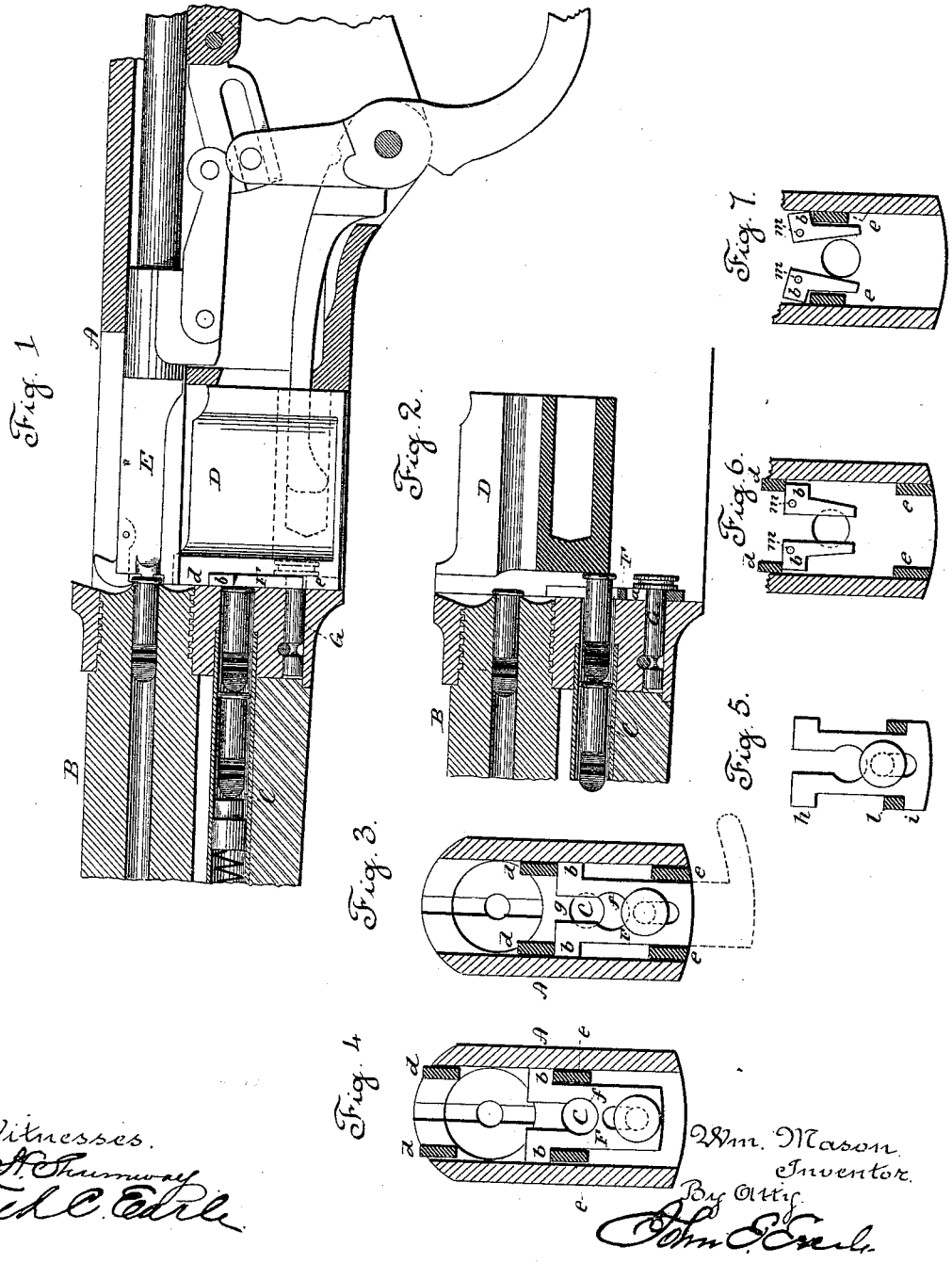
(No Model.)

W. MASON.

MAGAZINE FIRE ARM.

No. 343,470. Patented June 8, 1886.



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MAGAZINE FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 343,470, dated June 8, 1886.

Application filed March 9, 1886. Serial No. 194,585. (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 the 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 so much of an arm as is necessary to illustrated the invention, and showing the carrier in the down position; Fig. 2, the same, showing the carrier in the up position; Fig. 3, a transverse section cutting immediately in rear of the gate and looking forward, showing the position of the gate when the carrier is down; Fig. 4, the same as Fig. 3, showing the position of the gate when the carrier is up; Fig. 5, a modification of the connection between the gate and carrier; Fig. 6, a modification showing the carrier in the down position; Fig. 7, the same modification showing the carrier in the up position.

This invention relates to an improvement in that class of magazine fire-arms in which the magazine is arranged beneath the barrel and opens into a recess in the rear, to permit the cartridge to pass onto the carrier for transfer, and is especially adapted to the system known as the "Winchester," and in which the carrier is a vertically-reciprocating block, but applicable to other systems, and with special reference to arms adapted to use the smaller cartridges, such as 32's and less. This class of cartridges are made of various lengths for the purpose of increasing the charge. The carrier must be adapted to receive the longest cartridge, and if so adapted and shorter cartridges be used without the employment of some device to the contrary, the rearmost cartridge in the magazine will pass onto the carrier and the second will follow it to some extent, and therefore choke or prevent the movement of the carrier.

The object of the invention is to adapt the arm to the use of cartridges of various lengths, from the longest to the shortest, and so that one may be used with the same facility as the others, without any special change or manipulation in the arm; and it consists in a gate arranged to work in the forward end of the carrier-recess, forward of the carrier, and in a plane at substantially right angles to the axis of the magazine, the said gate adapted to partially close or fully open the rear end of the magazine, the said gate and carrier constructed with corresponding shoulders, the shoulders on the gate standing in the path of the said corresponding shoulders on the carrier as the carrier rises and descends, and whereby as the carrier approaches its up position the gate is moved to fully open the magazine and permit the head of the last cartridge to pass rearward beyond the gate. Then as the carrier descends the gate will be brought to its closed position to meet the head of the next cartridge as the first passes into the carrier, and as more fully hereinafter described.

A represents the receiver, B the barrel, C the magazine, B' the carrier-block, and E the breech-piece, of the arm such as known as the "Winchester arm," the carrier being arranged so as to be moved up and down vertically. In the forward end of the carrier-recess a gate, F, is arranged to slide up and down in a plane at right angles to the axis of the magazine and barrel, and forward of the front end of the carrier. As here represented, the gate is supported by a headed pin, G, passing through a slot, *a*, in the gate, with its head bearing upon the rear side. The gate is somewhat narrower than the width of the carrier-opening, and from its sides is a projection, *b*, extending, respectively, to the right and left, and should be so as to bear against the sides of the recess, and with the pin serve as guides for the up and down movement of the gate. On the forward end of the carrier projections *d* are formed, which stand above the projections *b b*, and below similar projections, *e*, are formed, which stand below the projections *b* on the gate, and so that as the carrier works up and down the lower projection, *e*, on the carrier may strike the projections *b* on the gate and cause the gate at the proper time to rise with the carrier, and on the descent at the proper time the projections *d* above strike the projections and force the gate downward, so that the movement of the gate is imparted by the

carrier as it approaches its extreme up or down position. Through the gate is an opening, *f*, which corresponds to the magazine, and is of a diameter sufficiently large to permit the head of the cartridge to pass through it. From the upper side of the opening *f* is a slot, *g*, narrower than the opening *f*, but somewhat wider than the diameter of the body of a cartridge, the position of the opening *f* being such that when the gate is in its up position, as seen in Fig. 4, the opening *f* will be in line with the magazine, but when in the down position the opening *f* will have passed below the magazine, and so as to bring the slot *g* in rear of the magazine, as seen in Fig. 3. The cartridge-opening in the carrier to receive the cartridge comes in line with the magazine only when the carrier is in its down position.

To illustrate the operation of the arm, suppose there be no cartridge on the carrier and the column of cartridges is in the magazine, the head of the rearmost cartridge resting against the forward side of the gate F, as seen in Fig. 1, the carrier raised, as seen in Fig. 2, the projections *e* on the carrier will strike the under side of the projections *b* on the gate, and will raise the gate to the position seen in Fig. 4, so that as the carrier approaches its extreme up position the gate will have been moved to bring the opening *f* into line with the magazine, as seen in Fig. 2. In that position the rearmost cartridge will be forced through the opening *f* until the head comes against the forward surface of the carrier, as seen in Fig. 2, the head being to the rear of the gate. Then as the carrier descends, and before it reaches its down position, the projections *d* on the carrier will strike the upper side of the projections *b* on the gate and will force the gate downward, as seen in Fig. 3, the narrower opening *g* permitting the gate to pass down forward of the flange of the cartridge then standing in the mouth of the magazine, and when the carrier is in its extreme down position, the cartridge so resting against the carrier will be forced into the carrier-opening by the spring in the magazine. Then the head of the next cartridge will come against the forward face of the gate, as seen in Fig. 1, and, its head being broader than the opening *g*, will rest in that position until the carrier is again raised. Then the second cartridge will pass out and in its turn be forced onto the carrier, as before. By this construction it is immaterial what may be the length of the cartridge with relation to the cartridge-chamber in the carrier, and whether the cartridge be short or long its movement onto the carrier is the same, the gate always being presented to stop the next cartridge before the rear cartridge can pass onto the carrier. The projections *d* and *e* form active shoulders by which the carrier acts upon the corresponding projections or shoulders, *b b*, on the gate; and while I prefer the shoulders thus arranged with relation to each other I do not wish to be understood as confining myself to this particular connection between the carrier and gate for their coaction, as it may be otherwise made—as, for illustration, the gate may be constructed with a shoulder, *h*, above and corresponding shoulder, *i*, below, with a projection, *l*, from the carrier between them, as illustrated in Fig. 5.

The gate may be constructed to be operated by hand independent of the carrier—say as by a projection therefrom, indicated in broken lines, Fig. 3. The illustrations which I have made for the operation of the gate will be sufficient to enable those skilled in the art to adapt it to any convenient equivalent mechanism for its movement.

While I prefer to make the gate in the form of a vertical slide, it may be hung in the receiver and adapted to swing in a plane at right angles to the receiver, as seen in Figs. 6 and 7. In this illustration I show two such swinging gates—one at the right and the other to the left of the carrier-opening—each hung upon a pivot, *m*. The gates in their normal position stand so as to partially cover the rear end of the magazine, as seen in Fig. 6, and from each gate is a projection, *b*, corresponding to the like projection on the slide, as before described, and which projection stands between the projections *d e* on the carrier, and so that the shoulders of the one will engage the corresponding shoulder of the other, and so that as the carrier is raised, as seen in Fig. 7, the lower projections or shoulders will strike beneath the projection *b* or shoulder and move the gates away from the magazine, and so as to leave the magazine open for the exit of the rearmost cartridge, and then as the carrier descends the gates move inward against the body of the cartridge, and are forced to that position by the upper shoulders, *d*, as the carrier comes to its down position, as seen in Fig. 6. The space between the two gates is substantially that of the body of the cartridge, and corresponds to the narrower portion of the opening in the gate, as first described.

It will be evident in this modification, as in the first-described gate, that one side only is necessary to partially cover the rear end of the magazine, as that will afford a sufficient stop for the head of the next cartridge. I prefer, however, to construct the gate so as to come upon both sides of the cartridge.

I claim—

1. In a magazine fire-arm in which the magazine is arranged below the barrel, and the carrier arranged to move up and down in the recess in the receiver in rear of the magazine, the combination therewith of a gate between the forward end of the carrier and the forward end of the carrier-recess, and arranged to work in a plane at substantially right angles to the axis of the carrier, and the said gate adapted to partially close or fully open the rear end of the magazine, the said gate and carrier constructed with corresponding shoulders, the shoulders on the gate standing in the

path of the said corresponding shoulders on the carrier as the carrier rises and descends, substantially as described, and whereby under the ascent of the carrier the gate will be moved to uncover the rear end of the magazine, and as the carrier descends the said gate will be moved to partially cover the rear end of the magazine.

2. In a magazine fire-arm in which the magazine is arranged below the barrel, and the carrier arranged to move up and down in the recess in rear of the magazine, the combination therewith of a gate between the forward end of the carrier and the forward end of the carrier-recess, and arranged to move up and down in a plane at substantially right angles to the axis of the carrier, the said gate constructed with an opening through it in diameter somewhat larger than the head of a cartridge, and with an opening therefrom of less diameter than the head of the cartridge, but somewhat larger than the diameter of the body of the cartridge, substantially as described, and whereby under the vertical movement of said gate the larger opening may be brought into line with the carrier to permit the head of the cartridge to pass through it, or the narrower part of the opening brought into line with the magazine forward of the head of a cartridge.

3. In a magazine fire-arm in which the magazine is arranged below the barrel, and the carrier arranged to move up and down in the recess in rear of the magazine, the combination therewith of a gate arranged at the forward end of the carrier-recess, and so as to be moved up and down in a plane at substantially right angles to the axis of the magazine, the carrier constructed with projections adapted to engage corresponding shoulders on the gate, whereby up and down movement may be imparted to said gate through the movement of the carrier, the gate constructed with an opening in diameter somewhat larger than the diameter of the head of a cartridge, and with an opening therefrom of less diameter than the head of the cartridge, but somewhat larger than the body of the cartridge, substantially as and for the purpose described.

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