

UNITED STATES PATENT OFFICE.

FRANK W. TIESING AND SAMUEL V. KENNEDY, OF NEW HAVEN, CONN.

MAGAZINE FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 225,664, dated March 16, 1880.

Application filed February 2, 1880.

To all whom it may concern:

Be it known that we, FRANK W. TIESING and SAMUEL V. KENNEDY, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Magazine Fire-Arms; and we 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, side view; Fig. 2, longitudinal section with the parts in their normal condition; Fig. 3, longitudinal section, illustrating the operation of the parts; Figs. 4, 5, and 6, detached views.

This invention relates to an improvement in that class of magazine-arms in which the magazine is arranged longitudinally beneath the barrel, and in which a longitudinally-moving breech-piece and the carrier are both operated by means of a lever from below, the principal object of this invention being to charge the magazine through the frame when the operative parts are in their normal condition; and it consists in the construction, as hereinafter described, and particularly recited in the claims.

A represents the receiver, to the forward end of which the barrel B is attached in the usual manner, and beneath the barrel the magazine C is attached in like manner, and provided with the usual spring and follower.

D is the longitudinally-moving breech-piece or bolt carrying the firing-pin *a*, arranged in similar manner to the firing-pin in bolt-guns, and so that when the breech-piece D has been thrown back and again moved forward the firing-pin will be engaged by the trigger *b* in the usual manner for this class of firing-pins, too well known to require further description in this specification.

E is the operating-lever, hung upon a pivot, *d*, one arm serving as the trigger-guard, the other arm, F, extending up into the receiver, and so that when the breech-piece is in its closed position and the lever returned to its place, the end of the arm F comes down in rear of a shoulder, F', on the breech-piece to

lock the breech-piece in place and hold it against recoil, as seen in Figs. 2 and 4.

On the side of the breech-piece a cam-link, G, is pivoted, as at *e*, and so as to move back and forth with the breech-piece. In one face of the cam-link G is a groove, as indicated in broken lines, Figs. 2 and 3, and in the upper end of the arm F is a stud, *f*, which extends into the groove of the cam-link G. The cam part *g* of the link lies forward of a projection, *h*, on the firing-pin *a*, but so that when the breech-piece is closed the firing-pin is permitted to move far enough forward to strike the primer before the projection *h* will strike the edge of the cam *g*. The shape of the groove in the link, as shown, is such that the link may turn until the arm F of the lever has passed away from the shoulder F' on the breech-piece; and during this movement of the link the cam *g* bears against the projection *h* on the firing-pin, and starts it back, as indicated in broken lines, Fig. 2; then the arm F, being free from the shoulder F', permits the breech-piece to begin to move at the same time. The link G continues its turning until the shoulder *i* thereon strikes a corresponding shoulder, *l*, on the breech-piece, as seen in Fig. 3, at which time the projection *h* falls off from and against the shoulder *m* of the cam, so as to securely lock the link between the shoulder *l* of the breech-piece and the projection *h* on the firing-pin. From this point the lever acts on the link as if it were a rigid part of the breech-piece, and throws the breech-piece to its extreme rear position, as seen in broken lines, Fig. 3. Then, when the lever is turned in the opposite direction to close the breech-piece, the link will be still held until the notch *n* on the firing-pin engages the shoulder on the trigger in like manner as the firing-pin or hammer of such arms engages the trigger. The firing-pin being thus held, the breech-piece will continue its movement. The shoulder *m* of the cam passes off from the firing-pin at the time when the breech-piece is so far closed as to permit the end of the arm to come down behind the shoulder F', and this last movement of the arm F brings the link G back to its position, as seen in Fig. 1.

It will thus be seen that should the trigger

fail to catch the firing-pin the link cannot turn so as to permit the complete closing of the breech-piece. Consequently the firing-pin cannot come in contact with the primer until the breech-piece is completely closed. Again, should the firing-pin be caught by the trigger and the breech-piece not completely closed, the cam *g* will meet the advancing firing-pin, if accidentally discharged, and prevent its striking the primer.

The breech-piece is guided by a bar, *D'*, across the receiver beneath it, or by any other suitable device. It is also provided with the well-known spring-extractor *r*, so as to engage the flange of the cartridge when the breech-piece is closed, and draw it out when the breech-piece is drawn back, in the usual manner.

The carrier *H* is hung upon the same pivot *d* as the lever *E*, and when the breech-piece is closed lies in rear of and below the magazine *C*, as seen in Figs. 2 and 3, so that, if permitted, the rear cartridge, *L*, in the magazine will pass onto the carrier, its head striking an abutment, *H'*, when it has entirely passed from the magazine, and is in position to be transferred to the barrel.

At the hub of the lever *E* a shoulder, *s*, is formed on the lever, and a like shoulder, *t*, on the carrier, but distant from the shoulder *s*, as seen in Fig. 2, so that the shoulder *s* of the lever does not strike the shoulder *t* of the carrier until the breech-piece approaches its extreme rear position. Then, during the last part of the movement of the lever *E* and breech-piece, the shoulders *s* and *t* being engaged, the carrier will be raised, as seen in broken lines, Fig. 3, and transfer the cartridge to a position between the forward end of the breech-piece and the rear open end of the barrel, as seen in broken lines, and so that when the breech-piece is again moved forward, as before described, the cartridge will be moved forward from off the carrier into the barrel, and during the last part of the forward movement of the lever the arm *F* strikes a shoulder, *u*, on the carrier and returns it to its normal position, ready for a second cartridge in the magazine.

To hold the carrier up while the lever is coming forward a spring, *N*, is arranged to catch into a notch, *w*, in the hub of the carrier, as seen in Fig. 3, but so that when the arm *F* strikes the shoulder *u* it will easily turn the carrier from the hold of the spring *N*.

The magazine is charged through an opening, *M*, in the side of the receiver, the said opening being closed by a spring-cover, *P*, which also serves as a guide for introducing the cartridges in similar manner to other side-charging magazines.

To prevent the return of the cartridges after they have been introduced in the magazine until the proper time, a lever, *R*, is hung in the receiver at one side of the carrier upon a pivot, *x*, its forward end, *y*, standing directly in rear of the head of the last cartridge,

and is provided with a spring, *T*, which holds the forward end, *y*, up in that position, but permits the lever to turn downward on its pivot, as seen in broken lines, Fig. 2, so as to escape from the head of the cartridge; hence, when the cartridges are introduced in the magazine their heads will successively pass over the end *y* of the lever *R* and come in front of it, as seen in Fig. 3, and will be held in that position by the lever *R* until, in the rear movement of the breech-piece, a projection, *a'*, thereon strikes an incline, *b'*, on the lever *R*, as seen in Fig. 3, and depresses the lever, as seen in broken lines, Fig. 2, so as to free the cartridge, which is immediately thrown out onto the carrier, its head striking the projection *a'* on the breech-piece, and thence following the breech-piece until its head strikes the abutment *H'* on the carrier, as before described. The projection *a'* on the breech-piece passes off from the incline *b'* on the lever *R* before the cartridge has entirely left the magazine; hence the lever will be thrown upward, so as to be in position to come in rear of the next cartridge, and there will stand until again released. As the projection *a'* on the breech-piece passes over the same point *b'* in its forward movement as it did in its rear movement, the same depression of the lever occurs; but to prevent the rear movement of the cartridge when such depression occurs the carrier begins its descent before the end *y* of the lever *R* passes off from the head of the cartridge, and in so doing the downward projection *d'* on the forward end of the carrier comes in front of the head of the cartridge, and thus holds it while the carrier is passing down and the lever *R* is returning.

To eject the cartridge-shell, or cartridge, if it be not fired, it is first drawn out by the extractor on the breech-piece engaging the head on one side, as seen in Fig. 5, until near the extreme rear movement of the breech-piece, when the rear of the opposite edge of the head strikes a stationary shoulder or stud, *f'*, on that side of the receiver; then, as the breech-piece completes its movement, one side of the cartridge rests against the shoulder *f'*, while the other is held to the breech-piece by the extractor *r*, which throws the cartridge transversely through an opening, *A'*, in the frame, immediately over the loading-opening, and as seen in Fig. 5. A groove, *n'*, is made in the side of the breech-piece, to pass over the stud or projection *f'*.

To prevent the possibility of the cartridge, which is presented in front of the breech-piece by the movement of the carrier, accidentally passing out through the opening *A'*, the end of the carrier has an upward-projecting lip, *h'*, on that side next the opening, and so that when it is up and the cartridge resting upon it, as seen in Fig. 6, also in broken lines Fig. 3, the lip *h'* lies between the forward end of the cartridge and the opening, while the extractor has a similar position at the rear

end; hence, while the carrier is up and the cartridge upon it, it cannot by any possibility turn outward through the opening A'. The said opening A' permits the barrel to be loaded directly therethrough, instead of from the magazine, so that the magazine-cartridges may be held in reserve and the arm used as a breech-loader.

The arrangement of the link G with the breech-piece and operating-lever may be used in a breech-loading arm without the magazine and carrier.

I claim—

1. The combination, with the longitudinally-moving breech-piece and a firing-pin or hammer arranged therein, of the grooved link G, pivoted to the breech-piece, constructed with the cam *g* upon its edge, and the operating-lever, substantially as and for the purpose described.

2. The combination, with the longitudinally-moving breech-piece and a firing-pin or hammer arranged therein, of the grooved link G, pivoted to the breech-piece, constructed with the cam *g* upon its edge, and the operating-lever, and shoulder F' on the breech-piece, against which the upper arm of the lever will stand when the breech-piece is in its closed position, substantially as described.

3. In a magazine fire-arm having the magazine arranged longitudinally beneath the barrel, the receiver constructed with an opening in its side for charging the magazine, with the lever R, arranged to catch and hold the cartridges as they are introduced into the magazine, and mechanism, substantially such as described, to engage the breech-piece and said lever, whereby said lever is depressed by the rear movement of the breech-piece, substantially as and for the purpose specified.

4. In a magazine fire-arm having the magazine arranged longitudinally beneath the barrel, the receiver constructed with an opening in its side for charging the magazine, with the lever R, arranged to catch and hold the cartridges as they are introduced into the magazine, and mechanism, substantially such as described, to engage the breech-piece and said lever, whereby said lever is depressed by the rear movement of the breech-piece, so as to permit the rear cartridge of the magazine to pass onto the carrier, and the carrier H, hung

upon a pivot of the operating-lever and shoulders thereon, so that the carrier is raised during the last part of the rear movement of the breech-piece and dropped during the last part of the forward movement of the breech-piece, substantially as described.

5. In a magazine fire-arm having the magazine arranged longitudinally beneath the barrel, the receiver constructed with an opening in its side for charging the magazine, with the lever R, arranged to catch and hold the cartridges as they are introduced into the magazine, and a connection between the breech-piece and said lever, whereby the cartridges are released by the rear movement of the breech-piece, so as to permit the rear cartridge of the magazine to pass onto the carrier, and the carrier H, hung upon a pivot of the operating-lever and shoulders thereon, so that the carrier is raised during the last part of the rear movement of the breech-piece, and dropped during the last part of the forward movement of the breech-piece, with a lip, *h'*, on the ejecting side of the carrier, substantially as described.

6. In a magazine fire-arm having the magazine arranged longitudinally beneath the barrel, the receiver constructed with an opening in its side for charging the magazine, with the lever R, arranged to catch and hold the cartridges as they are introduced into the magazine, and a connection between the breech-piece and said lever, whereby the cartridges are released by the rear movement of the breech-piece, so as to permit the rear cartridge of the magazine to pass onto the carrier, and the carrier H, hung upon a pivot of the operating-lever and shoulders thereon, so that the carrier is raised during the last part of the rear movement of the breech-piece and dropped during the last part of the forward movement of the breech-piece, with a lip, *h'*, on the ejecting side of the carrier, and a downward projection, *a'*, on the forward end of the carrier, substantially as described.

FRANK W. TIESING.
SAMUEL V. KENNEDY.

Witnesses:

JOHN E. EARLE,
JOS. C. EARLE.