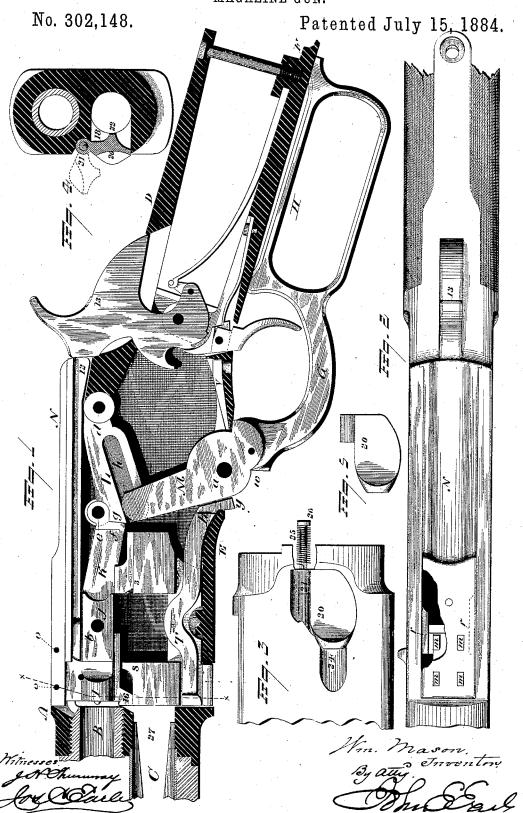
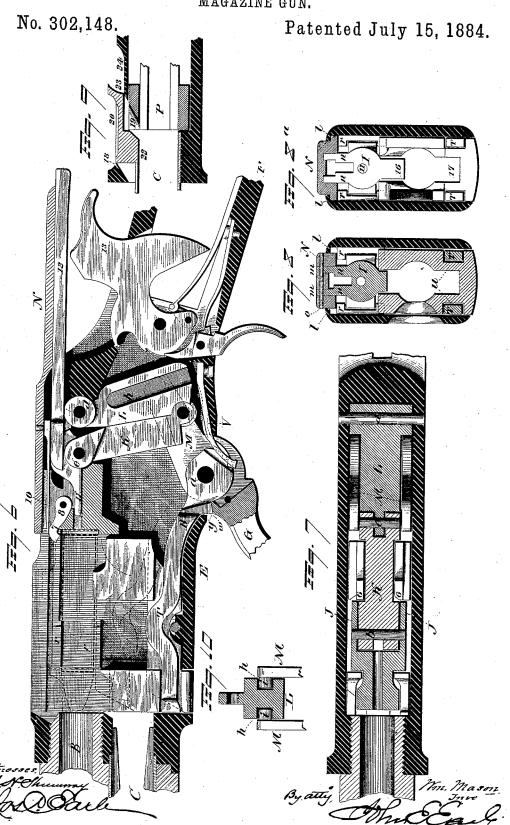
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MAGAZINE GUN.



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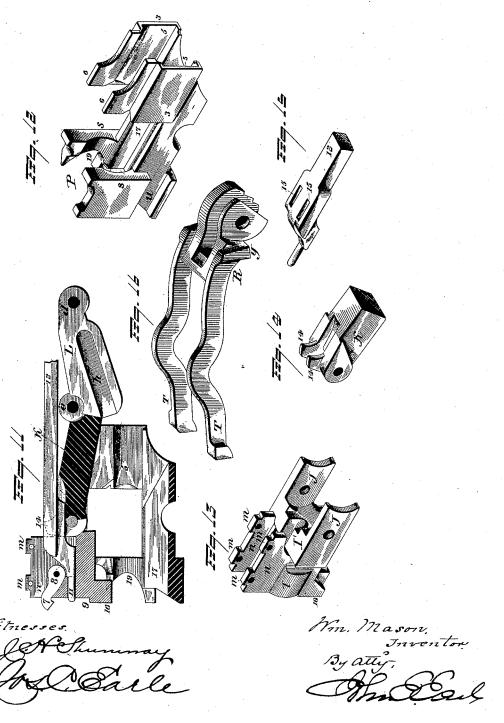
MAGAZINE GUN.



W. MASON. MAGAZINE GUN.

No. 302,148.

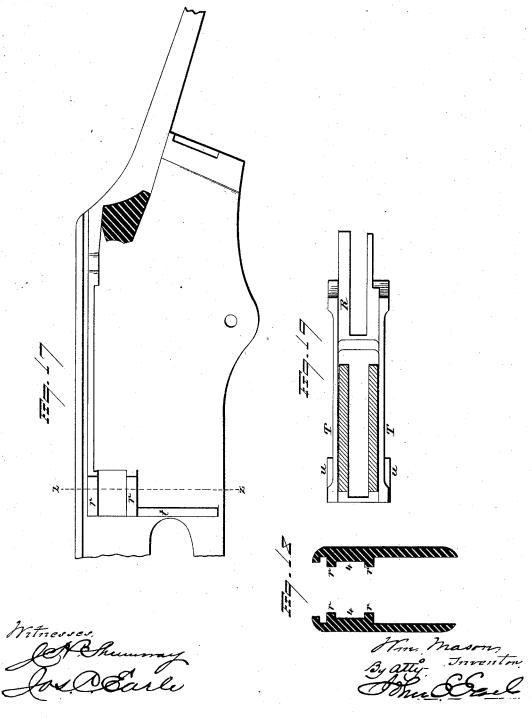
Patented July 15, 1884.



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MAGAZINE GUN.

No. 302,148.

Patented July 15, 1884.



UNITED STATES PATENT OFFICE.

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

MAGAZINE-GUN.

SPECIFICATION forming part of Letters Patent No. 302,148, dated July 15, 1884.

Application filed January 11, 1883. (No model.)

To all whom it may concern:

Be it known that I, WM. MASON, of New Haven, in the county of New Haven and State of Connecticut, have invented new Improve-5 ments 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, 10 and which said drawings constitute part of this specification, and represent, in-

Figure 1, a sectional side view, so much of the frame being cut away as to show the mechanism of the arm in its normal condition; Fig. 15 2, a top view, a small portion cut away to show the supporting-guides for the breechpiece; Fig. 3, a partial side view of the receiver, showing the construction for charging the magazine; Fig. 4, a transverse section 20 through the charging opening; Fig. 5, the cover for the charging-opening detached; Fig. 6, a sectional side view showing the mechanism of the arm in the position of the withdrawn breech-piece and just as the receiver is to begin its ascent; Fig. 7, a longitudinal central section in the line of the bore of the barrel; Fig. 8, a transverse section on line x xof Fig. 1; Fig. 8a, a transverse-section directly in front of the carrier; Fig. 9, a horizontal 30 section of the front part of the receiver through the charging opening; Fig. 10, a transverse section of the link L, showing its connections with the arms which move it; Fig. 11, a partial longitudinal central section through the 35 breech-piece and carrier; Figs. 12, 13, 14, 15, and 16, detached parts; Fig. 17, an inside view of the receiver with the mechanism removed; Fig. 18, a vertical central section of the same on line z z; Fig. 19, a longitudinal section of 40 the receiver directly above the lever which

This invention relates to an improvement in magazine fire-arms, with special reference to the arm known as the "Winchester Repeat-45 ing Arm," and in which a longitudinallyguided breech-piece is operated by the trigger-guard lever through a link or toggle connection, and the carrier arranged to be moved vertically up and down by the action of the 50 trigger-guard lever to transfer a cartridge received from the magazine to a position in rear I ends of the two parts are hinged to each other

of the bore of the barrel and forward of the open breech-piece, and so that as the breechpiece is closed it will pass through the carrier and force the cartridge from the carrier into 55 the barrel, the carrier then descending by the last part of the closing movement of the trigger-guard lever.

Heretofore this arm has been constructed for the use of the shorter classes of cartridges. 60

The object of my invention is to adapt the arm to employ the longer class of cartridgessuch, for instance, as United States forty-fives to seventies—without departing from the approved principles of the arm as heretofore 65 constructed; and the invention consists in the construction and arrangement of the parts, as fully hereinafter described, and more particularly recited in the claims.

A represents the frame or receiver, con- 70 structed at its forward end for the attachment of the barrel B; C, the magazine below it. At the rear the receiver is extended to form the upper tang, D. Instead of making the receiver with side plates, as in the usual con- 75 struction, I make the sides close and provide a removable bottom or trigger-guard plate, E, which extends rearward and forms the under tang, F, and extends forward, leaving only a narrow space open at the front end of the re- 80 ceiver, as seen in Fig. 1.

G is the trigger-guard lever hung upon a pivot, a, and extending to the rear to form a handle, H.

I is the breech-piece. (Shown detached in 85 perspective, Fig. 13.) Its forward face corresponds in shape substantially to the bore of the barrel. At its rear end is a cross-head, I', which projects rearward, and is recessed at its rear end to form ears J J. The outer sur- 90 faces of this cross-head are parallel and run in guides to govern the longitudinal movement of the breech-piece, as hereinafter described. Between the two ears the forward end of one part of the toggle-joint is hinged 95 upon a pintle, b, extending through the ears and the part K, as seen in Fig. 7. The other part, L, of the joint is hinged at the rear end of the receiver, upon a pintle, d, which extends through the sides of the receiver, and through 100 the part L, as also seen in Fig. 7. The other

by a pintle, e, as seen in Fig. 7. Upon these pintles the toggles work freely in being turned from the position seen in Fig. 1 to that seen in Fig. 6 and return. Below the pintle e the two parts K L of the toggle are constructed with shoulders respectively, f g, and which, when the breech-piece is in its most forward position, come together, as seen in Fig. 1, and at that time the hinging points or pintles b, d, and e to are all in line, and substantially in the horizontal axial plane of the breech-piece, which is the strongest position of support.

In each side of the rear part or link, L, of the toggle is a groove, h. (See Fig. 10.) From 15 the hub of the trigger-guard lever G a pair of arms, M, extend upward—one each side of the

arms, M, extend upward—one each side of the part L—as also seen in Figs. 7 and 10. On the inner surface of each of these arms M is a stud, i, which enters and works in the grooves to hof the part L, so that by throwing the lever G from the position seen in Fig. 1 to that seen in Fig. 6 the meeting ends of the two links are drawn downward, imparting to the breech-piece a rear longitudinal movement, and into the position seen in Fig. 6. Then, in returning the trigger-guard lever, the links are thrown up into their extended position, as seen in Fig. 1, carrying with them the breech-piece into the closed position, and in that closed position the studs i on the arms M

stand in substantially a direct line drawn from the pintle e to the pivot a, or a little forward of that line, and so as to firmly hold the breechpiece in its closed position.

The opening in the top of the receiver is provided with a cover, M, arranged to slide longitudinally in grooves *l* on the inner sides of the receiver, as seen in Fig. 8. At its forward end this slide is connected to the breech-piece by tenons *m m* on the flanges *n*, which project upward from the breech-piece at its forward end. These tenons pass through corresponding mortises in the cover, as seen in Figs. 2 and 8, and transversely through the

secure the cover and breech-piece together. In the arm as heretofore constructed for shorter cartridges the breech-piece has been supported entirely by the frame in rear of the 50 recess in which the carrier moves, and for such shorter cartridges this support is sufficient; but for longer shells some additional support near the head of the cartridge is desirable; but such support cannot be throughout the length 55 of the movement of the breech-piece—that is, the length of the space through which the carrier is to move—because the chamber in the carrier which receives the cartridge from the magazine is wider than the opening in the car-60 rier above. It will be remembered that the carrier is raised after the breech-piece has been drawn to the rear, and that the breech-piece passes forward through the chamber in the carrier. Then, after the breech-piece has reached

65 its extreme forward movement, the carrier is thrown down; hence it is that the carrier must

be open from the chamber which receives the

cartridge upward, in order to permit it to be thrown down after the breech-piece has passed. through the chamber, and this opening must 70 be narrower than the chamber, first, to prevent the accidental displacement of the cartridge in the carrier; and, second, that the carrier as it ascends may strike the shell which was withdrawn by the retreat of the breech- 75 piece and eject it from the barrel. It will be readily seen that if the breech-piece were guided and supported through the whole length of the recess in which the carrier moves the carrier could not rise into its position in front of 80 the breech-piece and permit the breech-piece to pass forward through the chamber in the carrier. The support for the breech-piece must therefore be shorter than the length of the carrier and within the two extremes of the re- 85 cess in which the carrier moves. It is for this purpose that the cross-head I' is arranged a little distance back from the forward end of

the breech-piece.

On each of the inner sides of the receiver 50 longitudinal ribs r are provided, extending forward only to the forward end of the crosshead when the breech-piece is in its closed position, as seen in Figs. 2, 8, and 17, and rearward only to about the same extent, or 95 somewhat less than the length of the ears or cross-head. Between these ribs rr the crosshead stands when the breech-piece is in its most forward position and moves freely therein, and so that when the breech-piece is drawn 100 to the rear the cross head passes entirely from and to the rear of these guides r r, so as to leave a space between the front end of the breech-piece and the guides, as seen in Fig. Then, when the breech piece is returned, 105 the cross-head enters between the guides r ras it approaches its closing position. The links are of the required length to move the breech-piece rearward a little more than the extreme length of the cartridge to be em- 110 ployed, substantially as they do in the Winchester arm, and as to the position seen in Fig. 6, and in that position the grooves h in the link L, in which the studs on the arms M of the trigger-guard lever work, are in such 115 relation to the pivot a, on which the triggerguard lever turns, that after the links have reached their extreme rear movement the lever may be turned a little farther forward without effect upon the links—that is to say, the 120 grooves stand at that time very nearly at a tangent from the arc described by the studs on the arms M, and for the purpose of throwing up the carrier after the breech-piece has been withdrawn and then, when the breech- 125 piece is closed, as seen in Fig. 1, the grooves \bar{h} in the link L assume a tangential position to the studs on the arms M, so that after the breech-piece is closed an over motion of the trigger-guard lever is permitted to throw down 130 the carrier, substantially as in the Winchester

The carrier P (shown detached in perspective, Fig. 12) corresponds in length substan-

tially to the extreme length of the cartridge to be used in the arm, its front or forward face at substantially right angles to the axis of the barrel, and so as to work against the forward 5 face of the cavity in the receiver. The sides of the carrier are recessed, the recesses beginning at a distance from the forward face of the carrier corresponding to the forward end of the guides r in the receiver, and so as to 10 form vertical shoulders s, parallel with the forward face of the carrier; and on the inner sides of the receiver is a vertical rib, t, distant from the front face of the cavity in the receiver corresponding to the distance from the front 15 face of the carrier to the shoulders. The front end of the cavity in the receiver and the rib t therefore form guides between which the forward part of the carrier will run, and guide the carrier in its vertical movement. These 20 guides are so near together that the carrier is not liable to be cramped in its vertical movement, as would be the case in so long a carrier were it guided by its extreme forward and rear ends, as in the usual construction.

Near the lower edge of the receiver, at the forward end and on each side, is a longitudinal groove, u, forming seats for the carrier-lever (This lever is shown detached in Fig. 17.) It is hung upon the same pivot, a, which carries 30 the trigger-guard lever, substantially as in the Winchester arm, but in this case it is constructed with two arms, T T-one extending each side of the carrier—their forward end resting in the grooves u u of the carrier, as 35 seen in Fig. 1. The lower part of the carrier in rear of the groove u is contracted, as seen in Fig. 12, to stand between the two arms of the lever, as seen in Fig. 1. On the hub of the trigger-guard lever is a shoulder, w, and 40 on the link K is a corresponding shoulder, y, which the shoulder w on the guard-lever will strike as the lever approaches its extreme forward movement, and after the breech-piece has been withdrawn to its extreme movement, 45 and so that during the completion of the forward movement of the guard-lever, and after the shoulders wy have come together, the carrier-lever will be turned to the position seen in broken lines, Fig. 6, and raise the carrier to 50 its up position, as seen in that figure. The rear portion of the carrier is of the full width of the recess in the receiver, as seen at 33, Fig. 12. The space between this rear part, 3, and the shoulder s corresponds substantially 55 to the length of the cross-head, including the ears J. The cavity in the receiver in which the carrier moves is greater than the width of the cross-head, as seen in Fig. 18, 44 representing the cheeks between the guides rr, and 60 which correspond to the sides or ears of the cross-head. This rear portion, 3, of the carrier is constructed with a groove, 5, each side, which, when the carrier is in its up position, corresponds to the space between the guides

65 r r, and so that they practically form a con-

tinuation of those guides r r; hence when the

in moving forward passes through the recesses 5 in the rear part of the carrier into the position between the shoulders s and the said rear 70 parts, as seen in Fig. 1, thus permitting the breech-piece to engage with the guides rr before the carrier begins its descent. Above the recesses 5 in the rear part of the carrier the opening in the top of the carrier is con- 75 tracted, and is provided with a flange, 6, at each side, the space between these two flanges 6 6 being narrower than the cartridge or the chamber in the receiver. The body of the forward link, K, is made of a width (see Fig. 7) 80 to permit these flanges to pass down after the breech-piece is closed.

The cartridge enters the carrier from the magazine in the usual manner, and is transferred by the rising of the carrier to a position 85 in rear, and in line with the barrel, and forward of the breech-piece. Then, as the breechpiece is closed, it moves forward through the carrier, forcing the cartridge from the carrier into the barrel, the cross head of the breech- 90 piece passing through the recesses 5 in the rear part of the carrier to its position between its guides r r in the receiver. Then, when the breech piece has arrived at its closed position, the carrier is moved down to its position to 95 receive a new cartridge, as in the Winchester arm. Then, after firing, the breech-piece is again drawn back. The extractor 7, hung to the breech-piece upon the pivot 8, engages the rim of the exploded shell, or a cartridge, if it 100 be not exploded, draws that shell rearward and over the carrier, as indicated in broken lines, Fig. 6, the extractor-hook 7 holding the cartridge upon a shoulder, 9, on the breechpiece, substantially as it does in the Winches- 105 ter arm. Then, as the carrier rises, the flanges 6 thereon strike the under side of the shell near the head, causing its front end to turn upward, escape from the shoulder 9 below, and under the pressure of the extractor spring 110 10 the shell is caused to fly from the arm, as it does in the Winchester arm.

The firing-pin 11 stands centrally in the breech-piece; but instead of extending directly backward and in axial line with the barrel, 115 as in the Winchester arm, its tail 12 is elevated above the axial line, and so as to clear the links, as seen in Fig. 11, and extends backward to the hammer 13, as seen in Fig. 1, and so that as the breech-piece is thrown rearward 120 the tail of the firing-pin will force the hammer to full-cock, as seen in Fig. 6, and then pass on to its extreme rear position over the hammer, as also seen in Fig. 6, leaving the hammer at full-cock, and when returned, as 125 seen in Fig. 1, will be in position to receive the blow of the hammer, and impart its force to the primer of the cartridge, as in the Winchester arm. To withdraw the firing-pin, and also prevent its forcible contact with the prim- 130 er when the breech piece is closed, the forward link, K, is provided with one or more prongs, 14, (see Fig. 14,) and the firing-pin carrier is in its up position the breech-piece with corresponding mortises, 15, (see Fig. 15,)

in which the prongs 14 of the link work. (See broken lines, Fig. 11.) These mortises are of sufficient length to permit the firing-pin to be thrown forward, as seen in Fig. 11, so that it 5 may project through the breech-piece to impart the blow of the hammer to the primer. When the trigger-guard is turned to withdraw the breech piece, as the link K turns, the prong 14 strikes the rear of the mortise 15 10 in the firing-pin, and throws the firing-pin backward, as seen in Fig. 6, drawing the firing-pin point within the breech-piece and there holding it, because the prongs do not pass out of the mortises 15 in the firing-pin; hence when the breech-piece is returned the firing-pin is held back until the breech-piece is nearly closed. Then the prongs pass forward in the mortises, leaving the firing-pin back away from the primer until it shall be forcibly 20 driven against the primer by the fall of the hammer.

On the under side of the breech-piece is a downward projection, 16, which, when the breech-piece is in its extreme forward position, as seen in Figs. 1 and 8a, overlaps the mouth of the magazine, and thus will serve as a stop to retain the cartridge in the magazine, and when the breech piece is drawn to the rear the rear cartridge in the magazine follows 30 this downward projection 16 under the force of the magazine-spring until the cartridge has passed into the carrier, so that the cartridge then in the carrier serves as a stop for the next cartridge until the carrier begins its ascent. 35 Then the carrier itself holds the column of cartridges in the magazine until the breech-piece is brought again to its closed position. When the projection 16 again comes to its position, it serves as a stop for the column of cartridges. Then the carrier may be dropped. In the lower part of the carrier a longitudinal groove, 17, is made, through which this projection 16 passes in the forward movement of the breech-

The usual spring, m V, to act upon the triggerguard lever and upon the carrier-lever, is arranged to hold the said levers in their extreme positions, substantially the same as in the

Winchester arm.

To charge the magazine while the parts are in their normal condition, an opening, 18, is made through the side of the frame near its forward end, at one side and in line with the magazine, as seen in Figs. 3, 4, and 9, and which opening extends a little to the rear of the front face of the carrier, as seen in Fig. 9. Through this opening the cartridge may be introduced directly to the magazine, and as each is introduced its head passes forward of 65. the projection or stop 16 on the breech-piece; but, in order to make a clear passage into the magazine through this opening, it is necessary to cut away a portion of the carrier on that side, as at 19, Figs. 9, 11, and 12. To close this opening a cover, 20, is provided. (Shown detached in Fig. 5.) This cover is hinged to

axis of the hinge on a line parallel with the receiver, and so as to turn outward and upward in opening, as seen in Fig. 4. On the 70 inside of the cover is a longitudinal projection, 22, which comes into line with the inner surface of the magazine when the cover is closed, as seen in Figs. 4 and 9, and serves to prevent the cartridge-head from turning out 75 of its path in its passage from the magazine to the carrier. The rear end of this cover is recessed upon its under side, as at 23, (see Fig. 9,) and in the surface of the receiver in rear of and extending into the opening is a recess, 80 24, (see Figs. 3 and 9,) which serves as a guide for the point of the cartridge, so that by introducing the point of the cartridge into the recess 24 and beneath the rear end of the cover the cover will be thrown outward, as 85 seen in broken lines, Fig. 4, and permit the cartridge to pass inward. Then, when the cartridge has been so introduced, a helical spring, 25, or other suitable spring, will serve to return and close the cover and hold it in 90 its closed condition, the spring yielding as the cartridge is introduced, as before described. This helical spring 25, as here arranged, has one end fixed to the stationary pintle of the hinge and the other to the frame, as seen in 95 Fig. 3—an arrangement of spring well known.

The side of the magazine next the opening is cut away, as seen at 27, to correspond to and form a continuation of the opening 18

into the magazine.

I have represented the breech-piece as attached to the cover, so that after the breechpiece has passed to the rear beyond the guides r r it will be retained in its proper alignment by the said cover; but this alignment may be 105 otherwise produced—as, for instance, the tail of the firing-pin may work in guides in the receiver and serve as the support for the breech-piece—say as in the Winchester arm; or, for another illustration, the length of the 110 cross-head and its guides may be longer than the rear part of the carrier, and then guides on each side the receiver, in rear of the rear end of the carrier, in line with the guides r r, and between which the rear end of the cross- 115 head will enter before it passes from the guides r r, it only being essential that there shall be some device to guide and support the breechpiece after it shall have passed to the rear from the guides r r, and to insure its proper 120 return into the guides.

I have not described the lock mechanism which is shown in the drawings, as it is too well known to require particular description in this specification.

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I claim-

1. In a magazine fire-arm substantially such as described, the combination of the longitudinally-movable breech-piece constructed with a cross-head extending toward each side of 130 the receiver, the said receiver constructed with guides between which the said crosshead will stand when the breech-piece is in the receiver at its upper edge, as at 21, the lits most forward position, the forward end of

the cross-head and the forward end of the in the carrier will permit it to pass the said guides in rear of the front face of the breechpiece, and the rear end of said cross-head and guides forward of the rear end of the carrier, a guide for the breech-piece independent of said cross-head guides after the breech-piece shall have moved rearward to take the crosshead from its guides, with the carrier constructed with recesses upon its side corre-10 sponding to said cross-head and guides, and mechanism, substantially such as described, to impart a longitudinal movement to the breech-piece and vertical movement of the carrier, whereby the said recesses in the car-15 rier will permit it to pass the said guides in rising and escape the said cross-head in its

descent, substantially as specified. 2. In a magazine fire-arm substantially such as described, the combination of the longitudi-20 nally-movable breech-piece constructed with a cross-head extending toward each side of the receiver, the said receiver constructed with guides between which the said cross-head will stand when the breech-piece is in its most for-25 ward position, the forward end of the crosshead and the forward end of the guides in rear of the front face of the breech piece, and the rear end of said cross-head and guides forward of the rear end of the carrier, a guide for the 30 breech-piece independent of said cross-head guides after the breech-piece shall have moved rearward to take the cross-head from its guides, with the carrier constructed with recesses upon its side corresponding to said cross-head and guides, and mechanism, substantially such as described, to impart a longitudinal movement to the breech-piece and vertical movement to the carrier, whereby the said recesses in the carrier will permit it to pass the said guides 40 in rising and escape the said cross-head in its descent, the rear end of the carrier constructed with a recess upon each side corresponding to

the said cross-head when the carrier is in its

up position, and through which the said cross-

45 head will pass in the closing movement of the

breech-piece, substantially as described. 3. In a magazine fire arm substantially such as described, the combination of the longitudinally-movable breech-piece constructed with 50 a cross-head extending toward each side of the receiver, the said receiver constructed with guides between which the said cross-head will stand when the breech-piece is in its most forward position, the forward end of the cross-55 head and the forward end of the guides in rear of the front face of the breech-piece, and the rear end of said cross-head and guides forward of the rear end of the carrier, a guide for the breech-piece independent of said cross-head 60 guides after the breech-piece shall have moved rearward to take the cross-head from its guides, with the carrier constructed with recesses upon its side corresponding to said cross-head and guides, and mechanism, substantially such 65 as described, to impart a longitudinal movement to the breech-piece and vertical movement to the carrier, whereby the said recesses

guides in rising and escape the said crosshead in its descent, the receiver constructed 70 with a vertical guide near the forward end of the recess in the receiver, and the carrier with corresponding shoulders, whereby the receiver will be guided in its vertical movement, substantially as described.

4. In a magazine fire-arm substantially such as described, the combination of the longitudinally-movable breech-piece constructed with a cross-head extending toward each side of the receiver, the said receiver constructed with 80 guides between which the said cross-head will stand when the breech-piece is in its most forward position, the forward end of the crosshead and the forward end of the guides in rear of the front face of the breech-piece, and the 85 rear end of said cross-head and guides forward of the rear end of the carrier, aslide arranged in guides as a cover for the opening in the receiver, said breech-piece attached to the forward end of said cover, with the carrier constructed 90 with recesses upon its side corresponding substantially to said cross-head and guides, and mechanism, substantially such as described, to impart a longitudinal movement to the breech-piece and vertical movement to the 95 carrier, whereby the said recesses in the carrier will permit it to pass the said guides in rising and escape the said cross-head in its descent, substantially as described.

5. In a magazine fire arm substantially such 100 as described, the combination of a longitudinally-movable breech-piece, a vertically-movable carrier, mechanism, substantially such as described, in connection with the trigger-guard lever, to impart reciprocating movement to the breech-piece, the lever R, hung upon the same pivot as the trigger-guard lever, its two arms T extending, respectively, each side the carrier, and the carrier constructed with longitudinal recesses, within IIO which the forward ends of said arms will work, the said lever constructed to engage with the trigger-guard lever in its two extreme move-

ments, substantially as described. 6. In a magazine fire-arm substantially such 115 as described, the combination of the longitudinally-movable breech-piece and mechanism, substantially such as described, for imparting longitudinal movement thereto, a carrier arranged in the receiver for vertical move- 120 ment, said receiver constructed with a guide, and the carrier with a corresponding shoulder near its front end, a lever hung in the receiver below the breech-piece in rear of the carrier, and extending forward into connection with 125 the carrier, and mechanism, substantially such as described, to impart to said lever an up-anddown vibratory movement, and a corresponding up-and-down vertical movement to the carrier, substantially as described.

7. The combination of the longitudinallymovable breech-piece, the two links K L, the one hinged to the breech-piece, the other to the frame, and the two together to form a tog-

gle, the trigger-guard lever in connection with the one part, L, of the toggle, whereby longitudinal reciprocating movement is imparted to the breech-piece, the firing-pin 11, extending axially through the breech-piece, its tail 12 raised above the axial line of the breech-piece, so as to pass over said links, the forward link, K, constructed with prong or prongs 14, and the firing-pin with corresponding mortises, 15, in which the said prongs work to retract the firing-pin, substantially as described.

8. In a magazine fire-arm substantially such as described, the opening for charging the mag15 azine in the side of the receiver, substantially forward of the carrier, with a cover hinged upon an axis parallel with the axis of the magazine, and so as to swing outward and up-

ward in opening, and the receiver constructed with a recess in rear of the cover, and so as to 20 permit the point of the bullet to enter beneath said cover, substantially as described.

9. In a magazine fire-arm substantially such as described, the opening for charging the magazine in the side of the receiver, substantially forward of the carrier, with a cover hinged upon an axis parallel with the axis of the magazine, and so as to swing outward and upward in opening, the cover provided with an inward projection, 22, extending into line 30 with the inner surface of the magazine, substantially as and for the purpose described.

WILLIAM MASON.

Witnesses:

DANIEL H. VEADER, L. H. DANIELS.