 projecting into a cavity p^7 in the side of pin p^5 serves to keep the latter from falling out while leaving it free to be pressed inward to trip the latch.

The operation and manner of using my pistol are briefly as follows:—With the pistol loaded and the parts in the position shown in Fig. 4, an easy pull on the forward trigger will cause a tripping of the sear to release the firing pin before the said trigger is made use of to cause movement of any of the other operative parts of the mechanism. The pull off is then a clear, clean one, such as cannot be secured in any of the so-called double action pistols heretofore made in which the trigger only trips the sear after it has been moved rearward so as to cock or make the pistol ready for firing. After the cartridge has been fired, a continued movement of the forward trigger unlocks the bolt by raising the bolt lock, through the engagement of the inclined parts of the grooves in the trigger body with the pins on the lock legs. The cylindrical concentric face on the trigger then passes by the toe on the bolt thrower so that the lower corner thereof is free to swing into the depression e' , and the upper side of the first tooth e^2 striking such corner, starts the thrower back to retract the bolt. The meshing teeth on trigger and thrower then quickly complete the bolt opening motion of the latter. Meanwhile the retractor has retracted the firing pin in the manner indicated and the extractor has extracted the fired shell from the cartridge chamber in the barrel and caused it to pass outward through the opening in the frame. The rearward motion of the forward trigger has, through the links described, carried the rear trigger to the front. The latter trigger is now pulled rearward to return the forward trigger to its first position with a consequent swinging of the thrower to close the bolt and carry a cartridge from the magazine into the barrel chamber, and lowering of the bolt-lock to lock the bolt again. As the forward trigger reaches its normal position, its firing lug or projection passes under the sear fly, which yields to it and then snaps into place in front of it ready for another firing movement. When the magazine becomes empty, it can be easily and quickly detached if the latch operating pin is pressed inward, and a fresh magazine can be thrust into the holder.

When the pistol is used by a cavalryman, it can be readily recharged with the minimum use of the bridle hand. The barrel having been dropped into such hand, without a releasing of the reins, the forefinger of the right hand, used to detach the empty magazine case, naturally comes upon the latch of the

tripping pin. Pressure on the latter causes the magazine case to be released, so that it can be quickly removed to make way for a filled one, which, when in place, will be caught and held by the latch.

In order that the user of the pistol may be notified at once, when a magazine has been emptied, I contemplate turning up the rear end of the magazine follower R, so as to form a lip *v*, which, after the last cartridge has been removed, will project upward above the magazine top, into the path of the forward end of the bolt, so as to stop the latter, when it has been retracted.

From the description given hereinbefore and the drawings, it will be seen, that I have, by my invention, provided a simple, compact, repeating pistol, which can be used and operated by one hand, and in which all the movements of the various parts are secured by a simple, strong and rearward pull of the fingers of the bolt gripping hand. It will also be seen that in the preferred form of my pistol, with the two triggers connected in the manner described, I am enabled to make all the movements of the parts except the sear device and firing pin, positive, while, with the firing mechanism arranged to be actuated before any of the other parts are moved, I secure the easiest and clearest possible pull off, which is necessary, in order that good aim may be had and maintained during firing.

Having thus described my invention, what I claim is—

1. In combination with a suitable frame and the breech mechanism guided and supported therein, the two triggers and connections between them and the breech mechanism whereby a rearward pull on one trigger moves the breech mechanism into closed position, and a rearward pull on the other opens such mechanism, substantially as and for the purpose specified.

2. In combination with a suitable frame and the breech bolt moving therein, a bolt thrower supported on the frame, the two triggers and connections between them and the bolt thrower whereby the latter is moved in opposite directions by rearward pulls upon the different triggers, substantially as and for the purpose shown.

3. In combination with a suitable frame and the breech bolt moving therein, the bolt thrower pivoted in the frame and connected with the bolt, the forward trigger, connections between the latter and the bolt thrower, whereby the thrower is moved forward and back by a forward and rearward motion of the trigger, the rear trigger, and connections between the two triggers whereby the movement of one in one direction moves the other in the opposite direction, substantially as and for the purpose specified.

4. In combination with a suitable frame and the breech bolt moving therein, the bolt thrower pivoted in the frame and connected with the bolt, the forward trigger, connections be-

tween the same and the thrower whereby the latter is moved forward and back by a forward and rearward motion of the trigger, the rear trigger, and one or more links each connected with the same, so as to be moved thereby, and a pin on the front trigger engaging a slot in each link, substantially as and for the purpose shown.

5. In combination with a suitable frame and the breech bolt moving therein, the bolt thrower pivoted in the frame and connected with the bolt, the forward trigger, connections between the same and the thrower, whereby the latter is moved forward and back by a forward and rearward motion of the trigger, the rear trigger, one or more links each pivoted on the same pin with the rear trigger, and having its rear end connected with the rear trigger, so as to move with the same, and its forward end provided with a slot engaging a pin on the forward trigger, substantially as and for the purpose set forth.

6. In combination with a suitable frame and the breech bolt moving therein, the bolt thrower pivoted in the frame and connected with the bolt, the forward trigger, connections between the same and the thrower, whereby the latter is moved forward and back by a forward and rearward motion of the trigger, the rear trigger, and one or more links, each having a pivotal opening engaging the pivot pin of said trigger, made slightly larger than the pin to allow slight play, its rear end connected with the trigger, so as to move with the same, and its forward end provided with a slot engaging a pin on the forward trigger, substantially as and for the purpose described.

7. In combination with a suitable frame and the breech bolt moving therein, the forward trigger pivoted in the frame, and having a concentric face and teeth, the bolt thrower, connected with the bolt, pivoted in the frame, and provided with the locking toe to engage the concentric face on the trigger, and with teeth to be engaged by the trigger teeth after the trigger has been moved rearward a certain distance, substantially as and for the purpose specified.

8. In combination with a suitable frame and the breech bolt moving therein, the forward trigger pivoted in the frame and provided with the concentric face, a depression at the end of such face, and one or more teeth, the bolt thrower, connected with the bolt, pivoted in the frame, and provided with a locking toe with concave face to engage the concentric face on the trigger, and teeth to be engaged by the trigger teeth when the trigger has been moved rearward a certain distance, substantially as and for the purpose specified.

9. In combination with a suitable frame and the breech bolt moving therein, the bolt thrower, connected with the bolt, pivoted in the frame, and having the locking toe and the teeth below the same, the trigger having the concentric face to engage such toe so as

to hold the bolt thrower thrown forward, the teeth to engage those on the thrower so as to throw the latter rearward after the trigger has been moved back a certain distance, and the depression to allow movement of the toe when the teeth on the trigger and thrower are in engagement, the rear trigger and connections between the latter and the forward trigger whereby a rearward movement of the rear trigger throws the front trigger forward substantially as and for the purpose specified.

10. In combination with a suitable frame and the breech bolt reciprocating therein, provided with teeth, the bolt thrower pivoted in the frame having the segmental portion provided with teeth to engage those on the bolt, a locking toe on the forward side of its pivot, and the teeth below such toe, the trigger having the concentric locking face to engage the toe and lock the bolt thrower when the latter is in its forward position to close the bolt, and one or more teeth to engage the under side of the locking toe and mesh with the teeth on the thrower near such toe, substantially as and for the purpose shown.

11. In a fire arm, in combination with a suitable frame and the breech mechanism, and firing devices mounted thereon, a trigger for actuating the breech mechanism, and connections between the same and the firing devices in position to be engaged and actuated by the trigger during the first part of its rearward movement substantially as and for the purpose set forth.

12. In a fire arm, in combination with a suitable frame and the breech mechanism mounted thereon, a firing striker, a trigger connected with the breech mechanism so as to actuate it, and a sear device for holding the firing striker retracted, arranged to be actuated, to release the striker, by the trigger during the first part of the latter's movement under a rearward pull, substantially as and for the purpose set forth.

13. In a fire arm, in combination with a suitable frame and the breech mechanism mounted thereon, a firing striker, a sear for holding the same retracted, the sear fly, a trigger connected with the breech mechanism so as to actuate it after the trigger has been moved rearward a certain distance, and provided with a cam projection to engage the sear fly and trip the sear during the first movement of the trigger; substantially as and for the purpose set forth.

14. In combination with a suitable frame, and the breech bolt moving therein, the spring actuated firing pin carried by the bolt, provided with a sear engaging piece, the sear to engage such piece and hold it retracted as the bolt is moved forward to close it, the bolt thrower connected with the bolt, the trigger connection between the latter and the thrower whereby the thrower is moved forward and back by a forward and rearward motion of the trigger and is locked for rearward movement until the trigger has been swung rear-

ward a certain distance, the fly on the sear, and a projection on the trigger to engage such fly and trip the sear before the trigger has been moved far enough to unlock the bolt thrower, substantially as and for the purpose set forth.

15. In combination with a suitable frame and the breech bolt moving therein, the spring actuated firing pin carried thereby, provided with a sear engaging portion, the sear provided with the fly, the trigger having the fly engaging projection, the locking face, and one or more teeth, the bolt thrower pivoted in the frame, connected with the bolt and having the locking toe to engage the locking face on the trigger until after the latter has been moved to trip the sear, and one or more teeth to be engaged by those on the trigger, substantially as and for the purpose described.

16. In a fire arm in combination with a suitable frame and the breech closing piece mounted thereon, a lock for such piece, a trigger, connections between the latter and the lock whereby the lock is actuated by the movement of the trigger, a firing striker, a sear for holding the same retracted ready for firing, and connections between the sear and the trigger whereby the former is tripped to release the striker during the first movement of the trigger before the lock is moved to unlock the breech closing piece, substantially as and for the purpose set forth.

17. In combination with a suitable frame and the breech bolt moving therein, provided with a locking shoulder, the trigger, the firing pin, and the sear, connections between the latter and the trigger whereby the first rearward movement of the trigger trips the sear, the bolt lock guided in the frame, and cam connections between such lock and the trigger whereby the former is held in engagement with the shoulder on the bolt until after the trigger has been moved to trip the sear, and then is moved to disengage it from the shoulder, substantially as and for the purpose specified.

18. In combination with a suitable frame and the breech bolt moving therein, provided with a locking shoulder, the firing device, the sear engaging the same, the bolt lock guided in the frame having one or more legs each provided with a pin, the trigger provided with a cam to engage such pin, having a concentric portion to hold the pin moved to keep the lock in operation during the first rearward movement of the trigger, the inclined portion to move the lock away from the shoulder on the bolt, and the second concentric portion to keep the lock as moved during the continued rearward motion of the trigger, and connections between the trigger and the sear, whereby the latter is tripped by the first motion of the trigger, substantially as and for the purpose shown.

19. In combination with a suitable frame and the breech bolt moving therein, provided with a locking shoulder, the bolt lock guided

in the frame having the two legs provided with pins, and the trigger having a cam to engage such pins, provided with a concentric portion to hold the lock down in engagement with the bolt shoulder, the incline to move the lock out of engaging position, and the second concentric portion to hold the lock as moved, substantially as and for the purpose set forth.

20. In combination with a suitable frame, and the breech bolt moving therein provided with a locking shoulder, the bolt lock guided in the frame having the two legs provided with pins, the trigger provided on opposite sides with cam grooves to engage the respective pins on the lock legs, each groove having the inner and outer concentric portions connected by an inclined portion, substantially as and for the purpose described.

21. In combination with a suitable frame and the breech bolt moving therein, provided with a locking shoulder, the firing device, the sear for engaging the same, the bolt lock guided in the frame and having one or more keys each provided with a pin, the trigger provided with a groove for each of such pins, having the inner and outer concentric portions and the incline connecting them, and connections between the trigger and the sear, whereby the latter is tripped by the movement of the trigger while the lock is held in bolt locking position, substantially as and for the purpose specified.

22. In combination with a suitable frame and the breech bolt moving therein, having the locking shoulder, the firing pin carried by the bolt, having a suitable sear engaging head or piece, the sear provided with a fly, the sear spring, the bolt thrower connected with the bolt, provided with a locking toe, and teeth, whereby it is to be turned, the trigger provided with the face to be engaged by the locking toe, the teeth to engage those on the thrower, and the projection to engage the sear fly, the bolt lock and cam connections between the same and the trigger whereby

the lock is held in operative position during movement of the trigger to trip the sear, and then, by continued rearward movement, the trigger is moved and held out of engagement with the shoulder on the bolt, substantially as and for the purpose shown.

23. In combination with a suitable frame and the breech bolt moving therein, provided with a notch on its upper side, the bolt lock guided in the frame so as to be movable into and out of the bolt notch, and having the two legs extending down into the receiver, provided with pins, the trigger having in its sides grooves engaging the pins, each groove having the forward and rear concentric portions, the former nearer the center of motion of the trigger than the other, and the inclined portion connecting the two concentric ones, substantially as and for the purpose set forth.

24. In a magazine pistol in combination with the receiver frame and the reciprocating breech bolt, the spring actuated firing pin provided with a sear engaging head or piece, the magazine holder, a magazine in the same provided with means for feeding cartridges up into position to be engaged by the bolt and carried thereby into the chamber, the sear, the front trigger, connections between the latter and the sear, the bolt thrower connected with the bolt, connections between the trigger and thrower whereby the latter is moved forward and back by the forward and rearward motion of the trigger, the rear trigger connected with the forward one, so that its rearward movement moves the forward trigger forward, the bolt lock and connections between it and the forward trigger, to move it into and out of locking position, substantially as and for the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand this 10th day of June, 1891.

WM. W. KIMBALL.

Witnesses:

ESTHER S. KIMBALL,
CHARLES H. KOEHNE, Jr.