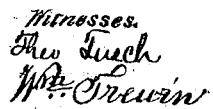


Breech-Loading Fire-Arm.

Patented Apr. 18, 1865.



Inventor.
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UNITED STATES PATENT OFFICE.

ALBERT M. WHITE, OF PORT CHESTER, NEW YORK.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 47,350, dated April 18, 1865.

To all whom it may concern:

Be it known that I, ALBERT M. WHITE, of Port Chester, in the county of Westchester and State of New York, have invented a new and useful Improvement in Breech-Loading Fire-Arms; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view, partly in section, of a fire-arm to which my improvement has been applied. Fig. 2 is a like view, the operating parts being shown in different position. Fig. 3 is a top view thereof.

Similar letters of reference indicate like parts.

This invention relates to that class of breech-loading fire-arms in which a swinging breech-piece constitutes also the lock-frame.

It consists in operating the latch which holds the breech-piece or lock-frame in position for firing by means of the trigger, and in certain means of connecting the said latch with the trigger for that purpose.

It also consists in a certain mode of attaching and operating the cartridge-shell drawer; and it further consists in so combining the hammer and the trigger that the two may form rigid arms of a lever, of which the attachment of the cartridge-shell drawer forms the third arm, so that the power of the hand may be applied to both the hammer and trigger to draw the cartridge-shells.

A represents a portion of the barrel of a breech-loading gun, and D its receiver.

E is the breech-pin or lock-frame. Its sides are suitably inclosed, the cover of one of its sides being wholly removed in Fig. 1 and partly removed in Fig. 2, to show the construction of the lock and its appurtenances, which are inclosed within it. The guard K is a part of or is permanently attached to the lock-frame E. The frame is received and has a partial rotary movement within the receiver D, which is slotted centrally and vertically in the line of the axis of the barrel A. The lock-frame is inserted into such slot from below, and when it is in position it is held stationary therein by means of a sliding latch, G, which has a rabbet, *b*, formed in its lowest outermost corner, to articulate with the shoulder *i*,

formed on the adjacent part of the receiver. The sliding latch extends upward and forward, terminating on its highest part in a shoulder, *m*, which abuts against the upper rear end, *s*, of the lock-frame, and the latch is thereby limited in its backward movement. The front face of the shoulder receives the back part of the hammer when the latter is at half-cock, as seen in Fig. 2. The lower part of the slide is formed into an arm, *n*, which is confined and slides between the bottom *p* of the lock-frame and a fixed guide, *a*. The foremost end of the arm *n* is tenoned into a mortise in the hinder part of the trigger H, which mortise is intersected by a transverse vertical slot, *q*, through which and through a round hole in the tenon of the arm *n* there passes a pin, *r*, by means of which the trigger and the arm *n* of the latch are connected together. The vertical diameter of the transverse slot *q* is greater than its horizontal diameter, so as to permit the trigger to move vertically on the connecting-pin *r*.

J is the fulcrum-pin, upon which the trigger H rotates, the pin being received in an elongated slot, *c*, whose longest diameter is in a plane at right angles to the greatest diameter of the slot *q*, whose position is below the back part of the slot *c*. The object in lengthening the slot *c* is to permit the trigger to move in a horizontal direction on the fulcrum-pin J when it is desired to unlock the latch G. The upper and forward part of the trigger is formed into a sear, V.

L is a steel spring secured in a recess in the lower front corner of the lock-frame, its free end projecting backward and resting against the breast of the sear V. The finger-piece of the trigger extends below the bottom of the lock-frame, and is protected, as usual, by a guard, K, which, however, in my improvement, is a fixed part of the lock-frame. When the said lock-frame is in place, its lower surface coincides with the lower surface of the receiver, as shown in Fig. 1.

The hammer C is secured in the lock-frame by means of its fulcrum-pin I, which, as well as the fulcrum-pin J, passes through both sides or covers of the lock-frame, the fulcrum-pin J passing also through the sides of the receiver, and serving as a fulcrum about which the lock-frame rotates when it is in place in the gun. The sear V engages with the notches *d* *e* of the tumbler in the ordinary manner.

M is a flat spring secured above and upon the guide *a*, its free end extending beneath the back part of the hammer and operating to throw it forward when the trigger is disengaged from the tumbler. The breech of the gun here shown is prepared to receive a metallic cartridge, a vertical slot, *t*, being made in the upper forward end of the lock-frame, to enable the point of the hammer to reach the rim of the cartridge.

A long recess, *j*, which extends forward from the rear end of the barrel, is made in the receiver D; vertically beneath the center of the bore, for the reception of the shank of the spring-cartridge-shell drawer *g*, which is made of two leaves, the lower leaf, which is the longer, having a hooked or slotted end, *f*, which is received in a mortise, *u*, in the front part of the lock-frame or breech-piece, and is attached to the latter by means of a pin, *h*, inserted transversely through the mortise *u* and through the hook or slot of the drawer, such hook or slot being of such length vertically as to preserve the connection between the drawer and the pin *h* while the latter is moving in a circle concentric with the pin I, and the former is moving in the recess *j*, parallel, or nearly so, with the bore of the barrel. The length of the upper leaf of the cartridge-shell drawer is such that when the breech of the gun is closed, as shown in Fig. 1, and the drawer is pushed forward in the recess *f*, the end *o* of the said leaf, which is inclined upward and hollowed out to fit the shell, will engage the front of the head or flange of the shell, the lower edge of the breech being cut away, as shown in the drawings, to permit the end *o* of the shell-drawer to assume that position. The leaves of the shell-drawer are made elastic, so that its upper leaf will be forced upward toward the cartridge.

The lock-frame is inclosed upon both of its sides, and also upon its edges or perimeter, openings being made in the latter, however, to permit the back-and-forth movement of the latch G and of the hammer and of the trigger. It is put into its place in the receiver from beneath, and held therein by means of the fulcrum-pin J. After the lock-frame has been inserted, it is rotated back to the position seen in Fig. 2, when the shell-drawer *g* is pushed into its recess *j*, and its hook fastened in the mortise *u*, as before explained.

In order to insert a cartridge in the gun, the sliding latch is drawn forward by pushing the trigger in the direction of the arrow in Fig. 2, when the lock-frame becomes free to rotate on the pin J, thereby falling away from and exposing the breech of the gun. This movement of the lock-frame brings the shell-drawer *g* forward, and when the cartridge has been inserted it is returned to its proper position, the elasticity of its leaves permitting the edge O to pass beneath the rim of the cartridge, in order to engage it in front. When the hammer is down, the upper notch, *d*, in its tumbler is below the edge of that part of the trigger

which engages said notch. After the gun has been fired and it is desired to withdraw the shell of the cartridge, the operator pushes the trigger in the direction of the arrow, in order to disengage the latch G from the receiver. This movement brings the latch toward the hammer until it has come in contact with the rear end of the guide *a*, which serves as a stop, and the hammer, being drawn backward at the same time, will abut against the upper part, *m*, of the latch. In this position of the latch the hammer and the trigger, the comb of the hammer, and the finger-piece of the trigger become, in effect, two arms of a three-armed lever whose fulcrum is the trigger-pin J, and whose third arm is that part of the lock-frame between the fulcrum and the pin *h*, and with the thumb against the comb of the hammer and the first and second fingers behind the trigger the whole power of the hand can be exerted to draw the empty case out of the breech of the gun.

The lower forward portion of the slot in the receiver which contains the lock-frame is recessed, as at *x*, to form a shoulder, against which the lower forward part of the lock-frame E abuts when it is in place. That part of the receiver which is adjacent to the upper rear part of the latch G is also recessed, as at W, to receive that part of the latch. The effect of this construction is to prevent the vertical movement or displacement of the lock-frame when the gun is being discharged. When the trigger is pushed forward to unlock the lock-frame, it has a partial rotation upon the fulcrum J, and its vertically-elongated slot *q* permits it to move vertically upon the pin *r* at the same time that it is drawing the latch G forward, and since the slot which receives the fulcrum J is elongated in a horizontal direction, the trigger is also permitted to move horizontally forward during its rotary movement, the tumbler being the fulcrum against which it rests during its said forward movement.

I claim as new and desire to secure by Letters Patent—

1. Operating the latch which holds the lock-frame in position in the receiver by means of the trigger, substantially as above described.

2. Elongating the slot in the trigger which receives the joint-pin *r* of the latch in a vertical or nearly vertical direction, so as to permit the trigger to have a vertical downward movement when it is pushed forward to draw the latch, substantially as above described.

3. Elongating the slot *c* of the fulcrum J horizontally, to permit the trigger to move horizontally forward when unlatching the lock-frame, substantially as described.

4. The combination of the vertically-elongated slot *q* and the horizontally-elongated slot *c*, as arranged, to permit the sear and the trigger to have a vertical, horizontal, and rotary motion when the latch G is thrown forward to release the lock-frame, substantially as described.

5. The spring-cartridge-shell drawer con-

connected with the swinging breech-piece or lock-frame by means of a pin, *h*, and slot or hook *f* in such manner as to preserve the connection while the pin *h* moves in a circle concentric with the pin *J*, on which the breech swings, and the said drawer moves parallel, or nearly so, with the bore of the barrel, substantially as herein described.

6. So combining and arranging the hammer and the trigger in a swinging breech-piece or lock-frame that the two may form arms of a three-armed lever, of which the attachment of the cartridge-shell drawer forms the third arm, and of which the pin on which the trigger works is the fulcrum, whereby with the thumb

in front of the comb of the hammer and the fingers behind the trigger the whole power of the hand may be applied to withdraw the cartridge-shells from the barrel, substantially as herein specified.

7. The sliding latch *G* and the stop *a*, in combination with each other, as described, as a means of forming a rigid connection between the hammer and trigger, whereby they are made to serve as two arms of a lever, for the purpose of withdrawing the cartridge-shell.

A. M. WHITE.

Witnesses:

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C. L. TOPLIFF.