

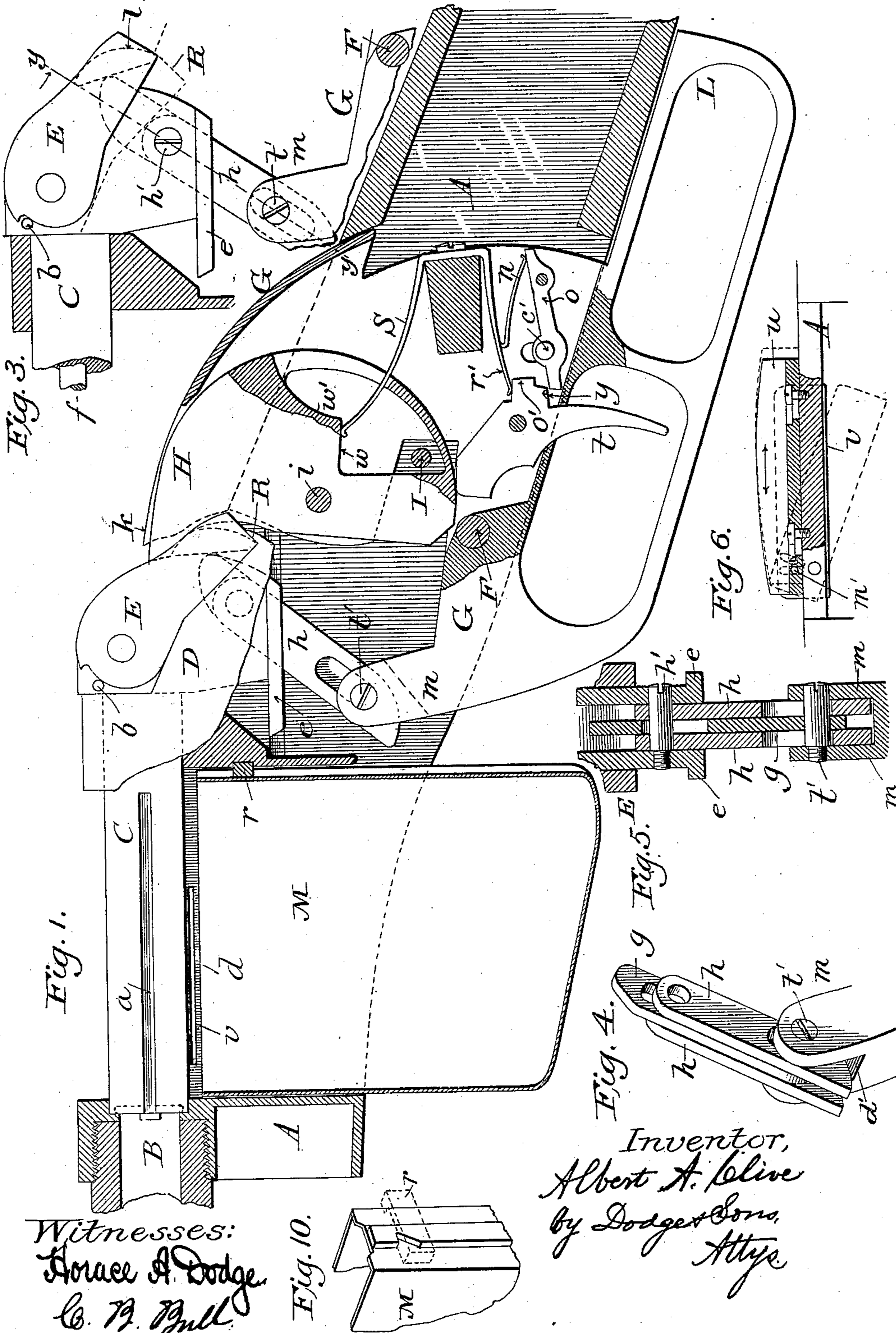
(No Model.)

2 Sheets—Sheet 1.

A. A. CLIVE.  
MAGAZINE BREECH LOADING GUN.

No. 472,251.

Patented Apr. 5, 1892.



Witnesses:  
Horace A. Dodge  
C. B. Bull

Fig. 10.

Inventor,  
Albert A. Clive  
by Dodge & Sons,  
Attys

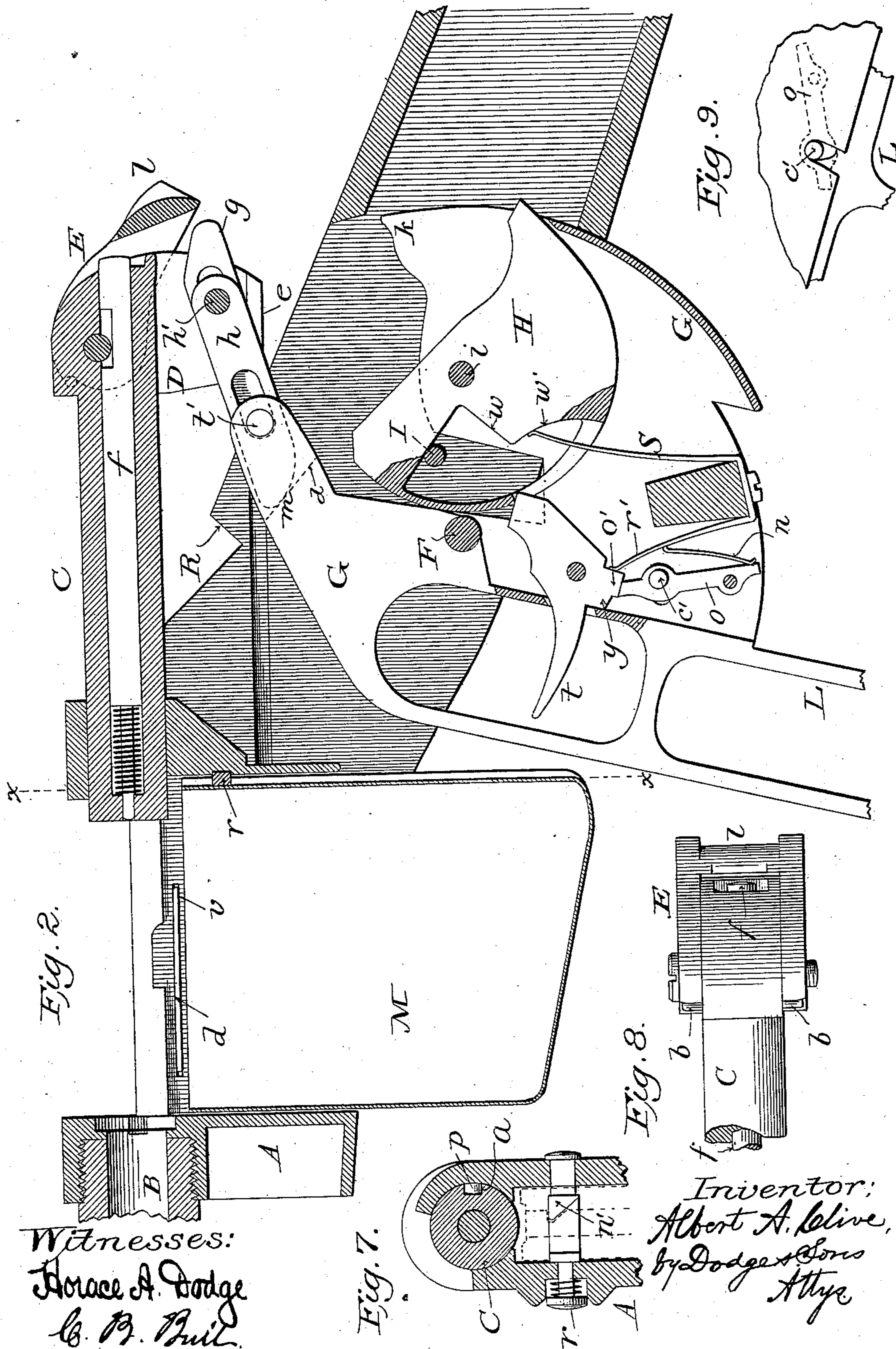
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# UNITED STATES PATENT OFFICE.

ALBERT A. CLIVE, OF ILION, NEW YORK.

## MAGAZINE BREECH-LOADING GUN.

SPECIFICATION forming part of Letters Patent No. 472,251, dated April 5, 1892.

Application filed May 6, 1891. Serial No. 391,782. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT A. CLIVE, a citizen of the United States, residing at Ilion, in the county of Herkimer and State of New York, have invented certain new and useful Improvements in Magazine-Guns, of which the following is a specification.

My invention relates to magazine-guns of that class in which a detachable magazine is inserted into an opening in the under side of the receiver or frame; and the invention consists in a novel construction of the mechanism of the gun, as hereinafter more fully set forth.

Figure 1 is a side elevation, shown partly in section, showing the parts in the position they occupy when the gun has been fired. Fig. 2 is a similar view showing the position of the parts when the gun is opened to receive a fresh cartridge; and Figs. 3, 4, 5, 6, 7, 8, and 9 are views of various parts more in detail, Fig. 7 being a transverse vertical section on the line *xx* of Fig. 2.

To make a gun on my plan, I provide a receiver or frame A, which is composed, mainly, of two flat cheeks or side pieces open at top and bottom for the reception of a swinging frame G, pivoted on a pin F, as shown in Figs. 1 and 2. In front of the space occupied by this pivoted frame G is another opening for the reception of the magazine or box M, and in front of that the receiver G terminates in a short extension suitably constructed to receive the barrel B and the stock, as usual.

The breech-piece C is made in the form of a bolt arranged to be moved forward and back by means of links *h*, which connect its rear end with an arm *m* at the front end of the pivoted frame G, as shown in Figs. 1, 2, and 3. The rear end of the breech-bolt C is provided with an enlargement which projects below its body, and on the lower edge of which at each side is a rib or lateral projection *e*, which slide in corresponding grooves formed in the inner faces of the cheeks or sides of the receiver and act as guides for the bolt in its to and fro movements, as shown in Figs. 1 and 2. To the rear end of the breech-bolt I pivot a locking-brace E, (shown in top plan view in Fig. 8,) the rear end of which, when the bolt is shoved forward, drops into

notches formed in the cheeks of the frame and locks against a shoulder R on each side, as shown in Figs. 1, 2, and 3. To unlock this brace a sliding link *g* is inserted between the two links *h*, as shown in section in Fig. 5, it being so arranged that at the beginning of the movement to open the breech its upper end is made to push against the cross-bar *l* of the brace E and raise it from the shoulders R, as represented in Figs. 1 and 3, the former showing the position of the parts at the beginning of the opening movement, and Fig. 3 showing their position just before the unlocking is completed. The peculiar construction and movement of this link, by which it is made to thus operate on the locking-brace, will be hereinafter more fully explained in connection with the pivoted frame G, by which it is operated.

The frame G is composed of a hollow segmental piece of metal with a handle or lever L, which projects below the receiver, as shown in Fig. 1, for operating it, and with an arm *m* at its front end, to which the links *g* and *h* are pivoted, as shown clearly in Figs. 1 and 2. This frame G is formed with a mortise or recess in which the lock mechanism is placed, its sides consisting of flat plates united along their upper edge, as shown in section in Figs. 1 and 2, to form a cover and close the opening in the receiver when the breech is closed, except at its upper front portion, where the point of the hammer H protrudes in its movement. As before stated, this frame is pivoted on a pin or screw F, which extends through the receiver and on which it turns, as represented in Fig. 2, to open the breech. The lock mechanism is wholly mounted within this pivoted frame G, and is therefore moved with it. This mechanism consists of a hammer H, segmental in outline, it being pivoted on a pin *i*, which extends transversely through the frame G. The rear portion of the hammer H is formed with an opening of the form shown in Fig. 1, the lower front wall of this opening being vertical and terminating at its upper end in a horizontal shoulder *w*, from the rear extremity of which a curved shoulder *w'* extends, and against which shoulders the free end of the mainspring S bears, there being a slot or opening in the rear seg-

mental face of the hammer, through which the spring projects, as shown in Figs. 1 and 2, this slot being of sufficient length to permit the free play of the spring, and also to permit the hammer to be turned on its pivot to be cocked when the breech is opened, as represented in Fig. 2.

In order to automatically cock the hammer in opening the breech, a pin I is inserted through the receiver, it passing through the opening in the hammer H, this pin being located, as represented in Fig. 1, so that as the frame G is turned on its pivot to open the breech the vertical wall of the opening in the hammer will bear against the pin I, and as the frame continues its movement the hammer, being carried backward with the upper portion of the frame in the arc of a circle around the pivot F, on which the frame G moves, will, by the contact of its lower portion with the stationary pin I, be caused to turn on its pivot *i* until it has been brought to the full-cock position, as shown in Fig. 2, at which time the nose of the trigger *t* enters the slot in the rear face of the hammer and holds it in the cocked position, the rear projection *y* of the trigger at such time bearing on the lower wall of the frame G, in which it is pivoted, by which means it is prevented from tipping and releasing its hold on the hammer, as shown in Fig. 2. Any other form of stop may be used to hold the trigger.

In order to prevent the hammer from being accidentally released while the breech is open, I pivot a locking-bar *o* directly in rear of the trigger, with a spring *n* bearing on its rear end, so that when the hammer is cocked the front end of the bar *o* will be forced up in rear of a projection *o'* on the back of the trigger, as shown in Fig. 2, and thus lock the trigger fast, so that it cannot be moved until released. In order to automatically release the trigger as the breech is closed, a pin *c* is inserted through a hole in the locking-bar *o* and made to project through slots in the frame G far enough to strike against the cheeks of the receiver just before the breech is entirely closed, whereby the front end of the lever is thrown down out of the way of the trigger, as represented in Fig. 1, thus leaving the gun ready to be fired. To make a better finish, small grooves are cut in the inner faces of the receiver-cheeks for a short distance from its under edge, in which the projecting ends of the pin *c'* move until they strike the shoulder at the ends of the grooves, by which the lever *o* is held stationary, while the frame G continues its movement far enough to carry the projection *o'* of the trigger clear of the locking-lever. The mainspring is made of U form, its lower arm *r'* serving as a trigger-spring, and, if desired, the spring *n*, which bears on the locking-bar *o*, may be made integral with the arm *r'*, as shown, though a separate spring may be used for this, if preferred. By making these springs in the man-

ner shown a single screw serves to hold them all in place, a solid lug or cross-bar in the rear part of the frame G serving as a support for the same, as shown in Figs. 1 and 2. The rear face of the cross-bar *l* of the locking-brace E of the breech-bolt is rounded or made convex, as shown in Figs. 1, 2, and 3, and the nose or upper extremity of the pivoted frame G is provided with projecting points *k*, which, as the breech is closed, engages or rides over and bears on the cross-bar *l*, thereby forcing the rear end of the locking-brace down in front of the shoulders R, so that the act of closing the breech also locks the breech-bolt fast. As of course this locking-brace must be raised from contact with the shoulder R before the breech-bolt can begin its backward movement, I have devised a special means for that purpose. This consists of an extra link *g*, which, as shown in Figs. 4 and 5, is placed between the two links *h h*, which latter serve to connect the breech-bolt C with the arm *m* of the rocking frame G and move the bolt. The link *g* has a slot at its upper end, while the links *h h* have similar slots at their lower ends, as shown more clearly in Fig. 5, each of the links having holes in their opposite ends. Now when the frame G begins its movement the pin *t'* in the arm *m* will shove the link *g* up the length of the slots, while the links *h h* remain stationary, (so far as longitudinal motion is concerned,) this movement causing the upper end of link *g* to protrude from between the links *h h*, and, pressing against the under side of the cross-bar *l*, will force the rear end of locking-brace E up clear of the shoulder R, after which the further movement of the frame G will cause the breech-block to move backward, the position of the link *g* at the beginning of its operation being shown by the dotted line in Fig. 1, and near the end of its operation in Fig. 3.

In order to secure the necessary length of movement of the breech-bolt C, the lower ends of the links *h* are beveled or inclined, as shown, so that as the arm *m* swings backward these inclined ends of the links *h* will come in contact with the shoulder *d'* at the bottom of the slot in which they are pivoted, as shown in Fig. 4, and as the arm continues its movement this shoulder, acting on the inclines of the links *h*, will force them upward, and that, with the inclination of the face of the shoulder *d'*, which will act upon the extreme ends or points of the links at the last part of the movement, as shown by the dotted lines in Fig. 2, will impart to the bolt C the necessary movement, the links *h* being shoved up the length of the slots in their lower ends. The reverse movement of the frame G will of course impart a reverse motion to these several parts and carry the breech forward to its closed position, as shown in Fig. 1, the nose *k* of the frame G at the same time coming in contact with the rear end of the brace E and force it down in front of the shoulders R, there-

by securely locking the breech-bolt fast, all being accomplished by a simple movement forward and back of the handle or lever L. The locking-brace E is provided with a shoulder arranged to strike against a stop-pin *b* when its rear end is raised, as shown in Fig. 3, so as to prevent it from being accidentally raised too high for the nose *k* of the frame to engage upon it and force it to its seat when the gun is closed. Any other form of stop, of course, may be substituted for this. In the side of the bolt C is a groove *a* to enable it to slide past a small pin or stud *p*, projecting from the inner face of the receiver, as shown in Fig. 7, this pin being located at such a point that when the cartridge-shell shall have been drawn entirely out of its chamber in the barrel its head will strike against the pin *p* and stop it, while the hook-extractor, pulling on the opposite side of shell, will cause it to be thrown sidewise out of the receiver.

The magazine M is made in the form of a box similar to the well-known Lee magazine, and is inserted in a slot in the lower side of the receiver and provided with a suitable spring and follower to feed the cartridges upward into the receiver, from whence they are shoved forward into the chamber by the breech-bolt, as usual.

In order to conveniently attach and detach the magazine, I construct it with a central projecting rib on its rear edge, in which at the proper point a transverse notch is formed, as shown in Fig. 10 and in dotted lines in Fig. 7, the projecting rib being also shown in Figs. 1 and 2.

In a hole through the receiver at the rear edge of the box I mount a flat bolt *r*, having a notch or recess in its face, with a beveled projection *n'* on one side of said recess, as shown in Fig. 7, so that as the box is shoved into its seat the rib on the box will strike the beveled face of the projection *n'* and shove the bolt over until the notch in the side of the rib comes opposite the projection *n'*, when a spring under the head of the bolt will cause it to move and lock the box fast. To remove the box, it is only necessary to push on the head of bolt *r* and shove the catch *n'* back out of the notch, when the box can be drawn out and another substituted with a fresh supply of cartridges.

In order to enable the gun to be used as a single-loader, I apply a cut-off to the receiver just above the top of the magazine. This consists of a small plate or leaf *v*, which is pivoted at or near one end in a slot *d* in the side of the receiver, as shown in Fig. 6, the slot being shown in Figs. 1 and 2. On the outside of the receiver over this plate I secure a slide *u* by screws, which pass through slots in the flanges of the slide, by which it can be moved to and fro by the hand whenever desired. This slide has a recess longitudinally of its center on its inner side of the proper size to permit the outer edge of the plate *v* to

rest therein when not in use. At the same end at which the plate is pivoted to the receiver it has a pin *m'*, which engages in a transverse slot in the slide, as shown in Fig. 6, so that by moving the slide in one direction the plate is thrown inward to the position shown by the dotted lines, thus preventing cartridges from being fed up out of the magazine, and also enabling the gun to be used as a single-loader, whether the magazine be attached or not. By these several improvements I am enabled to produce a strong and efficient arm that can be operated with rapidity and safety by the simple movement to and fro of the hand-lever, and that can be used as a repeater or single-loader at will.

Having thus described my invention, what I claim is—

1. The combination, in a gun, of the reciprocating breech-bolt provided with the hinged locking-brace E, arranged to engage with the shoulders R of the receiver, and the rocking frame G, having its arm *m* connected to the bolt by means of the slotted links *g* and *h*, the said parts being constructed and arranged to operate substantially as and for the purpose set forth.

2. In combination with the rocking frame G, the hammer H, pivoted therein and having its lower arm arranged to come in contact with the fixed pin or projection I as the frame is rocked to open the breech, whereby the hammer is automatically forced to the cocked position in the act of opening the breech.

3. In combination with the rocking frame G, having the hammer H pivoted therein, the trigger provided with the shoulder *y*, arranged to lock against the wall of the frame or similar stop, while its nose is engaged with hammer, whereby the hammer is held secure when at full cock and the breech is open.

4. In combination with the hammer, the trigger provided with the shoulder *o'* and the spring-actuated locking-lever arranged to engage therewith, said lever being provided with one or more lateral projections working through slots in the side of the frame and arranged to strike against the walls of the receiver as the breech is closed, whereby the trigger is automatically locked when the breech is opened and automatically released as the breech is closed.

5. In combination with the receiver having an opening in its lower wall for cartridges to be fed up through, the pivoted cut-off plate *v*, connected to the reciprocating slide *u*, substantially as shown, whereby the movement of the slide is caused to operate or move the cut-off plate, substantially as and for the purpose set forth.

6. In combination with the slotted frame or receiver, the spring-bolt *r*, provided with the inclined or beveled faced projection *n'*, and the detachable magazine or box M, provided with a notch in its rear edge, substantially as and for the purpose set forth.

7. In combination with the reciprocating  
breech-bolt provided with a hinged locking-  
brace arranged to engage against shoulders  
on the receiver, the rocking frame provided  
5 with the nose or beak *k*, arranged to ride over  
the rear end of the brace and force it into  
the locked position as the breech is closed.

In witness whereof I hereunto set my hand  
in the presence of two witnesses.

ALBERT A. CLIVE.

Witnesses:

C. A. HALLENBECK,  
M. B. CLIVE.