(No Model.) 6 Sheets—Sheet 1.

W. MASON.

MAGAZINE FIRE ARM.

No. 454,582. Patented June 23, 1891.

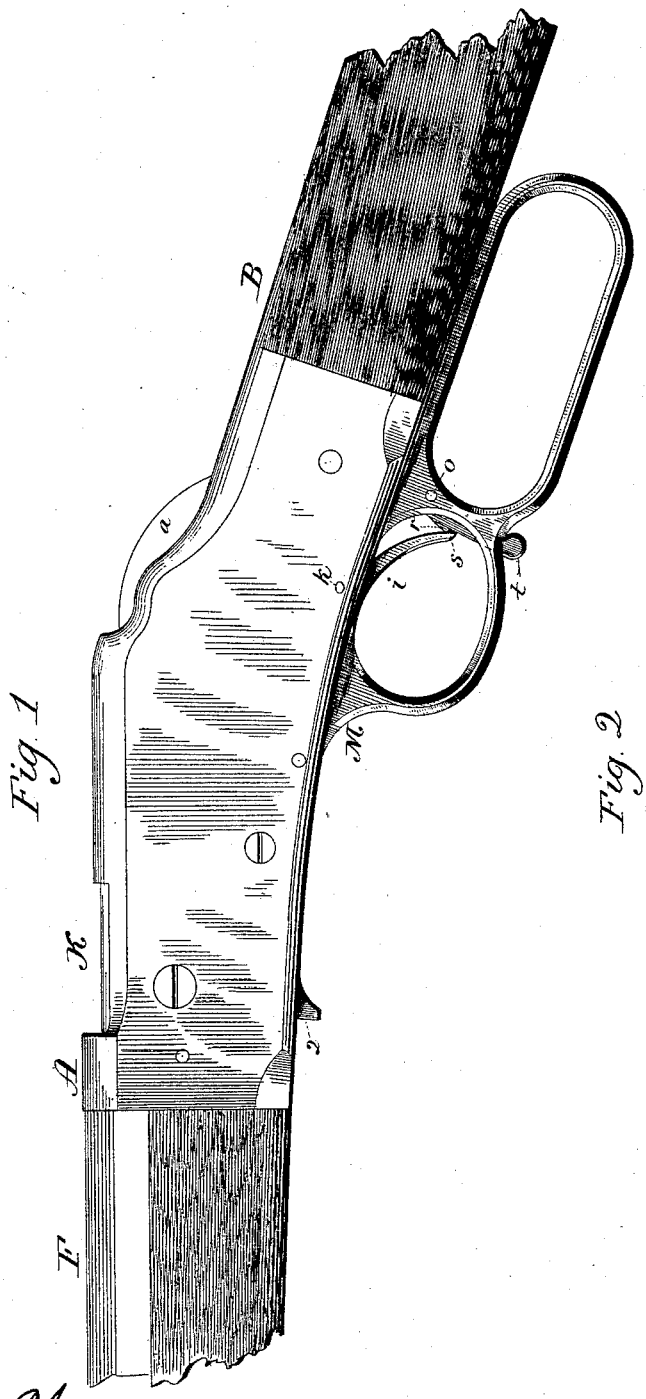

Fig. 1

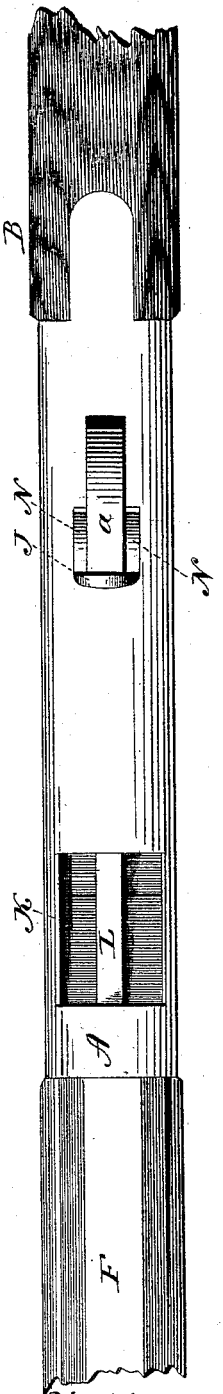

Fig. 2

Witnesses.
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(No Model.) 6 Sheets—Sheet 2.

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MAGAZINE FIRE ARM.

No. 454,582. Patented June 23, 1891.

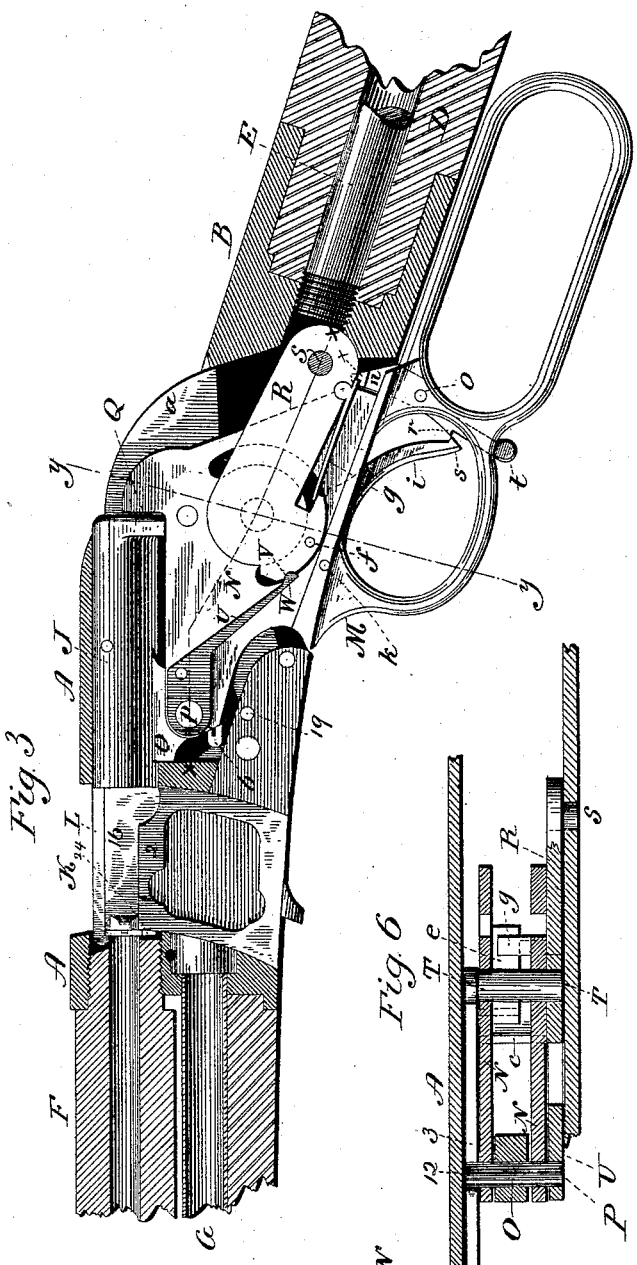

Fig. 3

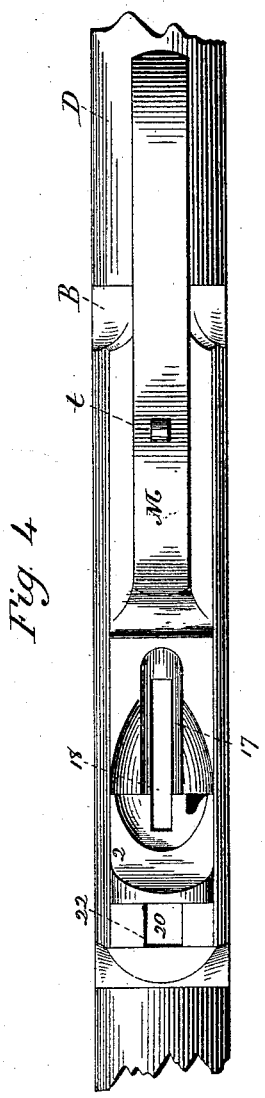

Fig. 4

Fig. 6

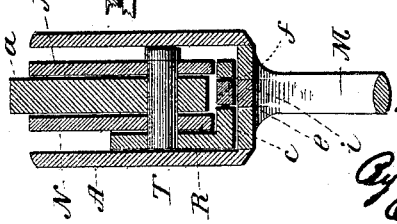

Fig. 5

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MAGAZINE FIRE ARM.

No. 454,582. Patented June 23, 1891.

Fig. 7

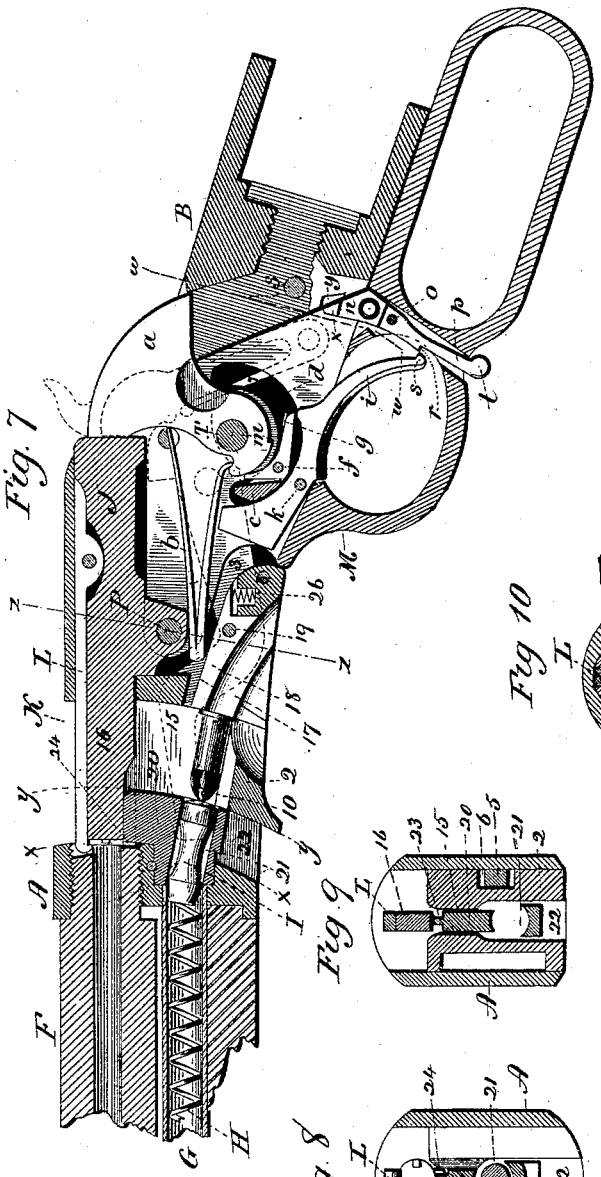


Fig. 10a

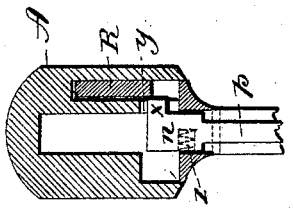


Fig. 10

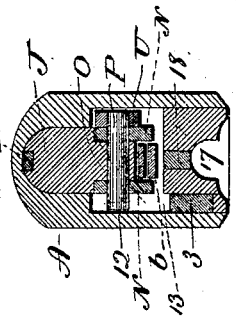


Fig. 9

Fig. 8

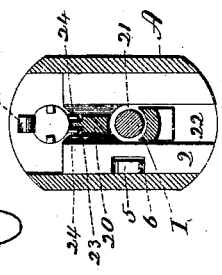
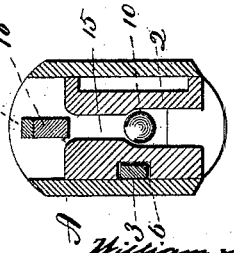


Fig. 9a



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MAGAZINE FIRE ARM.

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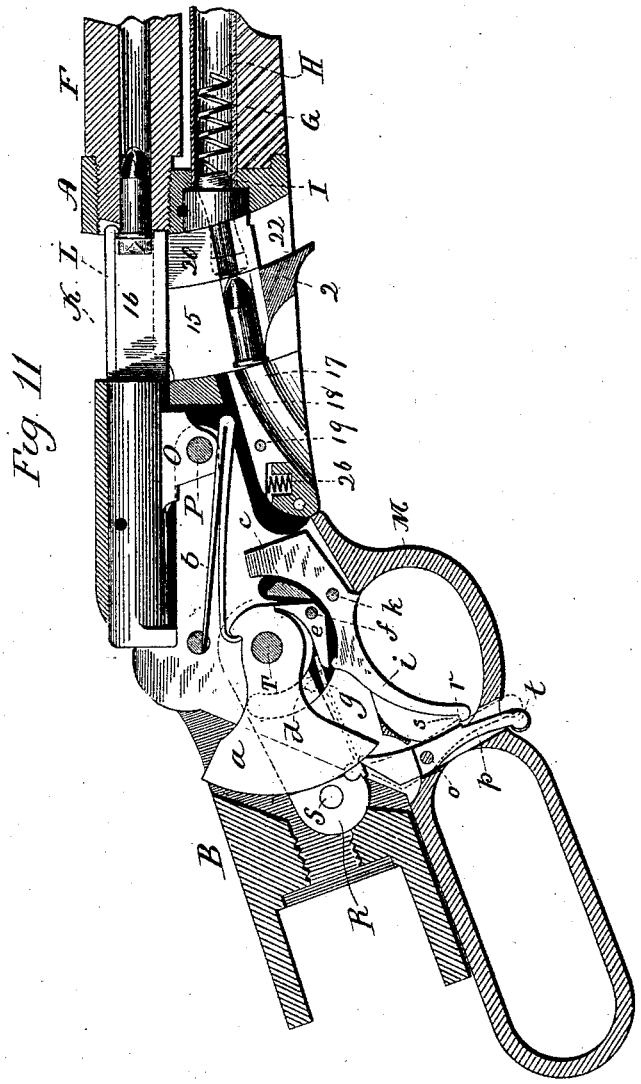
Fig. 11



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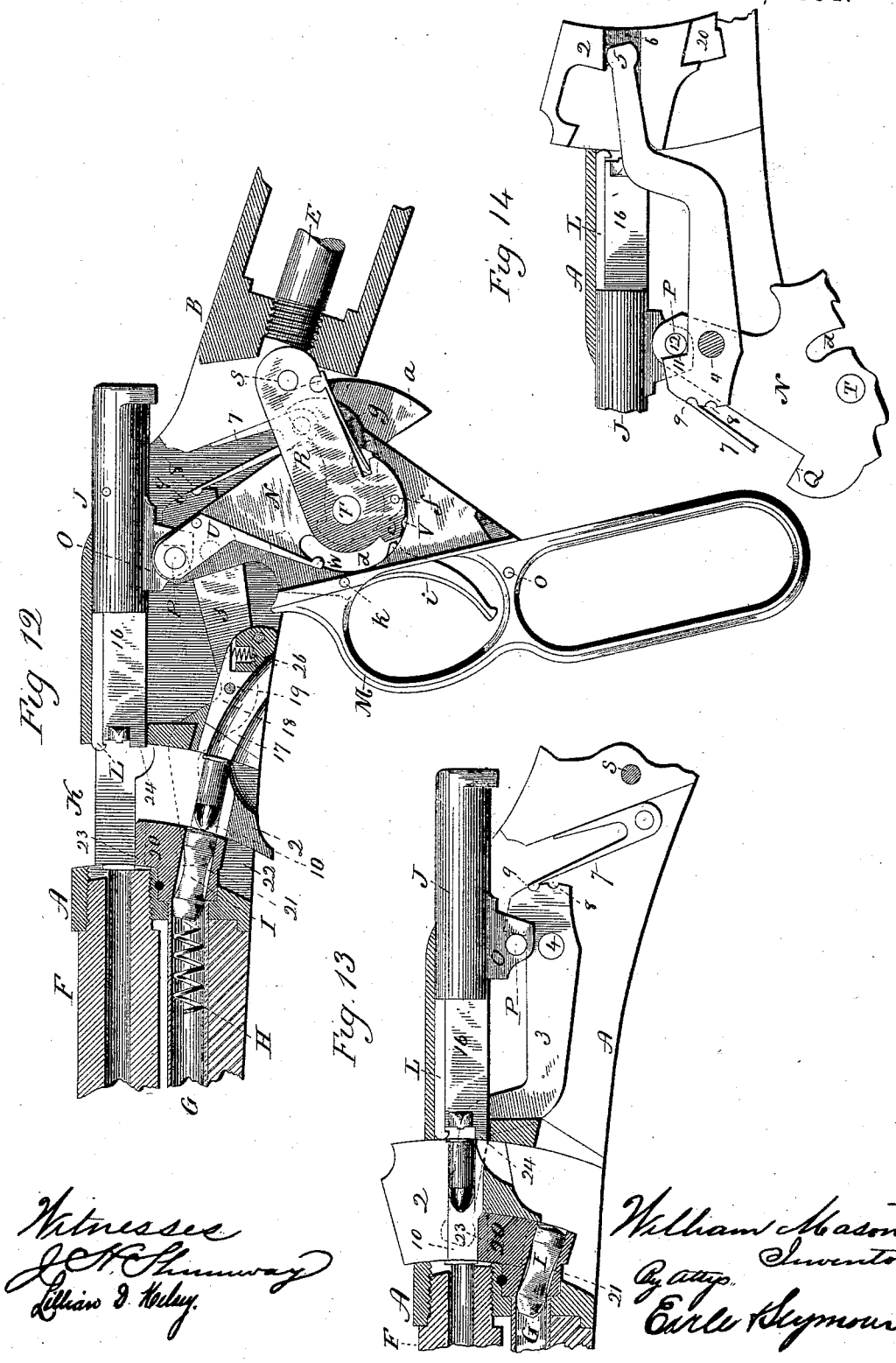

Witnesses
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(No Model.) 6 Sheets—Sheet 6.

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MAGAZINE FIRE ARM.

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Fig 15

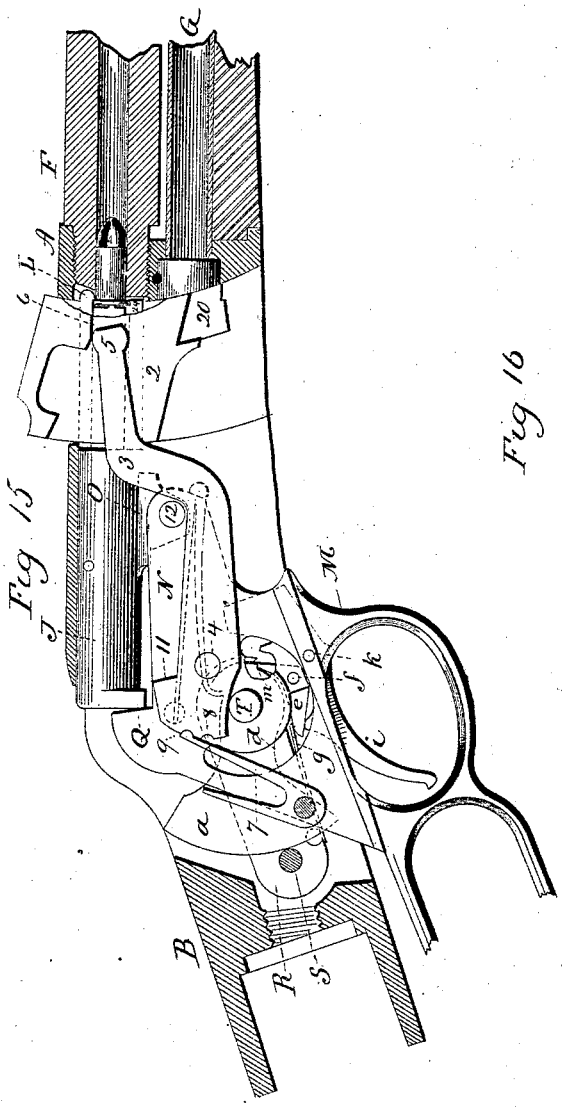
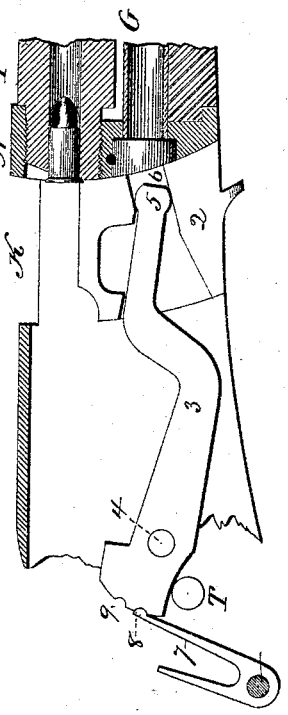


Fig 16



Witnesses.
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UNITED STATES PATENT OFFICE.

WILLIAM MASON, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE WINCHESTER REPEATING ARMS COMPANY, OF SAME PLACE.

MAGAZINE FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 454,582, dated June 23, 1891.

Application filed February 9, 1891. Serial No. 380,794. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MASON, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Magazine Fire-Arms; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a side view of the arm, portions forward and rear of the receiver broken away; Fig. 2, a top view of the same; Fig. 3, a sectional view cutting through the center of the barrel and magazine, but showing side view of the carrier and the mechanism of the arm, looking from the left, showing the parts in their closed or normal position; Fig. 4, an under side view of the arm; Fig. 5, a transverse section on line *y y* of Fig. 3, looking forward; Fig. 6, a transverse longitudinal section cutting on line *x x* of Fig. 3, looking downward; Fig. 7, a longitudinal section showing the hammer and its mechanism in side view, parts being in the closed or normal position, looking from the left; Fig. 8, a transverse section cutting on the line *x x* of Fig. 7, looking rearward; Fig. 9, a transverse section cutting on line *y y* of Fig. 7, looking forward; Fig. 9ª, a transverse section cutting on same line *y y*, looking rearward; Fig. 10, a transverse section on line *z z*, looking rearward; Fig. 10ª, a transverse section on line *w w*, looking rearward; Fig. 11, a longitudinal sectional side view, looking from the right, showing the parts in their normal position, except that the hammer is cocked; Fig. 12, a longitudinal sectional side view, looking from the left, showing the parts in the opening position and just before the breech-piece reaches its extreme rear position and as the carrier is about to commence its rise; Fig. 13, a detached longitudinal section, showing the carrier in the raised position, looking from the left; Fig. 14, a detached sectional view showing side view of the carrier and its lever, looking from the right; Fig. 15, a sectional side view, looking from the right, the parts being in the position of the carrier raised and just as the movement is to be completed to return the carrier and bring the parts to the normal position with the hammer cocked; Fig. 16, a detached longitudinal section, looking from the right, showing the carrier and its lever in the down position.

This invention relates to an improvement in that class of magazine fire-arms in which the magazine is arranged below the barrel and both the barrel and the magazine opening into the receiver at the rear and in which the breech-piece is arranged to move longitudinally backward and forward from and toward the rear end and so as to open and close the breech of the barrel, and in which the carrier is arranged to move vertically to transfer a cartridge from the magazine to a position between the open breech-piece and the rear end of the barrel, so that the forward movement of the breech-piece will transfer the cartridge from the carrier into its place in the barrel, parts of the invention, however, being applicable to single-loaders, the object of the invention being the construction of an arm specially adapted for the employment of the smaller sizes of cartridges; and the invention consists in the arrangement and combination of mechanism as hereinafter described, and particularly pointed out in the claims.

A represents the receiver, constructed at its rear end with tangs B C, by which it is secured to the stock D in the usual manner, the connection between the stock and the receiver being strengthened by a spindle E, screwed into the rear end of the receiver and extending back into a corresponding hole in the stock. At the forward end of the receiver the barrel F is attached and opens into the receiver at the rear, in the usual manner for this class of arms. Below the receiver the magazine G is arranged and opens into the receiver at the rear, also in the usual manner, the magazine being provided with the usual spring H and follower I, by which the column of cartridges is forced rearward.

J represents the breech-piece, which is arranged in the receiver in line with the barrel and so as to receive a reciprocating movement to draw the breech-piece from the closed position, as seen in Fig. 3, to the wide-open position seen in Fig. 12, and so that when the breech-piece is in the forward position, as seen in Fig. 3, the rear end of the barrel will

be closed, or when the breech-piece is withdrawn, as seen in Fig. 12, it will open a space between the forward face of the breech-piece and the rear end of the barrel for the insertion of cartridge directly into the barrel should occasion require the use of the arm as a single-loader.

The receiver is constructed with an opening K through its top for the introduction of a cartridge or the ejection of the exploded and withdrawn shell, or the cartridge if it be not exploded.

The breech-piece is provided with a retractor L, arranged on the top of the breech-piece, and with its nose hook-shaped, so as to engage the head of the cartridge-shell when in the forward position, and so that as the breech-piece is withdrawn the shell or cartridge so engaged in the barrel will be withdrawn therefrom, so as to be ejected or removed through the opening K.

To impart the reciprocating movement to the breech-piece the trigger-guard lever M is employed. This lever is constructed with two upwardly-projecting cheeks N N within the receiver, which extend forward and are hung to a downwardly-projecting lug O on the breech-piece by a transverse pivot P, passing through the ends of the cheeks N and through the lug of the breech-piece, as seen in Figs. 6 and 10. The cheeks N N extend rearward, and at their rear ends are turned upward to form shoulders Q to stand at the rear end of the breech-piece, as seen in Figs. 2, 3, and 11, when the breech-piece is in the closed position, and the lever being held in this position the shoulders Q form a support for the breech-piece in the closed position to enable it to resist recoil.

Within the receiver at the rear and one side of the cheeks N a link R is hung upon a transverse pivot S and so as to swing in a vertical plane. The pivot S is at a point below the pivot P on which the lever M is hung. The link extends forward and is hung to the cheeks N of the lever M by a pivot T, which passes through the said link R and the cheeks, as seen in Fig. 5. The pivot S is stationary in the receiver. Hence as the lever is turned downward, as from the position in Fig. 3 to that seen in Fig. 12, it swings upon the breech-piece pivot P and draws the pivot T downward. Consequently, as the link cannot move forward, such downward movement of the forward end of the link will impart a retreating movement to the lever, which will take the breech-piece with it, so that when the lever has reached its extreme down position the breech-piece will have reached is wide-open position. As the lever commences its opening movement, the shoulders Q descend with the lever from their position at the rear of the breech-piece, so as to unlock the breech-piece to permit it to be forced backward under the swinging movement of the lever. Then as the lever is returned the link R imparts a corresponding forward movement to the lever and to the breech-piece until the closed position of the breech-piece is reached, when the shoulders Q again come into their locking position. Preferably the pivot T in the closed or normal position stands in a line somewhat above a line drawn between the pivots P and S. This arrangement permits a slight movement of the lever in advance of the rear movement of the breech-piece, so that the shoulders Q may freely escape from the breech-piece before the breech-piece commences its rear movement and return to their locking position after the breech-piece is closed.

To yieldingly hold the lever and link in their normal or closed position, a spring U is attached to one of the cheeks (see Fig. 3) forward of the link R, the nose of the spring extending toward the hub of the link and so as to bear thereon, the hub constructed with a cavity V and the nose of the spring with a corresponding projection W, which interlock when the parts are in the closed or normal position, the shape of the nose of the spring and the cavity being such as shown, so that force applied to the lever in the opening movement will readily disengage the link from the spring and bring them again into engagement when the parts are returned to the closed position.

The hammer *a* is hung between the two cheeks N N of the operating-lever and upon the same pivot T which joins the operating-lever and the link R, and so that the hammer may swing backward from its down position (seen in Fig. 7) to its cocked position (seen in Fig. 11) and return.

Between the cheeks the mainspring *b* is arranged, as seen in Figs. 7 and 11, so as to be compressed in the opening movement of the breech-piece, as seen in Fig. 11, and so that the reaction of the spring when released will bring the hammer to its forward or striking position, as seen in Fig. 7.

The hub of the link R is constructed with a concentric lateral projection *c*, which extends through corresponding concentric slots *d* in the cheeks, as seen in Fig. 5, this projection *c* being below the hammer, and in this projection *c* the sear *e* is hung upon a pivot *f*, and to the link R the sear-spring *g* is attached at its rear end. The spring extending forward bears upon the tail of the sear, as seen in Figs. 3 and 12, and so as to force the nose of the sear against the hub of the hammer, that it may engage the notch of the hammer when and so as to hold the hammer in the cocked position, as seen in Fig. 11.

In the operating-lever M below the sear the trigger *i* is hung upon a pivot *k*, (see Figs. 7 and 11,) the trigger being adapted to bear upon the tail of the sear, as seen in Fig. 15, where the hammer is shown in the cocked position engaged by the sear and so as to disengage the hammer, as usual, upon the pull of the trigger in other fire-arms.

In the opening movement of the operating-

lever the hammer rests in its normal position between the cheeks until the wide-open position is reached, as seen in Fig. 12; but in such opening movement the sear has swung with the link around the hub of the hammer, taking the sear from the position seen in Fig. 7 to that seen in Fig. 12, when the wide-open position is reached, the nose of the sear in this wide-open position being at the rear of the cock-notch *m* of the hammer. Consequently when the return movement of the lever is made the link will return the sear until the nose of the sear engages the cock-notch of the hammer. Then when such engagement is made between the sear and hammer the continued closing movement will cause the hammer to turn rearward upon its pivot to the position seen in Fig. 11, where it is still held by the engagement of the sear with the hammer, to be released by the pull of the trigger. The hammer may be provided with a thumb-piece, as indicated in broken lines, Fig. 7, by which it may be cocked when the parts are in the closed position; but ordinarily such a thumb-piece is unnecessary.

As a means for locking the parts in the closed or normal position, I arrange a dog *n* in the lever M, hung upon a pivot *o*, between the handle and trigger-guard portions of the lever. An extension from the dog is made below the pivot to form a tail *p*, the forward side of the tail projecting into the trigger-guard and so that a shoulder *r* on the tail of the dog may stand in the path of a corresponding shoulder *s* at the end of the trigger, and so that as the tail of the dog is pressed forward the shoulder of the tail will pass over the shoulder of the trigger, as seen in Fig. 11, and so as to hold the trigger in that position and prevent its pull to release the sear. The tail of the dog extends down through the lever and so as to form a convenient projection *t*, by which the lever may be moved. While the trigger is thus engaged the hammer will remain at full-cock; but by breaking the engagement between the dog and the trigger, as seen in broken lines, Fig. 11, the trigger may be pulled. The nose of the dog is constructed with a lateral projection *x* upon its outside, and immediately back of the dog the receiver is constructed with a corresponding notch *y*, into which the dog may be turned when the parts are in the closed position, as seen in Fig. 10ª, and so that at the same time the trigger is engaged to prevent its being pulled the lever is also locked in the closed position; but upon withdrawing the dog from engagement with the trigger the dog is also disengaged from the receiver and the parts are left free for operation.

To yieldingly retain the dog in either position to which it may be set, a frictional spring *z* is arranged in the dog near the pivot, which bears against the side of the space in the lever in which the dog is hung, so as to create a friction between the two sufficient to hold the dog at any position to which it may be turned.

As thus far described, while the construction is peculiarly adapted to a magazine-gun, it will be understood that these parts may be used as a single-loader, the magazine and its attendant mechanism not being essential to the working of the arm as a single-loader.

The carrier-block 2 is arranged in a vertical recess at the forward end of the receiver and at the rear of the barrel, the carrier being adapted to move up and down in similar manner to that of the well-known Winchester arm; but instead of moving in a direct vertical path, as in the Winchester arm, the block is constructed in the form of a segment of a circle, the center of which is forward, and the recess in the receiver is of corresponding shape, as clearly seen in Fig. 3.

The up-and-down reciprocating movement is imparted to the carrier by means of a lever 3, hung upon a pivot 4 in the receiver and so as to swing up and down. The lever is arranged in the receiver upon the side opposite the link R. It extends forward, its extreme forward end 5 working in a recess 6 in the side of the receiver, as seen in Figs. 15 and 16, also seen in Figs. 8 and 9, and so that as the lever is turned from its down position (represented in Fig. 12) to its up position (represented in Figs. 13 and 14) the carrier will be raised accordingly, and the return of the lever 3 will correspondingly return the carrier. In rear of the lever 3 a spring 7 is arranged adapted to bear against the rear end or hub of the said lever 3, as seen in Fig. 15. The lever 3 is constructed with a notch 8, in which the lever may rest when in the down position, as seen in Fig. 12, the shape of the nose of the lever and the notch being such that the spring will yield under a force applied to turn the lever upward. A second notch 9 is formed in the end of the lever above the notch 8, and in which the spring may in like manner rest when the carrier is in the up position, as seen in Fig. 13. The shape of the nose of the dog and of the notches causes a cam-like action to insure the bringing of the carrier to its two extreme positions and hold the carrier in those positions with the required firmness.

The carrier is constructed with a cartridge-chamber 10, (see Figs. 7 and 9ª,) which is radial to the curve of the carrier. The chamber 10 opens to the magazine when in the down position and so as to receive a cartridge therefrom, as seen in Fig. 7, the cartridge passing from the magazine into the carrier by the force of the magazine-spring, as usual in this class of arms; but it will be observed that owing to the radial position of the cartridge-chamber 10 in the carrier the chamber when in the down position inclines downward and rearward, or oblique to the axis of the breech-piece, so that the rear end of the chamber is nearer the under side of the receiver than the forward end and considerably below the magazine. The reasons for or advantages of this construction will be presently explained.

The carrier-lever is constructed with a

shoulder 11 at the hub, and which stands in the path of the end 12 of the pivot P, (see Fig. 14,) which projects into the recess 13 in the side of the receiver (see Fig. 10) in which the carrier-lever works, and so that as the breech-piece moves rearward and reaches the position seen in Fig. 12 the projecting end 12 of the pivot P will strike the said shoulder 11, and then during the slight movement required to complete the rear movement of the breech-piece the lever will be turned so as to throw the carrier to the up position, as seen in Fig. 14, and then as the breech-piece is returned and just as the forward movement is being completed a projecting end of the pivot T strikes the carrier-lever in rear of the pivot 4, on which the carrier-lever is hung, as seen in Fig. 15, and so that as the closing movement is completed the carrier-lever will be returned to its down position, as seen in Fig. 16. When the carrier reaches its extreme upward position, as seen in Fig. 15, the radial cartridge-chamber is then brought into direct line with the axis of the barrel and forward of the breech-piece and so that as the breech-piece is moved forward its forward end will pass through the cartridge-chamber and force the cartridge therein into the barrel, as seen in Fig. 15.

The carrier is constructed with an opening 15 upward through it, but narrower than the cartridge-chamber, and the corresponding portion 16 of the breech-piece is reduced, so that after the breech-piece has been returned to its forward or closed position through the carrier to force the cartridge from its chamber in the carrier into the barrel the carrier may then return, the opening 15 upward through the carrier permitting the carrier to drop, this construction of the open carrier and contracted breech-piece being substantially the same as that in the well-known Winchester arm.

To permit the charging of the magazine while the parts are in the closed or normal position, a groove or chute 17 is formed upon the under side of the receiver, (see Figs. 4 and 7,) starting forward of the trigger-guard and inclining or curving upward to the cartridge-chamber in the carrier, this chute forming an open continuation of the cartridge-chamber in the carrier when the carrier is in the down position, and as clearly seen in Fig. 7, so that the cartridges may be inserted through the said chute into the cartridge-chamber one after another, each successive cartridge forcing the preceding cartridge forward into the magazine against the pressure of the magazine-spring. As a catch to engage the heads of the cartridges as they are delivered into the cartridge-chamber of the carrier, a latch 18 is hung in a recess in the chute 17 upon a pivot 19, the nose of the latch extending forward and so as to normally stand just in rear of the upper edge of the cartridge-chamber. At the rear of the pivot or at any suitable point a spring 26 is applied, the tendency of which is to yieldingly hold the latch 18 in the down position, slightly over the rear end of the opening into the cartridge-chamber in the carrier, and as seen in Fig. 18; but as the cartridges are forced through the chute into the cartridge-chamber the latch 18 will yield to permit the head of a cartridge to pass into the chamber in the carrier, and when the head has so passed into the carrier the latch will drop in rear of the head, as seen in Fig. 7, and thus hold the column of cartridges against the power of the magazine-spring. By constructing the carrier of segment shape and so that the cartridge-chamber will be in line with the barrel when in the up position, but oblique thereto when in the down position, as seen in Fig. 7, the rear end of the chamber being considerably below the forward end, the chamber in the carrier is carried so near the under side of the receiver as to make it convenient for the insertion of cartridges through the carrier to the magazine while the parts are in their normal position, whereas were the block constructed to move in a vertical position, so that the cartridge-chamber would be parallel to the axis of the barrel when the carrier was in the down position, the rear end of the cartridge-chamber would be so high or so far above the under side of the carrier as to make it difficult to introduce the cartridges through a chute in the under side of the receiver. Hence the segment shape of the carrier and its corresponding segmental path of movement very greatly facilitates the charging of the magazine over what could be done with a magazine moving in a direct vertical path.

In the smaller class of arms, such as 22^s and 32^s, various lengths of cartridges are desired. To construct arms for each of the varying sizes would necessitate a multiplication of tools, as well as the carrying of a stock of each of the sizes. To construct the arm so that it may be readily converted from one length of cartridge to another, I construct the carrier-recess in the receiver of a length at least as great as that of the longest cartridge required, and the carrier is constructed of a corresponding length.

In the forward end of the carrier-opening in the receiver I introduce a plug 20, with an opening longitudinally through it, forming a continuation of the magazine, as seen in Fig. 7, and this plug projects into the carrier-opening to an extent to reduce the length of that opening to the length of cartridge required. In Fig. 7 this plug is shown of a length to reduce the opening to the length of a short cartridge. The opening 21 through this plug is inclined downward, corresponding to the inclination of the cartridge-chamber in the carrier when the carrier is in the down position, as clearly seen in Fig. 7. The plug is narrower than the width of the carrier, and the carrier is constructed with a vertical recess 22, corresponding to the width of the plug 20, as seen in Figs. 4, 8, and 9. The

portion of the plug 20 above the opening 21 is of a width corresponding to the width of the contracted portion of the breech-piece, as seen in Figs. 8 and 9, and extends up into line with the under side of the breech-piece, as seen in Figs. 7 and 8, so as to form a guide for the cartridge in its passage from the chamber in the carrier to the barrel. At the extreme upper edge of the plug 20 it is further reduced on each side, as at 23, to permit the downwardly-projecting shoulders 24, formed on the breech-piece, to pass backward and forward, these shoulders being adapted to pass under the edge of the head of the cartridge, as seen in Fig. 7, and so as to support the head below, while the extractor engages it above. If it be desired to adapt the arm for a cartridge of a greater length, the plug employed in the case of the shorter cartridge is removed and a correspondingly shorter plug introduced at the same time the carrier for the shorter cartridge is removed, and a carrier corresponding to the shorter plug and to the longer cartridge is introduced, the plugs and carriers being interchangeable, so that the same arm may be readily adapted to any desired length of cartridge, the construction of the arms for the various lengths of cartridges being the same in every respect, except as to the plug and carrier. The plug, however, may be omitted, and the carrier constructed accordingly, it not being essential to the entire invention that there shall be this adaptability of change of the carrier and plug whereby the arm is adapted to the employment of cartridges of various lengths.

While I have represented and described the arm as being operated by a lever which terminates in a trigger-guard and handle—a common and well-known construction of operating-lever—it will be understood that instead of extending the lever to form the trigger-guard and handle a reciprocating handle may be arranged forward of the receiver beneath the barrel, with a connection therefrom to the lever and so that the forward and back movement of the said handle will impart a corresponding opening and closing movement to the mechanism of the arm. This arrangement of the handle forward of the receiver as a substitute for the trigger-guard and handle is too well known to require illustration.

While the segment-shaped carrier, which travels in a corresponding arc of a circle, is specially adapted to the peculiar mechanism of the arm which I have illustrated and described, it will be evident to those skilled in the art that the same segment-shaped carrier with substantially the same advantages may be employed with other mechanism for imparting movement to the breech-piece and to the carrier, as, for illustration, that of the well-known Winchester repeating-arm. This adaptation is too apparent to require illustration.

The introduction of the plug into the forward end of the carrier-recess and the corresponding construction of the carrier, whereby the arm is adapted to be changed to various lengths of cartridges, may also be applied in other arms in which the carrier receives an up and down movement for the transfer of the cartridge from the magazine to the barrel.

I claim—

1. In a fire-arm having a barrel opening at the rear into a receiver, the combination therewith of a longitudinally-guided reciprocating breech-piece arranged in the receiver in line with the barrel, a lever hung by one end to the under side of the breech-piece and so as to swing in a vertical plane, a link hung upon a stationary pivot in the receiver at the rear, the link extending forward and hung by a pivot to the said lever, the said lever constructed with two vertical cheeks, the said cheeks extending upward and so as to form shoulders in rear of the breech-piece in the closed position, a hammer hung between the cheeks and upon the pivot which connects the said link to the said lever, a mainspring for the said hammer, also arranged in said lever, a sear hung in the hub of the said link, and a trigger hung in the said lever, the said sear being adapted to engage the hammer at full-cock and the trigger adapted to release the same, substantially as described.

2. In a fire-arm in which the barrel opens into the receiver at the rear, the combination therewith of a longitudinally-guided reciprocating breech-piece arranged in the receiver in line with the barrel, a lever hung by its forward end to the under side of the said breech-piece and so as to swing in a vertical plane, a link hung in the receiver upon a stationary pivot at the rear, the said link extending forward and hung upon a pivot to the said lever, the said lever constructed with vertical cheeks forming a vertical open space between them, the engagement of the said link with the said lever being upon the outside of one of the said cheeks, the said cheeks constructed with a segmental slot concentric with the axis of the pivot by which the said lever and link are connected and the said link constructed with a lateral projection through the said slots crossing the open space between the said two cheeks, a hammer hung upon the same pivot which connects the link with the lever and provided with a mainspring between the said cheeks, a sear hung in the said projection of the link between the cheeks, a sear-spring on said link, the sear traveling with the link in the opening movement, while the hammer travels with the lever, the nose of the sear being adapted to engage the cock-notch of the hammer on the return or closing movement of the said link and lever, whereby the hammer is automatically brought to the cocked position, with a trigger hung in the said lever and adapted to engage the sear when the parts are in the closed position, substantially as described.

3. In a fire-arm in which the barrel opens into the receiver at the rear, the combination

therewith of a longitudinally-reciprocating breech-piece arranged in the receiver in line with the barrel, a lever hung by its forward end to the under side of the said breech-piece and so as to swing in a vertical plane, a link hung by its rear end upon a stationary pivot in the receiver and, extending forward, hung by a pivot to the said lever between the stationary pivot of the said link and the pivot by which the said lever is hung to the breech-piece, a hammer hung in the said lever, a mainspring for the hammer, also arranged in said lever, the hub of the said lever constructed with a notch V, and a spring U, made fast to said lever and extending to the hub of the link, constructed with a nose W, corresponding to the said notch V in the hub of the lever, with sear and trigger, substantially as described.

4. In a fire-arm in which the barrel opens at the rear into the receiver, the combination therewith of a longitudinally-reciprocating breech-piece arranged in the receiver, a lever hung by its forward end to the under side of the said breech-piece and so as to swing in a vertical plane, the said lever extending downward through the receiver and terminating in a trigger-guard and handle, a link hung by its rear end to a stationary pivot in the receiver and, extending forward, hung to a pivot in said lever between the said stationary pivot and the pivot by which the lever is hung to the breech-piece, said lever constructed with two upwardly-projecting cheeks forming a vertical space between them, a hammer hung upon the pivot which connects the link with the lever, and between the said cheeks a main spring, a sear hung in the said link, and a trigger hung in the lever, substantially as described.

5. In a fire-arm in which the barrel opens into the receiver at the rear, the combination therewith of a longitudinally-reciprocating breech-piece, a lever hung by its forward end to the under side of the breech-piece and so as to swing in a vertical plane, a link hung by its rear end to a stationary pivot in the receiver and, extending forward, hung to the said lever by a pivot between the said stationary pivot and the pivot by which the lever is hung to the breech-piece, the said lever extending through the bottom of the receiver and terminating in a trigger-guard and handle, a hammer, a trigger hung in said lever and, extending downward into the trigger-guard, a dog n, hung at the rear of said trigger-guard, the tail p of the dog projecting downward and constructed with a shoulder r, projecting into the trigger-guard, and the trigger constructed with a corresponding shoulder s, the said shoulders being adapted for engagement when the parts are in the closed position to lock the trigger, substantially as described.

6. In a fire-arm in which the barrel opens into the receiver at the rear, the combination therewith of a longitudinally-reciprocating breech-piece, a lever hung by its forward end to the under side of the breech-piece and so as to swing in a vertical plane, a link hung by its rear end to a stationary pivot in the receiver and, extending forward, hung to the said lever by a pivot between the said stationary pivot and the pivot by which the lever is hung to the breech-piece, the said lever extending through the bottom of the receiver and terminating in a trigger-guard and handle, a hammer, a trigger hung in said lever and extending downward into the trigger-guard, the dog n, hung at the rear of said trigger-guard, the tail of the dog extending downward, the dog extending upward into the receiver when in the closed position and constructed with a lateral projection x, the receiver constructed with a corresponding recess y, with which said projection of the dog is adapted to engage, substantially as and for the purpose described.

7. In a magazine fire-arm in which the magazine is arranged below the barrel and both the barrel and magazine open into the receiver at the rear, the receiver constructed with a vertical recess directly in rear of the barrel, the said recess being in the form of an arc of a circle the center of which is forward of said recess, the combination therewith of a longitudinally-reciprocating breech-piece arranged in the receiver in rear of said opening in the receiver, but projecting forward, so that in its forward position it will close the rear end of the barrel, mechanism, substantially such as described, for imparting reciprocating movement to the said breech-piece, a carrier of segment shape corresponding to the said recess in the receiver and adapted to move up and down therein, traveling in a segmental path, mechanism, substantially such as described, to impart to said carrier an up-and-down reciprocating movement, the carrier constructed with a cartridge-chamber radially through it from front to rear, the said recess being adapted to come into line with the barrel and forward of the front face of the breech-piece when in the raised position, but so that in the down position of the carrier the forward end of said chamber will open to the magazine, while the said chamber, because of the curved path of movement of the carrier, will be brought into a downward and rearwardly-inclined position with relation to the said magazine, the receiver constructed with a chute in rear of said carrier and corresponding with the rear end of the said chamber when in the down position, substantially as described.

8. In a magazine fire-arm in which the magazine is arranged below the barrel and both the barrel and magazine opening into the receiver at the rear, and in which the carrier is arranged to move up and down in a recess in the receiver for the transfer of a cartridge from a magazine to the barrel, the combination therewith of a removable plug 20, arranged in the forward end of the said carrier-recess and having an opening through it

corresponding to the magazine and so as to form a continuation thereof, the carrier constructed with a cartridge-chamber which in the down position corresponds to the said opening through the plug, and the carrier also constructed with a vertical recess at its forward end to adapt it to pass up and down over said plug, substantially as described.

9. In a magazine fire-arm in which the magazine is arranged below the barrel and both the barrel and magazine open into the receiver at the rear, a recess in the receiver in rear of the barrel and magazine, the said recess being of segment shape, the center of which is forward, a carrier of corresponding segment shape arranged in said recess and so as to move up and down therein in the vertical path defined by the segment shape of the recess, the carrier constructed with a cartridge-chamber longitudinally through it, but in a radial line, and so that when the said chamber is in the raised position it will come into line with the barrel, a longitudinally-reciprocating breech-piece arranged in the receiver in rear of the barrel and adapted to pass through the said cartridge-chamber in the carrier when in the raised position, the carrier constructed with an opening from the cartridge-chamber therein upward, but less in width than the diameter of the cartridge-chamber, the forward end of the breech-piece reduced in width to correspond to the said opening in the carrier, a lever hung by its forward end to the under side of the breech-piece and so as to swing in a vertical plane, a link hung upon a stationary pivot at the rear and, extending forward, hung by its forward end to a pivot in the lever between the said stationary pivot and the pivot by which the lever is hung to the breech-piece, a hammer hung upon the pivot which connects the said lever and link, a trigger hung in said lever, a sear hung on said link between the hub of the hammer and the trigger, a carrier-lever hung by its rear end in the receiver below the breech-piece, extending forward, its forward end entering a corresponding recess formed in the carrier to receive it, the said carrier-lever adapted to swing up and down and constructed with a shoulder near its hub adapted to engage a corresponding point on the rear moving breech-piece, so as to impart the upward movement to the carrier-lever and carrier, and constructed with a similar shoulder forward adapted to be engaged in the forward movement of the breech-piece to return the said carrier with its lever as the breech-piece approaches its extreme forward position, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WILLIAM MASON.

Witnesses:

DANIEL H. VEADER,

A. W. EARLE.