

UNITED STATES PATENT OFFICE.

FRANKLIN B. PRINDLE, OF NEW HAVEN, CONNECTICUT.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 51,213, dated November 28, 1865.

To all whom it may concern:

Be it known that I, FRANKLIN B. PRINDLE, of the city and county of New Haven, and State of Connecticut, 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 of the construction, character, and operation of the same, reference being had to the accompanying drawings, which make part of this specification, in which—

Figure 1 is a perspective view of a longitudinal section of the operating or movable parts of the breech, showing their relative positions when loading. Fig. 2 is a perspective view of the lock side, showing the position of the parts when ready for firing. Fig. 3 is a perspective view of the left-hand side of the frame which holds the operating parts of the breech, showing the holes for the joint-pins, &c.

My improvement consists in operating the vibrating breech-piece by means of the inner end of the guard-lever acting on the knuckle-joint of the jointed levers, by which the vibrating breech-piece is first drawn back out of the rear end of the barrel, and then its front end is elevated to a convenient position for loading, and, after the charge is deposited, by bringing back the guard-lever to the position of a trigger-guard, it will first depress the front end of the vibrating breech-piece to a level with the barrel and then force it forward into the rear end of the barrel, so as to make a close joint; and in that the same motion which prepares the piece for loading also carries back the hammer to the position of fully cocked, and will not allow it to be brought down upon the nipple again until the front end of the vibrating breech-piece is forced into the rear end of the barrel; but when the guard-lever is in its position as trigger-guard the hammer may be let down or cocked at pleasure, without reference to the guard-lever.

I make the frame for containing the operating parts of the breech of iron, or any other suitable material, substantially as shown and indicated at A A, &c., which is to be fitted or let into the stock.

I make the barrel B, Fig. 1, in the usual way, (either smooth or rifled,) and counterbore the rear end in a conical form, as shown at C, Fig.

1, to receive the front end of the vibrating breech-piece.

I make the vibrating breech-piece D of iron, or any other suitable material, by drilling, punching, or casting a suitable chamber in it, as E, to receive and contain the charge, (whether of fixed or loose ammunition,) and a little larger in diameter than the diameter of the caliber of the barrel B, so that the ball, when used, will be slugged or ribbed to suit, as the barrel is smooth or rifled.

I attach the breech-piece D, by a noddle or joint-pin, *a*, to a jointed lever, which is shown in section at F and G, and I remove a portion of, or make a recess in, the rear and lower corner, where a stop-pin or projection, *b*, causes it to vibrate when acted on by the levers, all as shown or indicated in Fig. 1.

I make the jointed levers F and G of the character shown in section, but with two ears on each, so that the guard-lever H may act on their knuckle-joint centrally in both; and I secure the rear end of the part G by a joint-pin, *c*, and attach the front end of the part F to the rear end of the vibrating breech-piece D by the joint-pin *a*, which passes through both ears of F, and slides in grooves, like *d*, Fig. 3, in the sides of the frame A A, &c.

I attach the two parts F and G together at the knuckle-joint by means of the joint-pin *e*, which passes through the four ears, (two on F and two on G,) two of which are shown at *g* and *h*, (and the other two are similar, and opposite,) and the slot *f* in the inner end of the guard-lever H, which inner end passes through the center, between the ears of F and G and forms the lever to work them.

I make the guard-lever H, Figs. 1 and 2, substantially as shown in section in Fig. 1, to serve as a trigger-guard, as shown in Fig. 2, as well as a lever to work the vibrating breech-piece D.

I work the guard lever H on the fulcrum-pin *i*, and have the slot *f* in its inner end work on the pin *e*, which secures the knuckle-joint of the jointed levers F and G, to operate the breech-piece; and in this lever, inside of the frame, I fix a pin or projection, as *k*, Fig. 1, to work in the lever *l*, which, by means of its bell-crank character, as shown at *o*, on which the main-spring *p*, Fig. 1, works, and its

inflexible connection with the part *m*, Fig. 2, will raise the hammer *K* to the position of fully cocked.

I make and attach the trigger, substantially as shown at *L*, Figs. 1 and 2, to work the inner projection or lever, *n*, Fig. 1, of the sear *n*, Fig. 2.

I make the lock of a series of jointed levers, as shown in Fig. 2, and connect it with the guard-lever *H* by means of the inflexible connection of the parts *m*, Fig. 2, and *o*, Fig. 1, as indicated, using a suitable plate to cover the movable parts of the lock, instead of the mere scroll or bridge *M*, Fig. 2, or any other form of lock may be used.

Having constructed the several parts as above described, and connected the vibrating breech-piece *D* with the jointed levers *F* and *G*, and with the guard-lever *H*, if the guard-lever *H* be thrown down to the position shown in Fig. 1 the slot in the inner portion of the lever, by acting on the joint-pin *e* of the knuckle-joint of the jointed levers *F* and *G*, will first draw back the breech-piece *D* until it strikes the pin or projection *b*, and then it will force down the rear end and elevate the front end to the position shown in Fig. 1, when it is ready for loading; and the same motion, (when my lock is used) will, by the action of the pin *k* on the lever *l*, and its connection through *o*, Fig. 1, with *m*, Fig. 2, throw back the hammer *K* to the position of being fully cocked, as shown in Figs. 1 and 2, and the inner portion of the guard-lever will press upon the projection or lever of the sear *n*, Fig. 2, as shown at *n*, Fig. 1, and thus force the sear into the notch, as shown at *p'*, Fig. 2, irrespective of the spring, so that the hammer must remain in that position until the guard-lever *H* is brought back to the position shown in Fig. 2, when the piece may be discharged or the hammer let down by the use of the trigger, as when the guard-lever is in the position shown in Fig. 2 the hammer and trigger may be used freely.

After the charge, which may be of fixed or loose ammunition, is deposited in the chamber *E* of the breech-piece *D*, by bringing the guard-lever *H* to the position shown in Fig. 2, the slot at *f*, acting on the pin *e*, will force the knuckle-joint upward, as the pin *b* prevents its moving forward, and bring down the front end of the vibrating breech-piece *D* to a level with the barrel, and then by the same action force the front end of the breech-piece *D* into the conical counter-bore *C* in the barrel, and will force up the knuckle-joint of the jointed levers, so that the three joint-pins *a*, *e*, and *c* will be in a di-

rect line to prevent any recoil of the breech-piece at the time of discharge; and the upper side of the knuckle-joint will be pressed against the under side of the rear end of the vibrating piece *N*, and force its front end down upon the rear end of the breech-piece *D*, so that the whole will be straight and smooth on the top, as indicated in Fig. 2, when, after putting on a cap, the piece will be ready for firing.

When a metallic cartridge is to be used I attach a breech-piece made substantially as indicated in Fig. 5, where—

Fig. 4 is a perspective view of a section of the breech-piece. Fig. 5 is a perspective view of the outer side of the same. Fig. 6 is a perspective view of the part used in the place of the nipple or cone. Fig. 7 is a perspective view of the part whose point pierces the teat of the cartridge. Fig. 8 is a perspective view of Figs. 6 and 7 put together. Fig. 9 is a perspective view of a section of the metallic cartridge.

I place the metallic cartridge, Fig. 9, in the breech-piece at *E*, Fig. 4, and then when the hammer comes down upon the outer end of Fig. 6, as at *r*, Fig. 5, it will force the bar, Fig. 6, downward, and the inclined slot at *s*, Figs. 6 and 8, will force the point *t*, Figs. 7 and 8, inward, as shown at *t*, Fig. 4, and into the teat *v*, Fig. 9, of the cartridge and explode the fulminate, and also hold the cartridge-case firmly in the breech-piece; and when the breech-piece is being drawn back the point *w* will pass up the inclined plane, (indicated by red dots near *A*, Fig. 1,) so that the inclined slot *s*, Figs. 6 and 8, will draw back the point *t* and release the cartridge-case, when it may be readily removed by the thumb and finger, preparatory to inserting another cartridge; or any other suitable means of exploding the cartridge may be resorted to, as may be found or thought best in any case.

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

The combination of the vibrating breech-piece *D* with the jointed levers *F* and *G*, when operated by the guard-lever *H*, or any other suitable lever acting on the knuckle-joint, so as to communicate both a vibratory and a longitudinal motion to the breech-piece, and the whole is constructed, arranged, and fitted to produce the result substantially as herein described.

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Witnesses:

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