2 Sheets—Sheet 1.

H. GOODMAN.

BREECH-LOADING FIRE-ARM.

No. 185,912.

Patented Jan. 2, 1877.

FIG. 1.

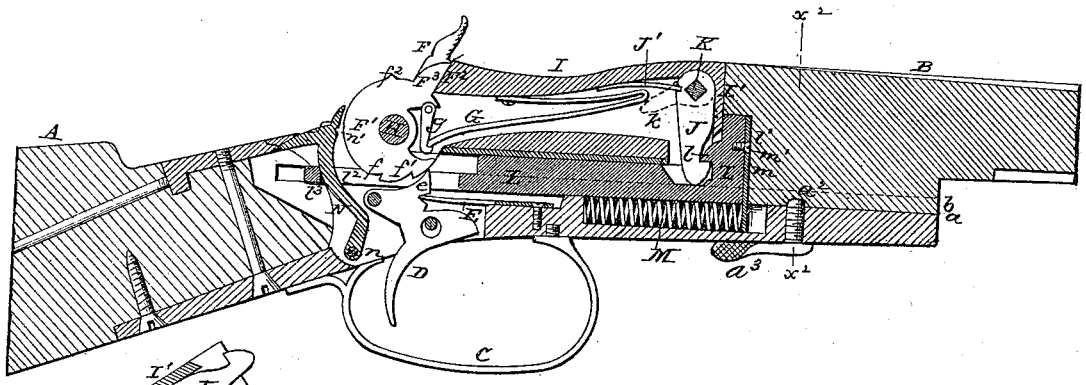
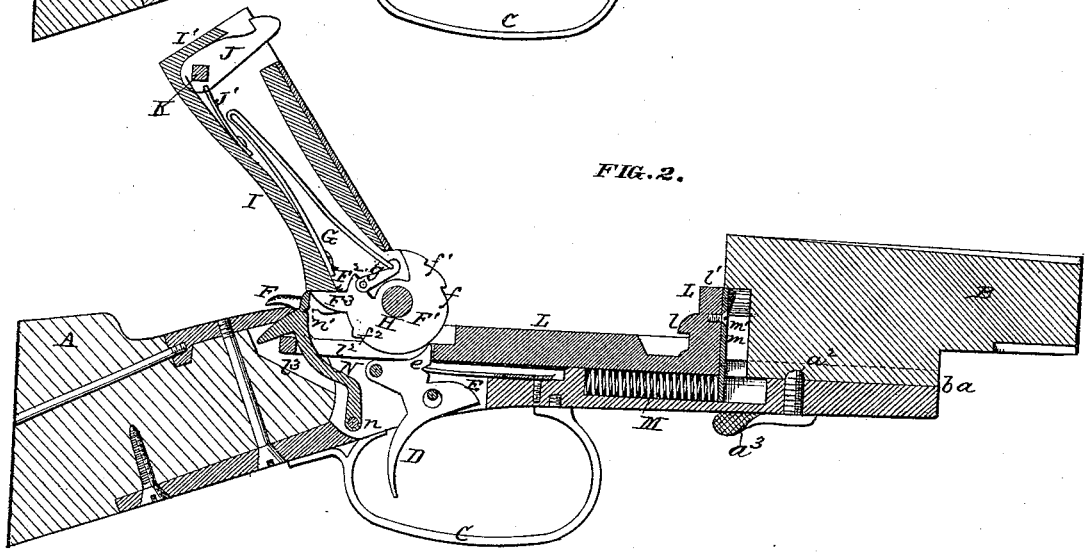


FIG. 2.



ATTEST:

Chas. J. Gooch

Robert Burns.

INVENTOR:

Henry Goodman

By Knight Bro's

Attys.

2 Sheets—Sheet 2.

H. GOODMAN.

BREECH-LOADING FIRE-ARM.

No. 185,912. Patented Jan. 2, 1877.

FIG. 3.

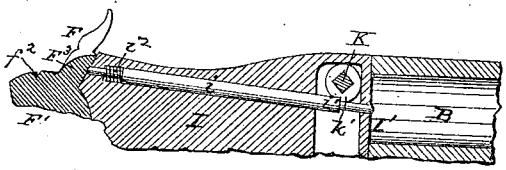


FIG. 4.

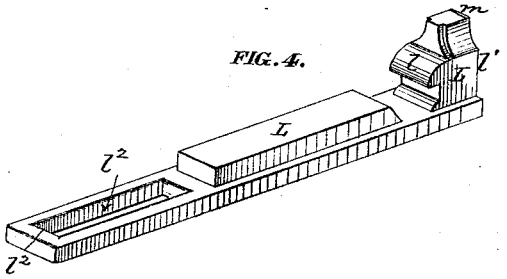
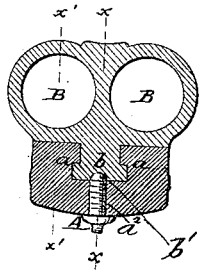


FIG. 5.



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UNITED STATES PATENT OFFICE.

HENRY GOODMAN, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF HIS RIGHT TO LEWIS LOCKWOOD, OF SAME PLACE.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. **185,912**, dated January 2, 1877; application filed July 22, 1876.

To all whom it may concern:

Be it known that I, HENRY GOODMAN, of the city and county of St. Louis, and State of Missouri, have invented certain new and useful Improvements in Breech-Loading Fire-Arms, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

The first part of my improvement relates to the appliances for cocking the gun simultaneously with the opening of the breech. In this the hammers turn on the same pivot as the breech-block, which latter, by contact with the striking-face of the hammers, carries them back with it as it is swung back.

The second part of my improvement relates to the appliances for extracting the shells of the cartridges. In this a lever passing through an aperture in the extractor is pushed back by cams on the hammers when they are thrown back beyond the full-cock.

The third part of my improvement relates to a device for causing the positive backward movement of the firing-pins, from their contact with the cartridge-shells, to allow the breech-block to be easily thrown up from its firing position. In the above, projections on the turn-pin of the catch engage shoulders on the firing-pins as the catch is retracted, and the catch and firing-pins are thus simultaneously drawn back.

In the drawings, Figure 1 is a longitudinal section at x x, Fig. 5, showing the breech-block in firing position. Fig. 2 is a similar section, showing the breech-block in loading position. Fig. 3 is a detail longitudinal section at x^1 x^1, Fig. 5, showing the firing-pin and connections. Fig. 4 is a perspective view of the cartridge-extractor. Fig. 5 is a transverse section at x^2 x^2, Fig. 1.

A is the stock, and B the barrel or barrels. I shall describe my improvement as applied to a double-barreled gun; but it is evident that the same is equally applicable to single-barreled guns. C is the trigger-guard; D, a trigger. E is the sear-spring. The projection e of the trigger forms the sear, and is arranged to engage in either the full-cock or half-cock notches f and f^1 of the hammer-hubs F^1. G is the main or hammer spring, connected to the hammer-hub by a link, g. The hammers F turn on a pin, H, which also forms the hinge-pin of the breech-block I. The front face I' of the breech-block fits accurately the rear ends of the barrels, which are open to receive ordinary metallic cartridges, against whose butts the face I' of the breech-block presses when in the firing position. The faces F^2 of the hammers come in contact with the rear ends of the firing-pins i as the hammers descend, and cause the explosion of the cartridges, in the usual way. The breech-block is held down, when in firing position, by a catch, J, projecting from a turn-pin, K, at whose ends are thumb-lugs k, by pressure against which the catch J is retracted from the projection l, against which it engages, and the fore end of the block may then be swung up to expose the breech of the barrels. J' is a spring, tending to hold the catch J in the position shown. The projection l, against which the catch J engages, is upon the cartridge-extractor L. The front end l^1 of the cartridge-extractor extends up between the barrels, and engages against the inside of the flanges at the butt of the cartridges, so that when the extractor is drawn backward the shells are drawn back with it, and may then be drawn out of the barrels by hand. m is a vertical plate, sliding in dovetail groove at the end of the extractor. The plate m is fixed in position by a screw, m'. Against the lower end of the plate m rests the fore end of the spiral spring M, which tends to push the extractor forward into the position shown in the drawings. l^2 is a slot in the extractor, through which passes the curved lever N, fulcrumed at n. The upper end of the lever N rests against the hammer-hubs F^1. F^3 is a cam-projection on each hub, which cams, as the hammers are thrown back behind full-cock, come in contact with the upper end of the lever N, and force it backward against the rear end of the slot l^2, to draw back the extractor L.

When the breech-block is swung forward sufficiently to allow the shell-extractor to return to its forward position, a notch, n', of the lever N engages on projections f^2 in the ham-

mer-hubs, and prevents the further forward movement of the hammers and breech-block until sufficient pressure is brought upon the block to release the projections f^2 from the notch n'.

It will be understood that the shell-extractor L and the lever N are both drawn forward by the spring M, and both forced backward by the cams F^3, the latter movement taking place when the breech-block is drawn back to the extreme position. Upon the turn-pin K (of the catch J) are projections or teeth k, which, as the catch is thrown back, engage shoulders i^1 of the firing-pins and force them backward, so that their fore ends will not interfere with the upward movement of the forward end of the breech-block. i^2 is the usual spiral spring by which the firing-pin is drawn backward.

At the under side of the barrels is a rib, b, which is T-formed in transverse section, and in the stock is a groove, a, made to fit the rib b, as shown. The barrels are prevented from moving endwise on the stock by a screw, a^2, passing upward through the stock, and entering a recess, b', in the rib. The screw is turned by a handle, a^3. The rib-and-groove connection a b allows of the adjustment of the barrels on the stock to compensate for wear of the ends of the barrels and breech-block by the friction of these surfaces against each other. In making this adjustment the recess b' would be plugged and another recess made in the proper place. The arrangement allows the barrels to be removed from the stock at any time (for the cleaning or other purpose) without the use of any tool.

The operation is as follows: When the gun has been discharged, the thumb-lug k on either side may be forced upward, so as to retract the catch J. This movement forces back the firing-pins. The forward end of the breech-block may then be thrown upward and backward, and carries the hammers with it to full-cock; and on continuing to move the block backward the cams F^3 are brought in contact with the upper end of the lever N, and force back the lever to draw back the shell-extractor. The breech-block may then be moved forward until the catch f^2 enters the notch n'. The cartridge-shells may then be taken from the barrels and fresh cartridge-shells inserted. The breech-block is then returned to its firing position. As the breech-block moves forward the catch f^2 escapes from the notch n'. As the hammers reach the position of full-cock, their further forward movement is prevented by the sear projections of the triggers, and the breech-block may continue its forward movement. If it is desired that the forward movement of the hammers shall not be arrested at full-cock, but at half-cock, the sear is carried past the full-cock notch by a pivoted fly, as usual, or by other suitable means. It will be seen that the mainsprings act to throw up the breech-piece as soon as the catch J is retracted.

I claim—

1. The combination, with the breech-block I and hammer F, turning on a pin common to both, of mainspring G, attached to the block and connected to the hammer, substantially as set forth.

2. The combination, with the pivoted breech-block I, of the hammer F, external to the breech-block, turning on the same pivot, and placed in the course of the breech-block, so that the gun will be cocked by the act of opening the breech, in the manner explained.

3. The combination of sliding shell-extractor L, lever N, and cam F^3 with the breech-block I and hammer F, substantially as set forth.

4. The combination of the breech-block I, mainspring G, hammer F, having rib or projection f^2, and lever N, with notch n', substantially as and for the purpose set forth.

5. The combination of the turn pin K, thumb piece or lug k, and projection k' with the firing-pin i, substantially as set forth.

HENRY GOODMAN.

Witnesses:

SAML. KNIGHT,

LEWIS LOCKWOOD.