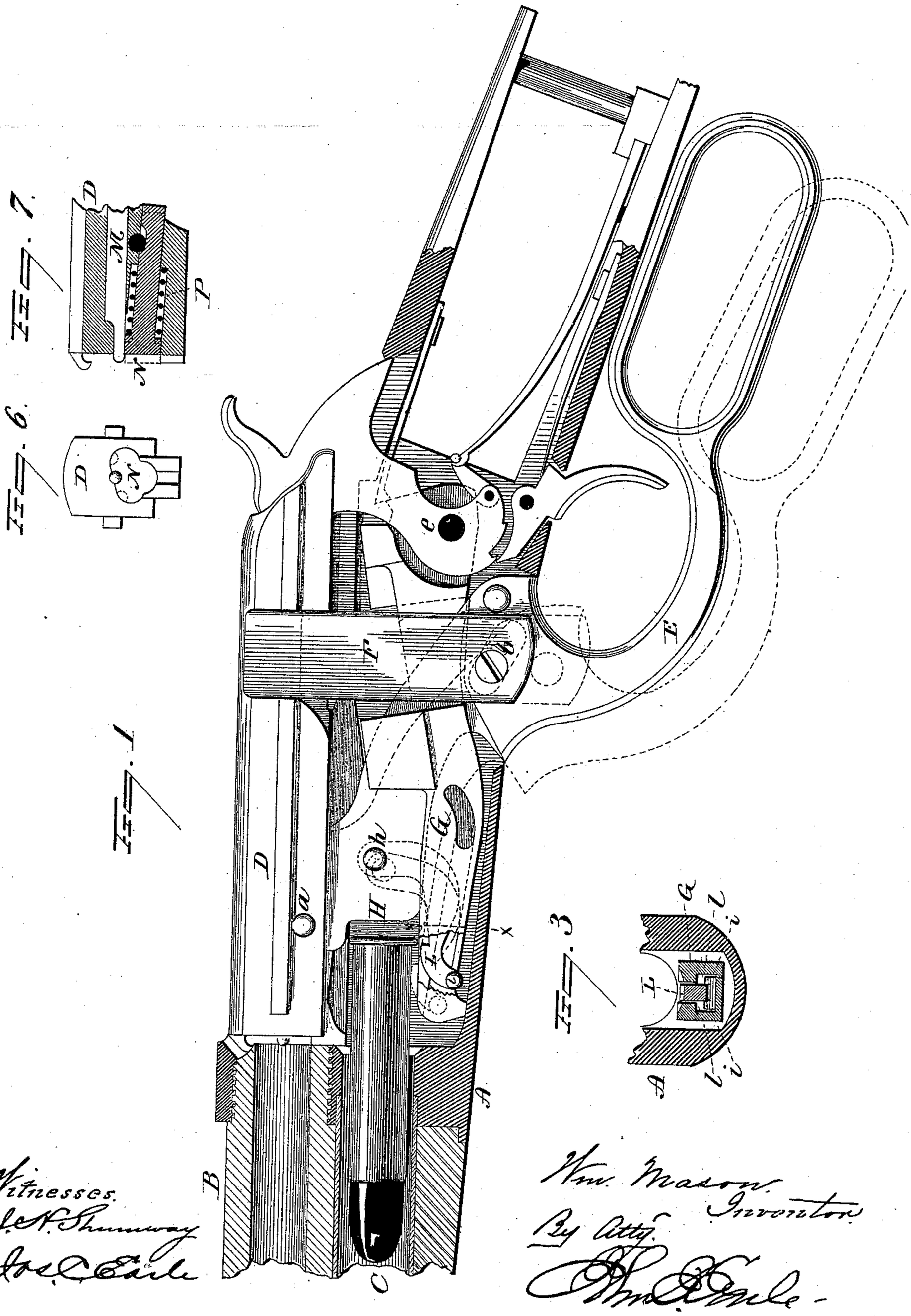
(No Model.)

2 Sheets—Sheet 1.

W. MASON.

MAGAZINE FIRE ARM.

No. 311,079. Patented Jan. 20, 1885.



Witnesses.
J. F. Shumway
Jos. C. Earle

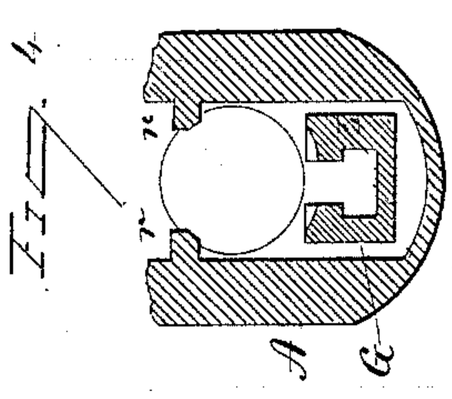
Wm. Mason. Inventor
By Atty.
Wm. C. Earle

(No Model.) 2 Sheets—Sheet 2.

W. MASON.

MAGAZINE FIRE ARM.

No. 311,079. Patented Jan. 20, 1885.



Witnesses.
J. C. Shumway.
Louis C. Earle

Wm. Mason, Inventor
By atty Wm. C. Earle

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. 311,079, dated January 20, 1885.

Application filed November 24, 1884. (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 sectional side view of the arm, showing the parts in their closed condition, broken lines indicating the first part of the opening movement; Fig. 2, a partial sectional side view showing the parts in position just before the carrier begins to rise, the completed movement of the parts to raise the carrier indicated in broken lines; Fig. 3, a transverse section through the lower part of the receiver and carrier on line *x x*, looking forward; Fig. 4, a transverse section through the receiver on line *z z*, Fig. 2, showing the guards on the inner sides of the receiver to prevent the rise of the cartridge; Fig. 5, a modification; Fig. 6, a front view of the breech-piece, showing the improved ejector; Fig. 7, a longitudinal section of the same.

This invention relates to an improvement in that class of magazine fire-arms in which the breech-piece is arranged for longitudinal movement toward and from the rear end of the barrel, and the carrier hung at the rear to swing up and down to transfer the cartridge from the magazine to a position in front of the open breech-piece.

In the more general construction of this class of arms the spring in the magazine is relied upon to force the rearmost cartridge into its position on the carrier; but if the spring fail to do this, then the cartridge will stand partly in the magazine and partly on the carrier, and clog the operation of the arm until the cartridge be brought rearward onto the carrier by some jarring operation.

The object of the first part of my invention is to overcome this difficulty; and it consists in combining with the lever by which the breech-piece is operated and the carrier a hook-like latch, which in the opening movement of the lever will engage the flange of the cartridge and draw it onto the carrier irrespective of the action of the spring in the magazine.

In the use of this class of arms a second difficulty arises from the fact that the ejector usually employed turns the nose of the cartridge upward in a vertical plane with the arm, and so that as the shell is released from the extractor-hook it is liable to fall back into the receiver.

To overcome this difficulty is the object of the second part of my invention; and it consists in making the bearing of the ejector on the head of the cartridge-shell higher at one side of the center than upon the opposite side, whereby as the nose of the cartridge is raised the force applied to its rear end turns it to one side of the vertical plane of the arm, so as to throw it from the receiver toward that side, instead of upward in a vertical plane, as in the usual construction.

In illustrating my invention I show a construction of arm substantially that found in Letters Patent granted to the Winchester Repeting Arms Company as assignees of Browning and Browning, No. 306,577, and of which a general description only will be necessary.

A represents the receiver, to the forward end of which the barrel B is applied, and beneath the barrel the magazine-tube C.

D is the breech-piece, arranged in the receiver to move back and forth in an axial line with the barrel.

E is the trigger-guard lever, its upper end hinged to the breech-piece, as at *a*, the lever extending rearward and downward, terminating in a handle-like shape, which forms the trigger-guard. In rear of the pivot *a* a vertical bolt, (or bolts,) F, is arranged, which, when in its closed position, engages a recess in the breech-piece, so as to securely lock the breech-piece in such closed position. In the bolt is a stud, *b*, which enters a slot, *d*, in the lever E, and so that in the first downward movement of the lever, as to the position indicated in broken lines, Fig. 1, the bolt will be drawn downward before the lever will begin to move the breech-piece, and so as to take the bolt from its locking position in the breech-piece and leave the

breech-piece free for rear movement. After such unlocking of the bolt F the lever then turns upon the stud *b* in the bolt as a fulcrum to throw the breech-piece rearward, as seen in Fig. 2.

G is the carrier, hung at the rear upon the pivot *e*, here represented as the same pivot upon which the hammer is hung. Just before the breech-piece reaches its extreme rear position a shoulder, *f*, on the lever engages a corresponding shoulder, *g*, on the carrier, and so that in completing the opening movement of the breech-piece the carrier is raised, as seen in broken lines, Fig. 2, and so as to take the cartridge into its position forward of the front face of the breech-piece. On the return of the lever the breech-piece is first thrown to its closed position, arriving at that position when the lever E reaches the position indicated in broken lines, Fig. 1, and then in the final closing movement of the lever the locking-bolt F will be brought to place, as shown in Fig. 1. In this closing movement the carrier is thrown down into position to receive the next cartridge from the magazine, as seen in Fig. 1. The forward end of the lever forms an abutment, H, for the cartridge as it comes onto the carrier. The carrier G has a longitudinal groove on its upper surface. In this groove an L-shaped lever, L, is arranged, one arm of the lever L turned up, and at the rear hung to the lever E, as at *h*. This lever L is constructed with a trunnion, *i*, upon each side at its forward end, and in each side of the longitudinal recess in the carrier is a groove, *l*, through which the trunnion may pass; but at the forward end the carrier is open downward, as seen in Fig. 2. The lower arm of the lever L rests upon the bottom of the carrier when in the closed or normal condition of the arm, as seen in broken lines, Fig. 1. This lower arm is constructed with a shoulder, *m*, to form the hook on its upper side. When in the closed or normal position, and as seen in Figs. 1 and 3, the nose of the hook is down substantially flush with the upper surface of the carrier. As the lever E is turned forward, as indicated in broken lines, Fig. 1, the first part of its movement throws down the rear arm of the lever L, and as the under side of the lever rests upon the bottom of the groove in the carrier it consequently turns the forward or hooked end upward beneath the cartridge and forward of the flange thereof, as indicated in forward broken lines, Fig. 1, it being understood that the spring of the magazine has been sufficient to throw the cartridge rearward to take the flange of the cartridge in rear of the hook of the lever L thus presented. From this point the upper arm of the lever E moves rearward to carry the breech-piece, and in such movement draws the lever L with it, the trunnions entering the grooves *l* in the carrier, and so as to hold the nose of the hook in the proper relation to the cartridge-head, and so that this movement of the lever L will draw the cartridge rearward onto the carrier and to its extreme rear position, as seen in Fig. 2. When the cartridge is thus delivered upon the carrier, the carrier rises, and in such rising turns the lever L upon its pivot H, the trunnions *i* on the forward end of the lever L being forward of the shoulder *m* in such rising movement of the carrier and the hooked arm of the lever. The shoulder *m* turns downward away from and out of possible contact with the cartridge, so that when the carrier is in its up position, as seen in Fig. 2, the cartridge is free to be moved forward as the breech-piece advances, and without possible contact with the shoulder *m*. As the breech-piece is closed and the carrier returns, the lever L comes again to its normal condition, as indicated in rear broken lines, Fig. 1.

In illustrating this part of the invention I have shown the carrier as constructed in accordance with Letters Patent of my invention, No. 306,630, and in which the rear end of the carrier is raised, so that as the cartridge approaches its extreme rear position it comes beneath the overhanging sides *n* on the carrier, the object of such construction being to prevent the accidental displacement of the cartridge on the carrier; but such peculiar construction of the carrier is not essential to my present invention.

To prevent the possibility of the cartridge escaping from the hook in its rear movement, guards may be provided on the side of the receiver, as indicated at *r*, Figs. 2 and 4, these guards standing parallel with the plane of the bottom of the receiver and projecting inward from each side, but so that the space between them is little more than the width of the body of the cartridges, but narrower than the flange, and so that the flange will ride beneath the guards *r*, and be thereby forced to follow the bottom of the carrier under the draft of the hook until the cartridge approaches its extreme rear position of the receiver. The guards stop short of this rear position, as indicated in Fig. 2, and so that the cartridge, after having passed beyond the ends of the guards, may be raised by the carrier. In this illustration the head of the cartridge passes from the guards beneath the overhanging sides *n* of the carrier, those overhanging sides maintaining engagement with the hook until substantially the rear position of the cartridge is reached.

I have represented the lever L as of L shape, and so that the the lower arm bears upon the bottom of the carrier, and arranged to turn upon that bearing-point in the descent of the lever, to throw the nose of the hook up forward of the flange of the cartridge on the carrier; and while I prefer this construction, the hook-lever may be substantially straight instead of L-shaped, and may be guided solely by the grooves in the carrier, as seen in Fig. 5. In this case the grooves for the trunnions *i* are extended forward of the position of the trunnions when the parts are in their normal condition, and so that as the lever commences its forward movement the trunnions will run

forward in that groove without effect upon the hook; but immediately in rear of this normal position the grooves in the carrier suddenly rise, and so that as the rear movement of the hook commences the trunnions will throw the nose up into a position forward of the flange, and as seen in said Fig. 5. In this case the hook-lever is substantially straight, and is attached to the actuating-lever at a lower point than when made of L shape, as before described. I therefore do not wish to be understood as limiting this part of my invention to any particular shape of the hook-lever.

In Figs. 6 and 7, M represents the firing-pin; N, the ejector, which is arranged beneath the firing-pin and provided with a spring, P, the tendency of which is to throw the ejector outward, as indicated in broken lines, Fig. 7, when it is free to so move. The upper edge of the front face of the ejector is inclined from one side downward—that is, in a line diagonally across the front face of the breech-piece, and so that it will bear upon the cartridge-head in such diagonal line. The broken line, Fig. 6, indicates the head of the cartridge. By such diagonal bearing across the head of the cartridge, when the upper edge of the head is engaged by the extractor-hook, the force of the ejector is first at one side of the center of the head, and such force tends to turn the cartridge toward the opposite or lower edge of the extractor and into a line at an angle to the axis of the breech-piece; and when the force of the ejector is applied to the cartridge on this diagonal line the ejector not only turns up the forward end of the shell, but at the same time turns it to one side and imparts the ejective force in a direction toward that side of the receiver on which is the lowest edge of the ejector. The result of such movement is to throw the shell from the arm at that side, and entirely free from the arm, and so as to prevent its possible return into the receiver.

While I prefer to make the ejector with the upper edge inclined, as described, it may be provided with two bearing-points, as indicated in broken lines on the front face of the ejector in Fig. 6, one each side the center, and one above the other, so that the same inclined bearing with relation to the breech-piece is attained.

I claim—

1. In a magazine fire-arm, the combination of a longitudinally-movable breech-piece, a lever hinged to said breech-piece and extending downward to form the handle below the receiver, and by which the breech-piece may be moved, a carrier beneath the breech-piece, and arranged for vertical movement to transfer the cartridge from the magazine to a position forward of the front face of the open breech-piece, and a lever, L, its rear end hung to the actuating-lever, its other end extending forward in the carrier and guided thereby, the said other or forward end constructed with a shoulder, substantially as described, and whereby in the opening movement of the actuating-lever the said shoulder on the said lever L will be thrown up and forward of the flange of the cartridge, and so as to engage the said flange, and in the continued opening movement of the actuating-lever follow the flange of the cartridge onto the receiver.

2. In a magazine fire-arm, the combination of a longitudinally-movable breech-piece, a lever hinged to said breech-piece and extending downward to form the handle below the receiver, and by which the breech-piece may be moved, a carrier beneath the breech-piece, and arranged for vertical movement to transfer the cartridge from the magazine to a position forward of the front face of the open breech-piece, a lever, L, its rear end hung to the actuating-lever, its other end extending forward in the carrier and guided thereby, the said other or forward end constructed with a hook-like shoulder, and the receiver provided with a guard, *r*, upon its inner side above and substantially parallel with the plane of the bottom of the carrier, substantially as and for the purpose described.

3. In a magazine fire-arm, the combination of a longitudinally-movable breech-piece, a lever hinged to said breech-piece and extending downward to form the handle below the receiver, and by which the breech-piece may be moved, a carrier beneath the breech-piece, and arranged for vertical movement to transfer the cartridge from the magazine to a position forward of the front face of the open breech-piece, and the L-shaped lever L, one arm extending to the rear and upward, hung to the actuating-lever, the other arm extending forward in the carrier and guided thereby, the said other arm constructed at its forward end with a shoulder, substantially as described, and whereby in the first part of the opening movement of the actuating-lever the said shoulder on the lever L will be thrown up and forward of the flange of the cartridge, and so as to engage said flange, and in the continued opening movement of the actuating-lever follow the flange of the cartridge onto the carrier.

4. In a fire-arm, the combination of the longitudinally-movable breech-piece, and the ejector N, extending through the front face of the breech-piece, the upper edge of the ejector constructed to present a bearing-point each side the center, the line of said points being diagonally across the front face of the breech-piece, substantially as described.

WILLIAM MASON.

Witnesses:
DANIEL H. VEADER,
LEE H. DANIELS.