(No Model.)

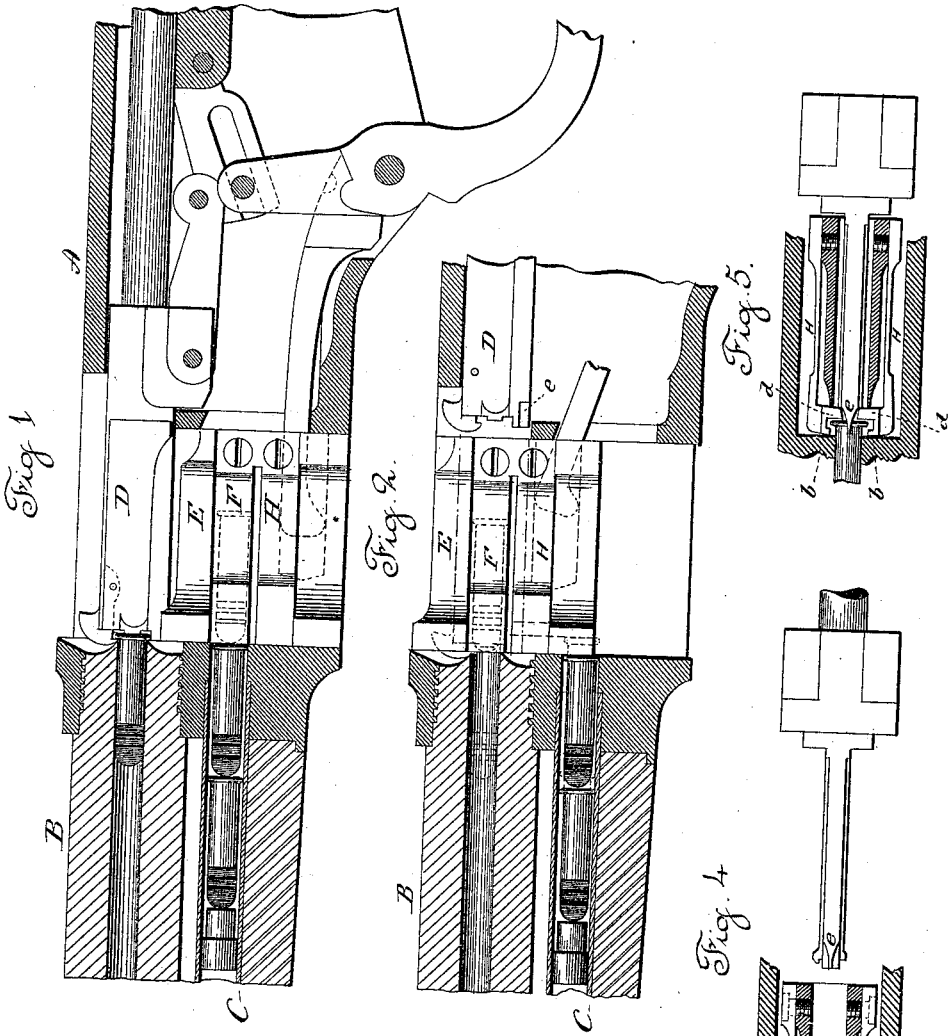
2 Sheets—Sheet 1.

T. G. BENNETT.

MAGAZINE FIRE ARM.

No. 343,423.

Patented June 8, 1886.



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(No Model.)

2 Sheets—Sheet 2.

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Fig. 6.

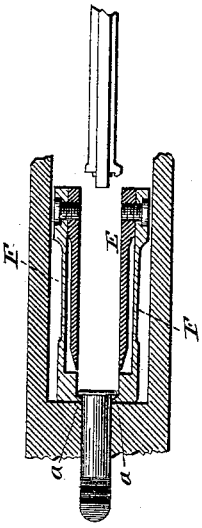


Fig. 7.

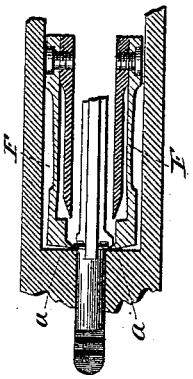


Fig. 10.

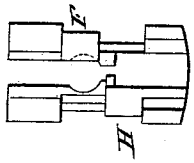


Fig. 8.

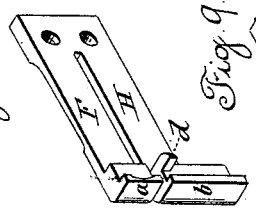
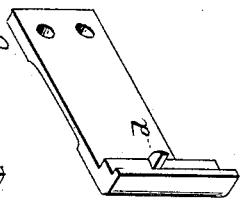


Fig. 9.



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UNITED STATES PATENT OFFICE.

THOMAS G. BENNETT, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE WINCHESTER REPEATING ARMS COMPANY, OF SAME PLACE.

MAGAZINE FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 343,423, dated June 8, 1886.

Application filed March 18, 1886. Serial No. 195,651. (No model.)

To all whom it may concern:

Be it known that I, THOMAS G. BENNETT, 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 with the parts in their normal or closed position; Fig. 2, the same, showing the carrier in the raised position, breech-piece open; Fig. 3, a transverse section cutting through the receiver, and showing the front face of the carrier; Fig. 4, a horizontal longitudinal section through the carrier between the springs F H, looking downward, and showing the breech-piece in the open position; Fig. 5, the same as Fig. 4, showing the position as in the breech-piece closed; Fig. 6, a horizontal section cutting through the springs F when the carrier is in its raised position, and showing the breech-piece as open; Fig. 7, the same as Fig. 6, showing the breech-piece closed; Fig. 8, a perspective view of the two springs; Fig. 9, a perspective view showing the two springs made as one; Fig. 10, an end view of the carrier, showing the lower spring, H, on one side and the upper spring, F, on the opposite side.

This invention relates to an improvement in that class of magazine fire-arms in which the magazine is located directly beneath the barrel, the invention having special reference to arms adapted to use the smaller sizes of cartridges.

The smaller cartridges are made in various lengths, according to the quantity of powder required, and if the carrier be adapted to receive a cartridge of a given length from the magazine, forced thereon by the magazine-spring acting on the column of cartridges, should a cartridge of a shorter length be employed, the column would follow the shorter cartridge onto the magazine, so that the rear portion of the second cartridge would extend from the magazine onto the carrier, and thus clog the working of the carrier, unless some device be employed to stop the column of cartridges before the second can have passed to the rear of the front face of the carrier.

The object of this invention is to produce a simple and effective device whereby the arm may be adapted to the use of various lengths of cartridges of the same class; and it consists in the arrangement of spring-stops upon the carrier, adapted to be operated by the breech-piece, whereby the column of cartridges in the magazine is held after the rearmost cartridge has passed onto the carrier, and so that the next or second cartridge may be held forward of the carrier irrespective of the length of the rearmost cartridge which has preceded it onto the carrier, as more fully hereinafter described.

In illustrating my invention I show it in connection with the arm well known as the "Winchester Repeating Arm;" but it will be understood that it is adapted to various classes of arms in which the carrier is arranged to move up and down in rear of the magazine and barrel, to transfer a cartridge from the magazine to a position in rear of the barrel and forward of the front face of the open breech-piece.

In the illustration, A represents the receiver, in which the mechanism of the arm is arranged; B, the barrel attached to the forward end; C, the magazine beneath the barrel; D, the breech-piece, and E the carrier, in substantially the usual arrangement, and with mechanism connected with the trigger-guard lever, whereby the up-and-down movement is imparted to the carrier and the forward-and-back reciprocating movement imparted to the breech-piece. This mechanism is too well known to require particular description in this application. On one or both sides of the carrier (preferably both sides, as shown) I arrange a spring, F, in the plane of the cartridge-chamber G in the carrier. The springs are secured near the rear end of the carrier, as seen in Figs. 1 and 6. At the forward end the springs turn inward, their noses *a* partially covering the forward end of the chamber G in the carrier, but leaving a space between the two noses less than the diameter of the head of the cartridge, but somewhat greater than the diameter of the

body of the cartridge, and so that in the normal or closed position of the parts the noses *a* of the springs stand directly in rear of the magazine, as indicated in Fig. 1, and so that the column of cartridges in the magazine in this position is supported against the noses of the springs F. Below each of the springs F is a similar spring, H. The two springs F and H are preferably made in a single piece, as seen in Fig. 8. The lower springs are turned inward, like the springs F, to form a like nose, *b*, on each, the noses being in the same relation to each other as seen in Fig. 3. The springs H are each provided with an inwardly-projecting lug, *d*, in rear of the nose *b*, somewhat greater than the thickness of the flange or head of the cartridges to be used. On the under side of the breech-piece, at its forward end, is a downward projection, *e*, inclined on each side from the front end rearward and outward to produce a wedge shape, as seen in Figs. 4 and 5, corresponding to the lugs *d d* on the springs H, when the carrier is in the raised position. The noses *b* of the springs H extend downward nearly to the bottom of the carrier.

To illustrate the operation of the invention, suppose the parts to be in the closed position, the carrier down, as seen in Fig. 1, and with a column of cartridges in the magazine. The carrier is raised, as indicated in Fig. 2, in which movement the breech-piece is opened, as also seen in that figure. In this up position of the carrier the lugs are brought up to a position immediately below the barrel and in line with the wedge or cam-surface *e* on the breech-piece, and as indicated in Fig. 4. The downward extension of the noses *b* of the springs H still covers the rear end of the magazine, and so as to prevent the rear cartridge from being forced from the magazine. The breech-piece is then moved forward, and as it approaches its extreme forward movement the cam *e* passes between the lugs *d d* of the springs, as seen in Fig. 5, and forces the noses *b* of the springs outward, as seen in Fig. 5, opening them, say as from the position seen in Fig. 4 to that seen in Fig. 5, and to a sufficient extent to permit the rear cartridge in the magazine to move rearward so far as to bring its head against the front face of the carrier and to the rear of the noses *b* of the springs, as seen in Fig. 5, it being understood that the front face of the carrier is recessed, as indicated in broken lines, Fig. 2, to permit such rear movement of the cartridge between the noses of the springs, and so that the front face of the carrier serves as a stop for the column of cartridges. The carrier then drops, and as the lugs *d* pass from the cam *e* on the breech-piece the springs return, and so as to bring their noses forward of the front face of the head of the cartridge, as indicated in broken lines, Fig. 4. Then the carrier continues its descent, and as it approaches its down position the noses *a* of the springs F come forward of the flange of the rear cartridge, the same as the noses *b* of the springs G, and the carrier, arriving at its down position, brings the chamber G into line with the magazine, and the rear cartridge passes into that chamber under the action of the spring of the magazine, the noses *a* of the springs F serving as a stop for the column of cartridges. Then, the carrier being raised, as before, and the breech-piece withdrawn, the cartridge received onto the carrier, as before described, will be presented in rear of the barrel, as indicated in Fig. 2, and in the usual manner in this class of arms, the column in the magazine being held back, as before, until the breech-piece approaches its closed position, when the next cartridge will be liberated. At the same time the cartridge in the chamber in the carrier will be forced forward into the barrel, as indicated in broken lines, Fig. 2, and as the cartridge approaches its home position its head strikes the inclined rear face of the noses *a* of the springs F, as seen in Fig. 6, and completing its home movement, the head of the cartridge forces the springs F to separate, as seen in Fig. 7, so that the cartridge may be brought to a bearing on the rear end of the barrel. Then the carrier, returned as before, receives a second cartridge, and so continuing, in each successive movement the carrier receives a new cartridge from the magazine and presents it to the barrel. The carrier, being constructed to receive the longest cartridge of its class, is adapted for the use of various lengths of cartridges in the class, from the fact that the column of cartridges is held in the magazine independent of the rearmost cartridge which passes onto the carrier.

While I prefer to employ the springs on both sides of the carrier, as I have described, it will be understood that the spring on one side may be omitted, the spring on the other side being sufficient to control the column of cartridges; and while I prefer to make the spring on each side in two parts and as two independent springs, F H, it may be a single spring, as seen in Fig. 9, the advantage of making it in two parts being that the opening movement of the lower part, H, is produced before the opening movement of the part F, and hence less power is required to open the springs separately than if they were but a single spring.

The spring H may be upon one side of the carrier-block and the spring F upon the other side above, as indicated in Fig. 10, and accomplish the same result. I therefore do not wish to be understood as limiting my invention to the particular construction and arrangement of the springs on both sides the carrier.

I claim—

1. In a magazine fire-arm in which the magazine is arranged beneath the barrel and opens into a recess in the receiver at the rear, and in which the carrier is arranged to move up and down in the said recess to transfer the cartridge from the magazine to the barrel, the combination therewith of a spring upon the side of the carrier, fixed at the rear and free

at the forward end, the forward end constructed with a nose extending inward over the front face of the carrier, and so as to partially cover the rear end of the magazine and serve as a stop for the column of cartridges therein, the spring provided with a lug, *d*, in rear of its nose, and the breech-piece constructed with a cam, *e*, corresponding to said lug *d*, substantially as described, and whereby when the carrier is in its up position and as the breech-piece approaches its closing position the said cam *e* will force the spring to one side to remove its nose from over the rear end of the magazine.

2. In a magazine fire-arm in which the magazine is arranged beneath the barrel and opens into a recess in the receiver at the rear, and in which the carrier is arranged to move up and down in the said recess to transfer the cartridge from the magazine to the barrel, the combination therewith of two springs, F H, arranged upon the side of the carrier, the one F above the spring H, the said springs fixed at their rear end and extending longitudinally forward, their front free end turned inward to form a nose to partially cover the rear end of the magazine, the one spring H constructed with a laterally-projecting lug, *d*, in rear of the nose, and the breech-piece constructed with a corresponding cam, *e*, the rear face of the nose of the spring F inclined, substantially as described.

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Witnesses:
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