W. M. CLARK.

Breech-Loading Fire-Arm.

No. 198,080. Patented Dec. 11, 1877.

Fig 1

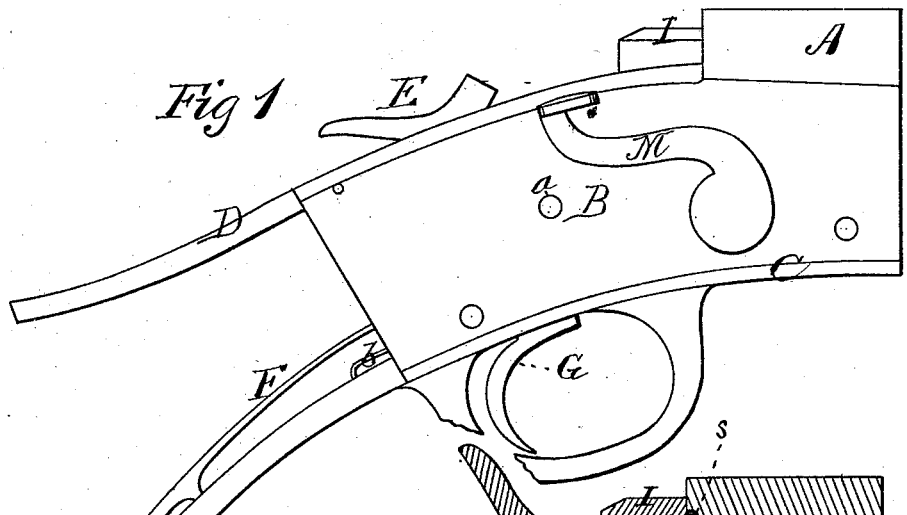


Fig 2

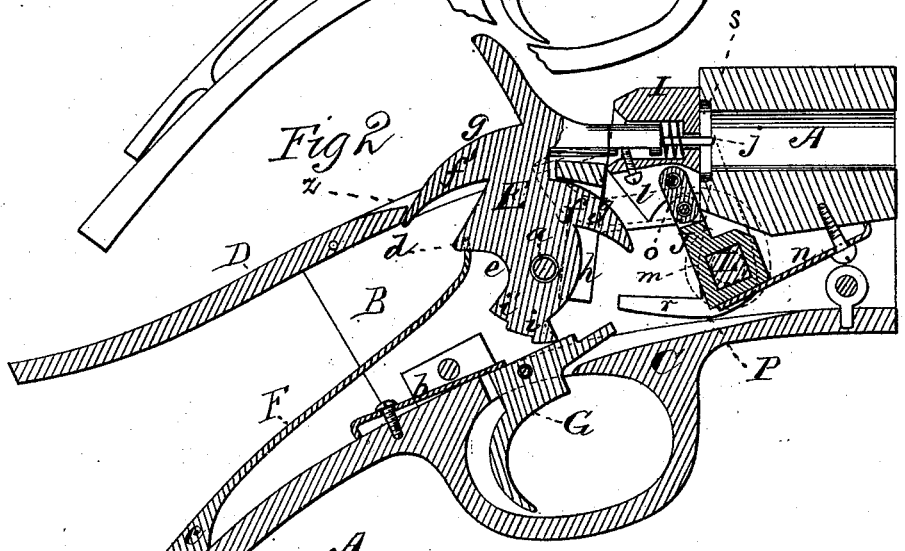
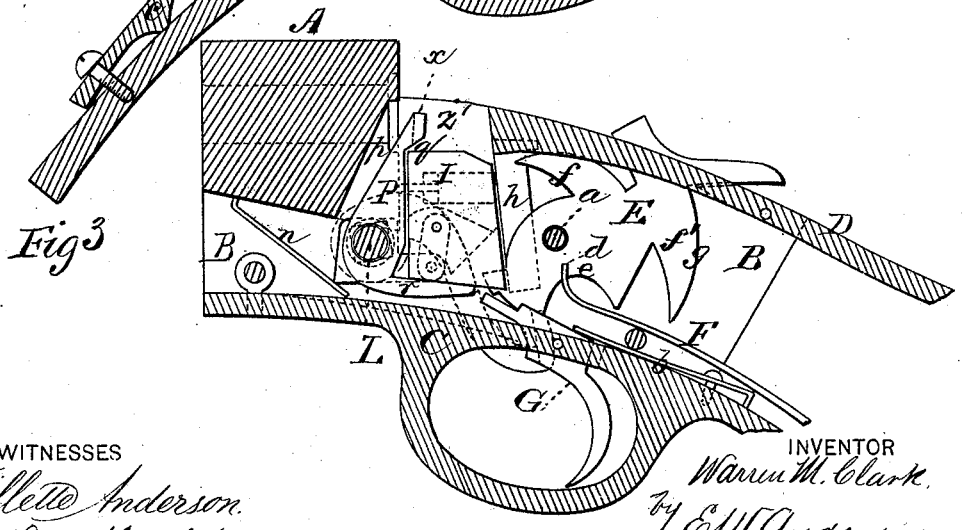


Fig 3



WITNESSES

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WARREN M. CLARK, OF WAVERLY, NEW YORK.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. **198,080**, dated December 11, 1877; application filed September 1, 1877.

To all whom it may concern:

Be it known that I, WARREN M. CLARK, of Waverly, in the county of Tioga and State of New York, have invented a new and valuable Improvement in Breech-Loading Fire-Arms; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a side view of this invention. Fig. 2 is a vertical central section. Fig. 3 is a reverse view in vertical section.

This invention has relation to improvements in breech-loading fire-arms; and the nature of the invention consists in combining with an open-ended barrel and a vertically-sliding breech-block, closing the said barrel and containing the firing-pin, a jointed lever pivoted at one end to the said block, and provided at the other end with a prismatic eye, a transverse shaft extending through the said eye, and a thumb-lever on said shaft, whereby the operation of opening the breech for the introduction of the cartridge is greatly facilitated, and the block is allowed to be raised or lowered without binding, as will be hereinafter more fully set forth.

In the annexed drawings, the letter A designates the barrel, rigidly secured to the cheek-plates B, which, together with the trigger-guard plate C and the tongue-plate D, constitute the lock-case. E represents the hammer, applied upon a screw, *a*, in the usual manner, and actuated by a mainspring, F. This hammer has the usual half and full cock notches *i i'*, which engage a trigger, G, pivoted, in the usual manner, in plate C, and maintained and held in proper position for engaging the said trigger by a spring, *b*, secured at one end to said plate, and bearing at the other upon the heel of the trigger. The mainspring F is secured to plate C at one end, and is held in an inclined position by a bearing-spur, *c*. The free end of this spring is provided with spaced guiding-lips *d*, between which the hammer-edge is received. The said spring is thereby kept at all times in proper position in contact with the hammer, and bears against an elliptically-curved edge, *e*, formed thereon. By this means, in the act of firing, the velocity of the hammer is greatly increased as it approaches the end of its stroke, owing to the increased leverage thus obtained.

It will be readily seen that this construction of the bearing on the cock enables me to dispense with the usual stirrup generally employed in attaining this increased leverage and velocity. The hammer works through an oblong curved slot in plate D, and is provided upon its front and rear edges, respectively, with projecting spurs *f f'*, the upper curved surfaces *g* of which are always in close contact with the end walls of the slot *z*, whether the hammer be at half or full cock, or in the position for firing, thereby excluding dust and other foreign matters from the hollow of the lock-case. In front of the slot *z* is a second slot, *z'*, in which is arranged the breech-block I, carrying a firing-pin, *j*, held off from the cartridge by means of a spring. The front face of this block is vertical, and its rear face beveled or inclined, as shown in Fig. 2, and the said block is regulated in its movements by guides *h*, having the same inclination with reference to the perpendicular as the rear edge of the said block. This block has upon its under side two spaced lateral lugs, *l*, between which is pivoted a section, *o*, of a jointed coupling, J, the other section of which is provided with an eye, *m*, upon its lower end, of prismatic form, through which a transverse shaft, L, having its bearings in the sides of the lock-case, extends, and provided with a bearing of like form. This shaft is actuated by means of a thumb-lever, M, applied upon one of its projecting ends, upon the right side of the lock-case. The heel of the arm bears upon a spring, *n*, rigidly secured to the under side of the barrel, or to the lock-case, which holds the said block stationary when it is in position for closing the breech of the barrel, and which materially aids in returning the said block into that position after the passage of the cartridge into the barrel. The breech is opened by depressing the lever M, and closed, after the insertion of a cartridge, by raising the said lever. When the block is raised it is firmly wedged by the inclined guides *h* against the end of the barrel, and is caused to form an air and gas tight joint therewith.

In the raising or lowering of the breech-block the jointed lever J allows these movements to be made in precisely the same plane; consequently there will be no binding or locking of the said block until it is wedged against the barrel by the guides aforesaid.

As shown in Fig. 3, the rear end of the barrel is recessed at *p*, to receive the upper arm of an angular extracting-lever, P, the other arm of which extends under the breech-block. This lever is pivoted or fulcrumed on the shaft L, and is provided at its upper end with an enlarged head having a beveled lower edge, *q*. This head is L-shaped in cross-section, and, when the block is raised to close the barrel, is flush with the flange-seat formed in the end of the barrel. When the thumb-lever M is depressed the breech-block is forced against the horizontal arm *r* of the angular ejector P, causing it to swing upon the shaft L, and throwing the vertical arm out of its seat or recess into the position shown in Fig. 3. The effect of this movement is to draw the empty cartridge-shell out of the barrel after firing. A new cartridge having been inserted into the barrel, the movement of the lever is reversed—that is, it is drawn up—causing the extractor to recede into its seat, and the breech-block to be raised into position for closing the barrel. This is accomplished by the breech-block coming into contact with the beveled under side of the head *x* of the ejector P.

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

1. The combination, with the barrel A and the vertically-sliding breech-block I, of the jointed lever J, having prismatic eye *m*, the rock-shaft L, extending through said eye, and the thumb-lever M at the side of the lock-case, substantially as specified.

2. The barrel A, having slot *z'* and guides *h*, the breech-block I, having a firing-pin, *j*, the jointed lever J, having eye *m*, the rock-shaft L, and the spring *n*, combined and operating substantially as set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

WARREN M. CLARK.

Witnesses:
WILLIAM F. BAIRD,
J. NEWTON DEXTER.