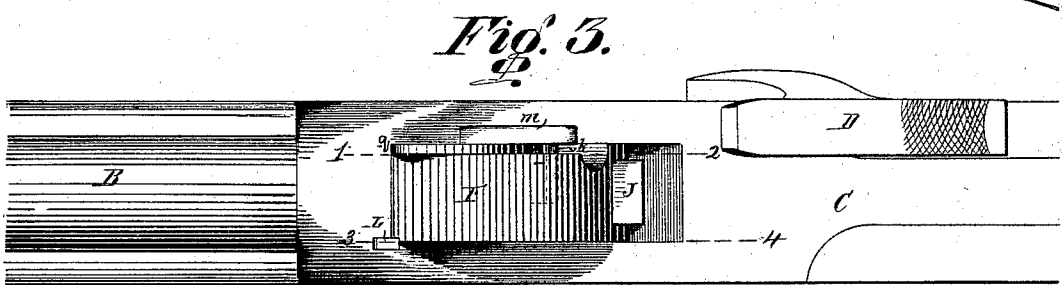
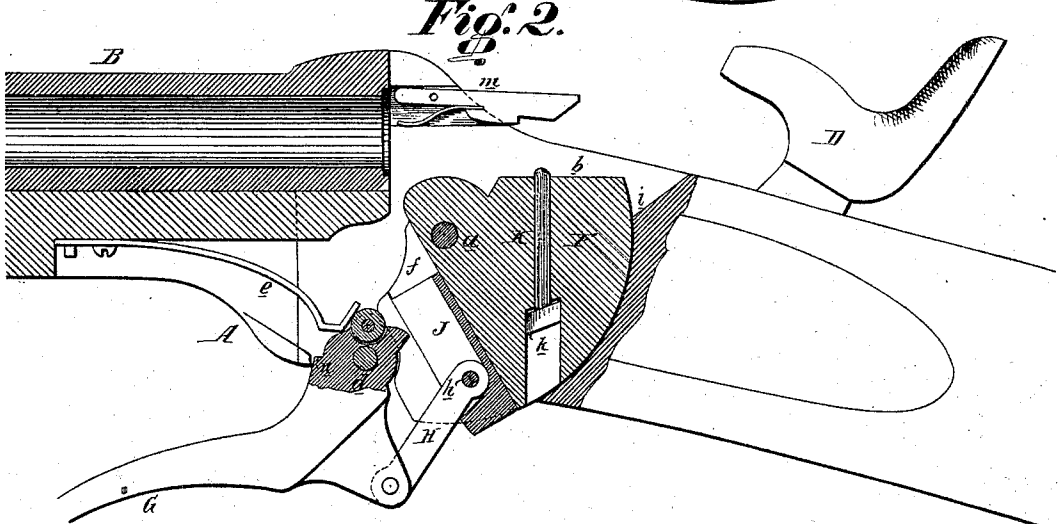
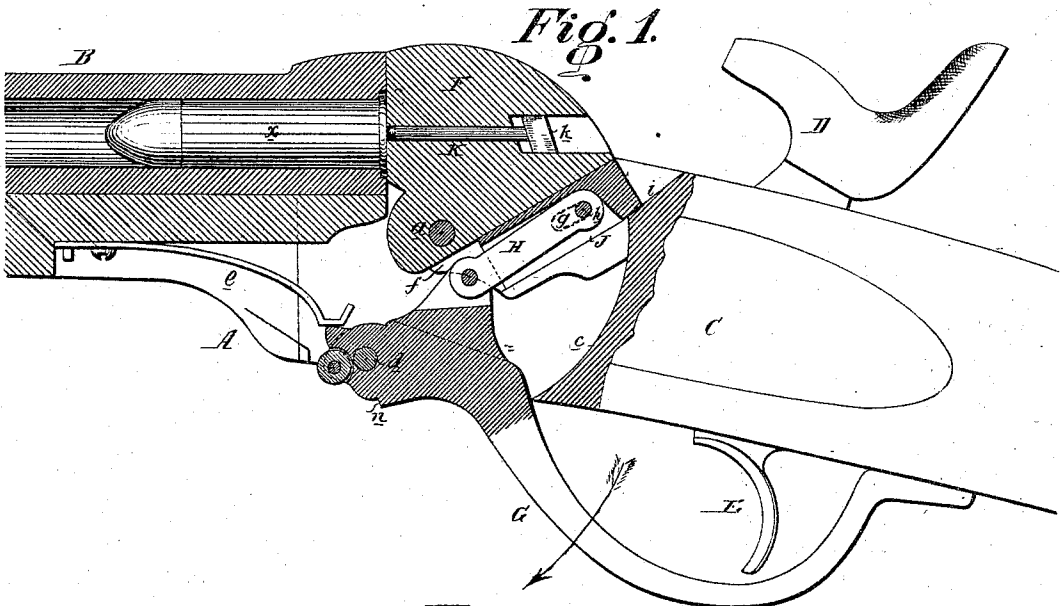


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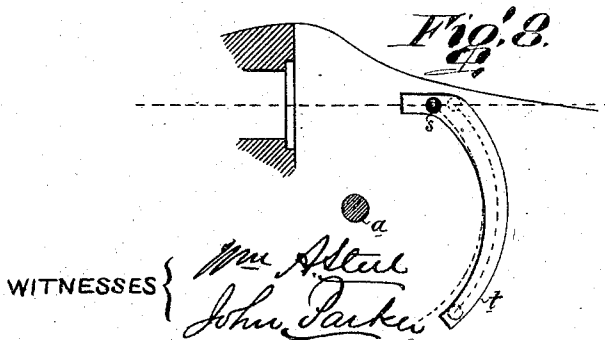
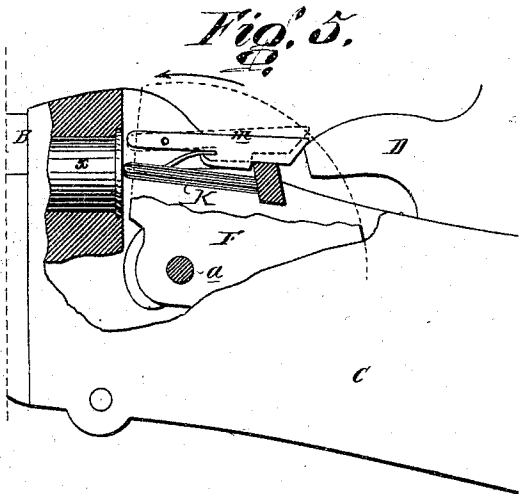
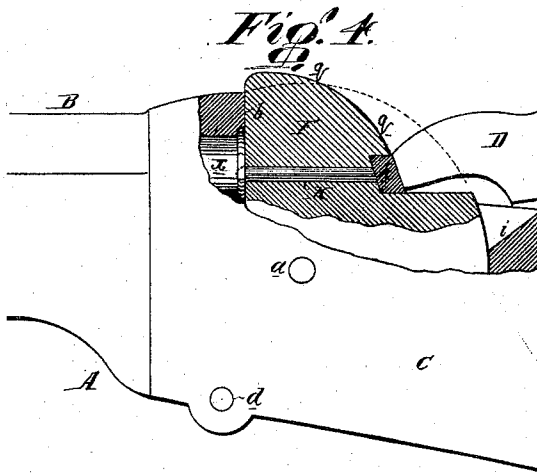
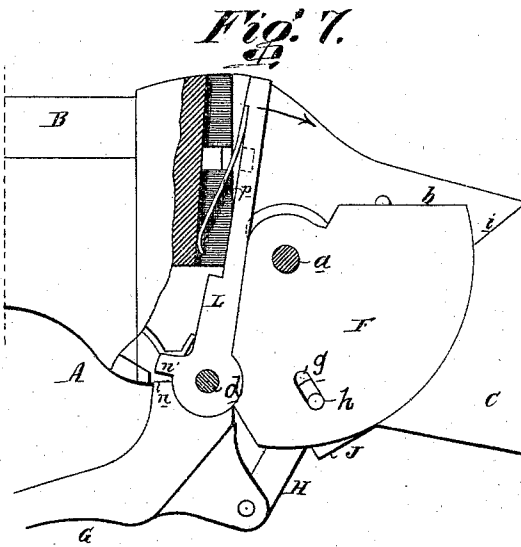
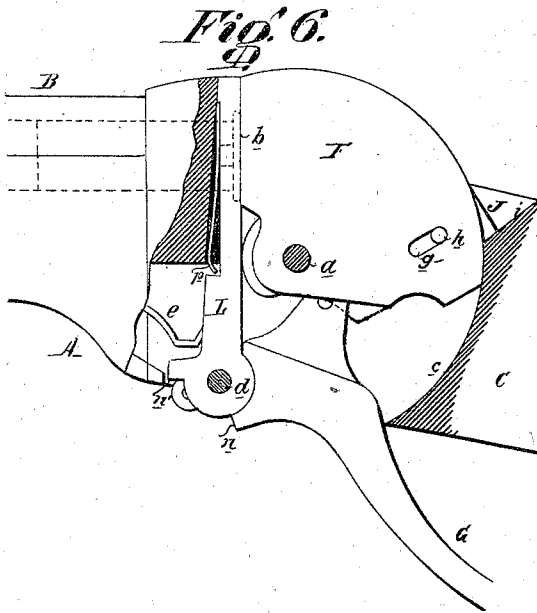
WITNESSES { *Mr. A. Steel*
John. Parker

Christian Sharps
by his Attor.
Amos and son.

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UNITED STATES PATENT OFFICE.

CHRISTIAN SHARPS, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. **137,625**, dated April 8, 1873; application filed July 14, 1871.

To all whom it may concern:

Be it known that I, CHRISTIAN SHARPS, of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented Improvements in Breech-Loading Fire-Arms, of which the following is a specification:

Nature and Object of my Invention.

My invention consists of certain improvements in breech-loading fire-arms, too fully explained hereafter to need preliminary description; the main object of my invention being the production of a safe breech-loading fire-arm, which can be rapidly loaded and discharged.

Description of the Accompanying Drawing.

Figure 1, Sheet 1, is a longitudinal sectional view of my improved breech-loading fire-arm; Fig. 2, the same, showing the breech opened; Fig. 3, a plan view of Fig. 1; Figs. 4 and 5, Sheet 2, sections on the line 1 2, Fig. 3, showing the hammer and firing-pin and safety device for preventing the accidental movement of the firing-pin and premature discharge of the cartridge; Figs. 6 and 7, sections on the line 3 4, Fig. 3, showing the operation of the cartridge-extractor; and Fig. 8, a view representing a modification of the safety device connected with the firing-pin.

General Description.

A represents the frame of the fire-arm, and B the barrel, the former being recessed at the rear of the barrel for the reception of the breech-piece and parts connected therewith, and being secured to or forming part of a stock, C, within which is arranged an ordinary gun-lock, of which D is the hammer and E the trigger. The breech-piece F consists of a solid block of metal, fitted snugly within the recess of the frame, and hinged or pivoted within the latter to a pin, *a*, which passes through the opposite sides of the frame, and permits the said breech to be raised and closed against the end of the barrel, as shown in Fig. 1, or to be thrown back from the same, as seen in Fig. 2. The breech-piece has a smooth, straight face, *b*, which fits accurately and closely against the rear of the barrel and flanged end of the cartridge; and the upper and rear portion of the said breech is

formed on a curve described from the center of the pin *a*, and is adapted to and arranged to turn in close proximity to the correspondingly-curved rear end *c* of the recess in the frame. A curved cam-like projection, *g*, Figs. 3 and 4, is formed on the side of the breech adjacent to the hammer for the purpose of acting upon and lifting the latter to the position of half-cock during the opening of the said breech, as will be more fully explained hereafter. A curved lever, G, bent to such a form as to serve as a trigger-guard, is hung to the pin *d* in the lower portion of the frame A beneath the breech-piece, and is acted on by a spring, *e*, secured to the frame, which tends to maintain it in the raised position shown in Fig. 1. This lever G is connected by a link, H, to a bolt, J, which is adapted to and has a limited sliding movement in a recess, *f*, formed for its reception in the rear portion of the breech-piece. The extent of this movement of the bolt is determined by slots *g g*, formed in the opposite sides of the breech-piece, and into which project the ends of the pin *h*, by which the said bolt is connected to the link.

When the breech is closed, as shown in Fig. 1, it is backed against the end of the barrel by means of the bolt J, which is then interposed between the said breech and an inclined shoulder, *i*, of the frame. In opening the breech by means of the lever G the bolt J is, during the first portion of the movement of the lever, drawn inward from the shoulder *i*, so as not to interfere with the movement of the said breech, as will be fully described hereafter.

The center-fire cartridge *x*, which is adapted, as usual, to the rear open end of the barrel, is exploded by means of a firing-pin, K, arranged to slide in an opening in the breech, and having, at its rear end, an inclined enlargement or head, *k*, which is struck and thrust forward by the descending hammer.

The premature discharge of the cartridge by means of the firing-pin is prevented by a dog, *m*, hung to the frame A, acted on by a suitable spring, and arranged to catch and hold back the said firing-pin until it is lifted, by means of the hammer, before the latter strikes the firing-pin. (See Figs. 4 and 5.)

The cartridge extractor or ejector consists of a

simple arm, L, adapted to a recess in the frame at one side and in front of the breech-piece, which is also slightly recessed for its reception, the said extractor being hung to the same pin *d* to which the operating-lever G is pivoted, and being operated in such a manner as to extract or eject the cartridge after the opening of the breech by means of a shoulder, *n*, on the said lever, which, during the last portion of the movement of the latter, strikes a projection, *n'*, of the extractor, and thus starts the same, the movement of the extractor being completed by means of a spring, *p*, with which it is provided. (See Figs. 6 and 7.)

In order that the operation of the fire-arm may be fully understood, let it be supposed that a cartridge has been introduced into the barrel, the breech closed and locked by means of the lever G and bolt J, and the hammer cocked. On the descent of the latter the inclined end of the safety catch or dog *m* will first be struck and raised, as shown in Fig. 5, so as to release the firing-pin, and the latter will then be struck and thrust forward by the hammer and the cartridge exploded. The recoil will be taken up by the solid metal of the breech, the bolt J, and frame A; these several parts, as best observed in Figs. 1 and 6, being in close contact with each other, and the whole being locked, and in a measure wedged together, by means of the bolt J, which prevents any possibility of the turning or opening of the breech, and, by taking up the whole force of the recoil, relieves the strain which would otherwise be brought to bear upon the pivoting and connecting pins of the breech, link, and operating-lever. After the discharge of the cartridge the lever G is lowered in the direction of the arrow, Fig. 1. During the first portion of this movement the bolt J will be drawn back clear of the shoulder *i* and into the recesses in the breech, so as to unlock the latter, and as soon as the pin *h* has passed entirely through the slots *g* of the breech, and the bolt has been thus drawn back, the said breech will, on the continuance of the movement of the lever in the same direction, be opened or thrown back, as shown in Fig. 2. The hammer will also, during this movement of the lever and breech-piece, be raised by the cam-like projection *q*

of the latter to the position of half-cock, and will not, therefore, offer any obstruction to the opening or closing of the said breech. During the last portion of the movement of the lever in the same direction, its shoulder *n* will strike the projection *n'* of the extractor L and turn the latter slightly in the direction of the arrow, Fig. 7, so as to start the cartridge-case, which is sometimes apt to stick in the barrel. The movement of the extractor in the same direction is completed by means of its spring *p*, which, after the starting of the cartridge-case by the positive movement of the operating-lever, suddenly ejects the said case, after which another loaded cartridge is inserted in the barrel. The breech is then closed by means of the operating-lever and locked, as before, by the bolt J, the breech as it is raised coming in contact with the extractor and pushing the same before it to its original position, Fig. 6.

Instead of employing the dog *m* as a device for holding back the firing-pin, the said dog may be dispensed with and the firing-pin be provided at one side with a lip, *s*, Fig. 8, adapted to an eccentric slot, *t*, formed in the frame A, the said lip, and consequently the firing-pin, being drawn back by passing through the eccentric slot when the breech is lowered or opened, and remaining drawn back when the said breech is closed, as indicated by the dotted lines.

Claims.

1. The curved cam-like projection *q* of the breech-piece, arranged to act upon and lift the hammer to the position of half-cock when the said breech-piece is opened, all substantially as specified.
2. The firing-pin K, so combined with and controlled by a cam-slot, *t*, dog *m*, or equivalent device, that it shall be drawn back by the same into the breech in the act of opening or closing the latter.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHRISTIAN SHARPS.

Witnesses:

WM. A. STEEL,
JOHN K. RUPERTUS.