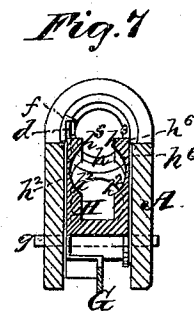
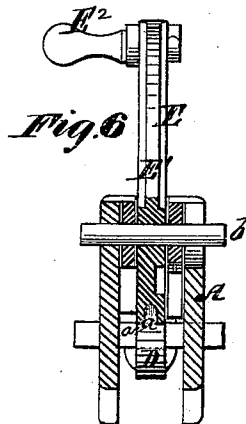
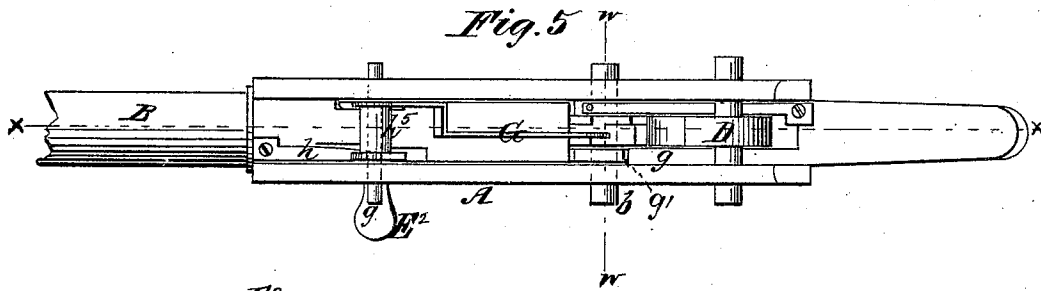
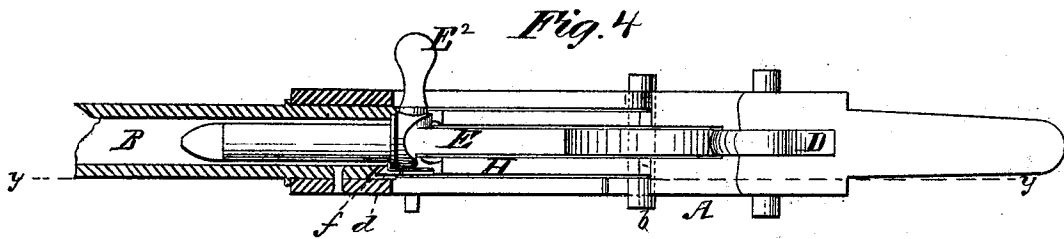


A. T. FREEMAN.
Magazine Fire-Arms.

No. 147,555.

Patented Feb. 17, 1874.



Witnesses:
James Mathew Jr.
J. N. Campbell.

Inventor.
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UNITED STATES PATENT OFFICE.

AUSTIN T. FREEMAN, OF HERKIMER, NEW YORK.

IMPROVEMENT IN MAGAZINE FIRE-ARMS.

Specification forming part of Letters Patent No. **147,555**, dated February 17, 1874; application filed January 2, 1874.

To all whom it may concern:

Be it known that I, AUSTIN T. FREEMAN, of Herkimer, in the county of Herkimer and State of New York, have invented a new and useful Improvement in Breech-Loading Magazine-Guns; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 is a side elevation, showing the arm as just fired. Fig. 2 is a longitudinal section, in the line *y y* of Fig. 4, of the arm in the position it assumes when the fired cartridge has been partly withdrawn, and a new cartridge is in the carrier ready to be brought up from the magazine. Fig. 3 is a longitudinal section of the arm in the line *x x* of Fig. 5, showing the cartridge-carrier, with the cartridge raised in line with the bore of the gun, and ready for the parts to be readjusted to the position shown in Fig. 1. Fig. 4 is a horizontal section of the arm as adjusted in Fig. 1. Fig. 5 is a bottom view of the arm, with the parts in the position shown in Fig. 1. Fig. 6 is a transverse section in the line *w w* of Fig. 5, looking toward the stock end of the gun. Fig. 7 is also a transverse section in the line *w' w'*, but looking toward the breech end of the barrel, the parts being in the position shown in Fig. 2.

The same letters of reference are used in the different figures to designate the same parts.

The nature of my invention consists, first, in the combination of an intermittently-vibrating cartridge receiver and conveyer with the cam and lever-acting breech-block, said conveyer being hinged directly upon the pin of the breech-block, and the said breech-block being constructed with an extension, by which it lifts the cartridge receiver and conveyer in line with the chamber of the barrel, and with a cam-extension, by which it forces the cartridge into said chamber. By this combination, the cartridges, after being automatically fed into the receiver, are brought into position by a direct action of the breech-block as said block is turned back on its pin, and are forced into the chamber by a direct action of said block

upon the cartridge as the block is turned forward on said pin. The advantage of the intermittent motion of the cartridge carrier and conveyer lies in its not being moved until the breech has been moved far enough back to effect the withdrawal of the cartridge-shell from the chamber of the gun. It consists, second, in the intermittent vibrating cartridge receiver and conveyer, hinged directly upon the pin of the breech-block, and combined with said block, so as to be operated by it directly by a tail or extension thereof. By this construction, fewer parts are necessary, and complicated intermediate mechanism, which imparts a reciprocating motion to the carrier, is dispensed with. Third, in the oscillating spring cartridge-ejector, constructed with an additional catch on its rear side, in combination with the carrier, constructed with a latch on its front end, and with the breech-piece, constructed with an extension or tripping-tail, whereby the ejector is made to hold up the cartridge-carrier in a central range with the bore of the gun until the operation of closing the breech commences and the cartridge is moved far enough into the chamber to carry, by its flange, the ejector along with it, and the carrier is released and allowed to assume a position in range with the magazine; and whereby, also, when the operation of opening the breech commences, the ejector is tripped, and the power of its spring brought into action for the purpose of suddenly ejecting the cartridge-shell.

To enable others skilled in the art to make and use my invention, I will proceed to describe it.

A is the stock portion of the gun; B, the barrel; B', the breech-chamber; C, the cartridge-magazine chamber; D, the hammer or cock; E, the breech-piece; E¹, a cam-extension on the bottom of the breech-piece; E², the handle or thumb-piece, by which the breech-piece is operated; F, a tail or rear extension of the breech-piece, and *a* the firing-passage through the breech-piece, leading from the rear to the front thereof; H, the cartridge-carrier; *h*¹ *h*², shoulders on the inner side of the carrier, and *h* a channel cut down through its top; *b*, the pin upon which the breech-block

and cartridge-carrier are hinged, this pin being a center common to both. g is a spring, and g' a detent, by which the carrier is retained in range with the magazine-chamber. h^3 is a stop or projection on the forward end of the cartridge-carrier. G is the cartridge-ejector. It is of angular form. g' is the pin on which the ejector is hung and allowed to oscillate. h is a spring, and h^5 a cam, by which the ejector is controlled. The cam holds the spring in a passive condition when the ejector is in the position shown in full black lines, Fig. 1, but allows the spring to exert its force when the parts are adjusted to the position shown in Fig. 2. The ejector has a laterally-extended lip, d , on its upper vertical part c , and this lip stands in front of the flange of the cartridge, and is forced, by said flange, when the breech-piece is closed, as in Fig. 1, into the recess f , formed in the outside of the chamber part of the barrel. The ejector also has a curved nose, e^2 , on its lower rear portion e^1 , against which the tail F of the breech-block strikes while the parts are being adjusted to the position shown in dotted lines in Fig. 1, and in full black lines in Fig. 2. The ejector is also furnished with a catch, e^4 , on its rear side, which catches under the latch h^3 of the carrier.

It will be observed that the rear portion of the breech-block extends down between the ears or rear ends of the cartridge carrier, and also behind and below the bottom of said carrier, when the parts are adjusted as shown in Figs. 2 and 3, and that its cam-shaped portion B^1 passes through the channel h in the top of the carrier, and down between the internal shoulders h^2 h^6 , when the breech is closed, as in Fig. 1.

In practice, I intend to use the usual tube under the barrel for feeding the cartridges to the carrier; and the cartridges will be fed along by a spiral spring from the magazine into the carrier as fast as used.

The gun having been fired, as in Fig. 1, and a new cartridge being in the carrier, the breech-block is pulled up and back to the position shown in dotted lines in Fig. 1. This brings the tail F of the block up to the nose e^2 of the ejector, and, by a continuation of this back-pull of the breech-block until the parts assume the position shown in Fig. 2, the ejector-spring h will be set free from its cam h^5 , and the ejector will suddenly start the cartridge out of the chamber, as illustrated. The cartridge-carrier, being out of range with the barrel of the gun, and in range with the magazine, receives the empty shell upon its channeled top, and the sides of the channel therein will prevent the cartridge-shell from falling off on one side while it is moving back, and thus act as a guide to it while it is being ejected. The cartridge-shell being thus ejected, the carrier is raised to the position shown in Fig. 3, and locked in that position by the catch e^4 of the ejector falling under the latch h^3 of

the carrier. The parts being in this condition, and a cartridge in range with the chamber B of the barrel, the breech-piece is forced forward and down, and its cam portion E^1 forces the cartridge forward into the said chamber, and as the cartridge passes into the chamber its flange takes hold of the lateral lip d of the ejector, and carries the upper end of the ejector into the recess f . This action upon the ejector causes it to disconnect from the carrier, whereupon the carrier falls, or is caused to fall, to the position shown in Figs. 1 and 2, and the rear end of the carrier, by its detent g' , engages with the spring g , and becomes temporarily stationary in its position. Simultaneously with this descent of the carrier and the entrance of the end e of the ejector into the recess f , the lower rear end of the ejector rises to the position shown in dotted lines in Fig. 1, and the cam h^5 passes under the spring h in such a manner that this spring is caused to act with a straight vertical pressure upon it and the pin g' of the ejector, which pressure in a straight line holds the ejector in the position shown by dotted lines in Fig. 1. Now, the hammer is set free to fire the arm, and immediately after the breech-piece is moved up and back to the position shown in Fig. 2, or until its tail F presses against the nose e^2 of the ejector G , and adjusts the cam to the position shown in Fig. 2. Upon this adjustment taking place, the spring acts with an oblique pressure upon the cam h^5 , and the ejector suddenly starts the cartridge, as shown in Fig. 2, out of the chamber B' of the barrel, and the cartridge glides up on the channeled top of the carrier, and is removed by the hand or dropped upon the ground. A continuation of the up-and-back movement of the breech-piece causes the tail F to pass up under the bottom of the carrier and lift it to the position shown in Fig. 3, in which position it is locked by reason of the catch e^4 of the ejector G and latch h^3 of the carrier H becoming engaged with one another. Thus the charging of the gun is continued until all the cartridges of the magazine have been fired.

In practice, I may find it convenient to employ a connecting link or pawl between the hammer and breech-block, as is the case in some breech-loading guns, or as shown in the Elliott arm, so that by the backward movement of the hammer the breech is opened.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The vibrating cartridge receiver and carrier, constructed as described, with a vertical longitudinal slot extending through the receiving-chamber, to receive the cam-extension of the breech-block, in combination with the cam-shaped lever-acting breech-block, the parts being arranged on the same pivot, and the carrier being operated through the medium of the extension or tail F of said breech-block, substantially as described.

2. The intermittently-vibrating cartridge re-

ceiver and conveyer H, hinged directly to the axial pin of the breech-block, and combined with said block, having the tail-piece F, and operated directly by said tail at intervals, substantially as and for the purpose set forth.

3. The combination of the spring-ejector G, constructed with catch e^4 on its rear side, the carrier H, constructed with the latch h^3 on its

front end, and the breech-piece E, constructed with the tail F, substantially as and for the purpose described.

AUSTIN T. FREEMAN.

Witnesses:

GAYLORD STEELE,
J. E. FREEMAN.