

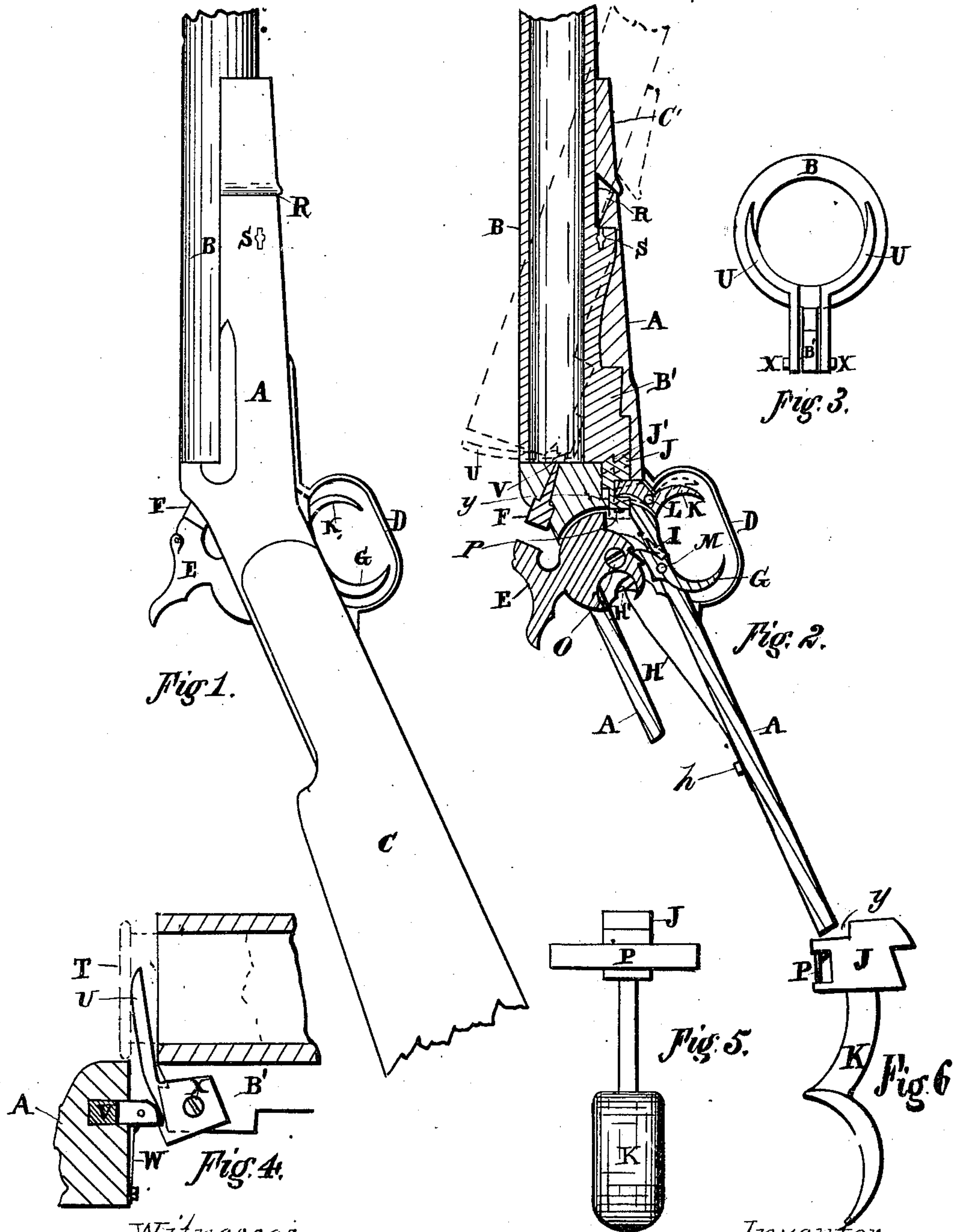
(No Model.)

2 Sheets—Sheet 1.

I. L. WATERS.
BREECH LOADING FIRE ARM.

No. 349,244.

Patented Sept. 14, 1886.



Witnesses
Minick H. Leonard
Jon A. Luther

Inventor
Isaac L. Waters

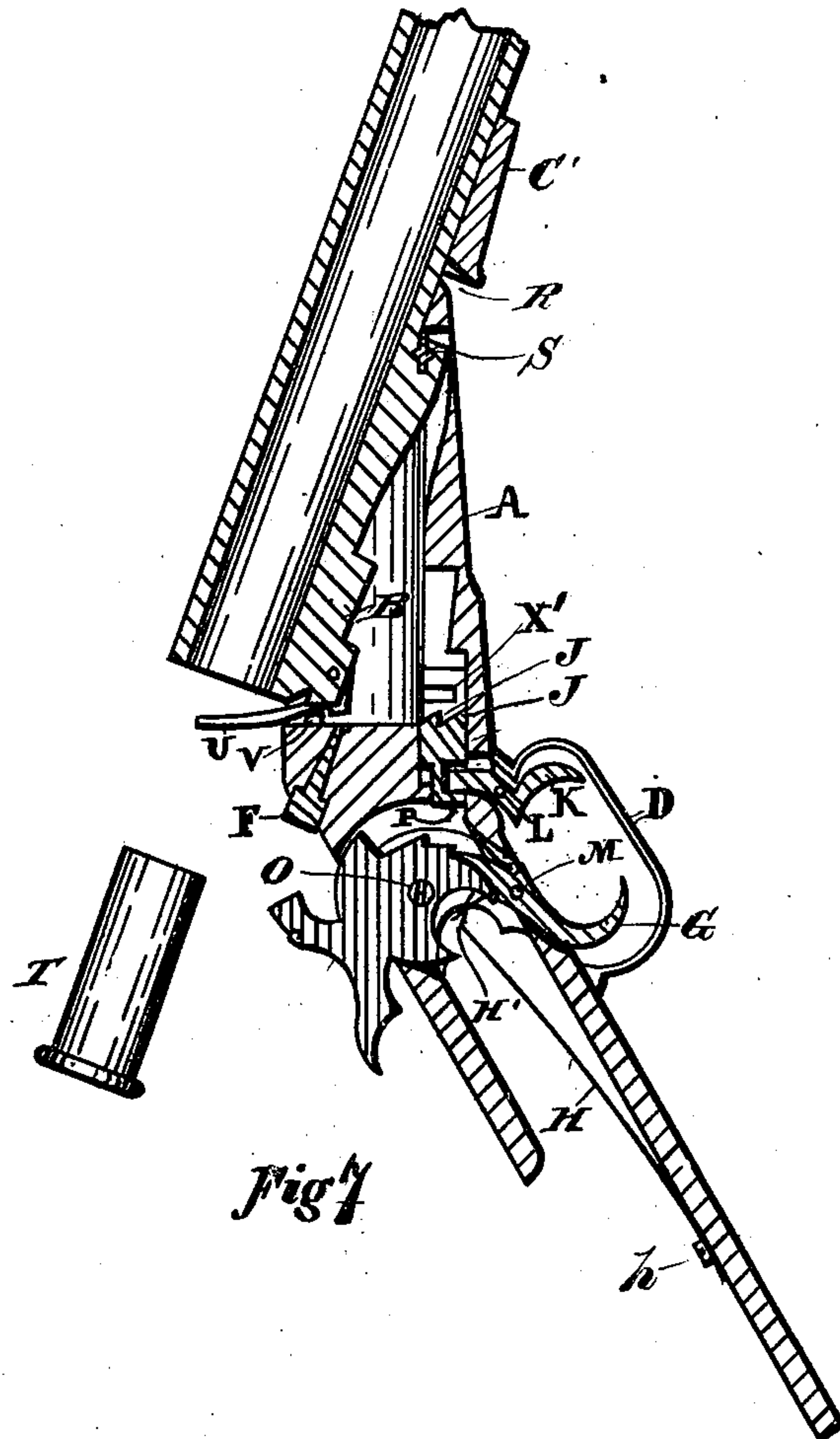
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UNITED STATES PATENT OFFICE.

ISAAC L. WATERS, OF SUTTON, MASSACHUSETTS.

BREECH-LOADING FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 349,244, dated September 14, 1886.

Application filed February 28, 1884. Serial No. 122,321. (No model.)

To all whom it may concern:

Be it known that I, ISAAC L. WATERS, of Sutton, in the county of Worcester and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Breech-Loading Fire-Arms; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and to the letters of reference marked thereon.

The object of this invention is to simplify the arrangement and cheapen the construction of the parts of a breech-loading fire-arm pertaining to the lever latching and unlatching of the hinged barrel, and also the parts relating to the extractor for extracting the shell after the piece has been discharged, and also the substantial manner in which the drop-joint of the fore-stock and frame is formed, so as not to have to remove the fore-stock to unhinge the barrel and take it out, by all of which improvements the fire-arm is more durable, safe in practice, and has the least number of motions in loading and firing.

My device consists, first, of a lever pivoted inside the guard in front of the trigger, having a front movement or action. The upper end of the lever is inserted in a mortise in the under side of the latch-bolt. There is a slightly-curved flat spring adjusted transversely in the frame at the rear end of the latch-bolt, which keeps the bolt in its latched position. The bolt is located in a groove in the frame, and latches in a notch in the lug at the rear end of the barrel. The rear end of the latch-bolt is beveled to allow action of the spring. Other forms of a spring may be used here.

My device consists, secondly, of the extractor formed in half-circles, which shut into corresponding grooves around the bore in the rear end of the barrel. The lower portion of the extractor is provided with a shank terminating with a thin foot-piece which is pivoted to the side of the lug of the barrel. There is a notch in the edge of the foot-piece in which the end of a small sliding bolt (located in a recess in the frame) engages when the barrel is unlatched and swung up, by which means the upper portion of the extractor is tripped out

against the rim of the shell. This bolt is held in its position for action in the slot or recess by a spring, having room to slide in and out.

My device consists, thirdly, of the fore-stock joint between the ends of the frame and the fore-stock, it being a drop-joint, which avoids the removal of the fore-stock from the barrel when it is unhinged and taken out of the frame.

The advantages obtained by these improvements are that the sportsman or gunner is enabled to cock, unlatch, raise the barrel, and extract the shell all in one motion, and with two motions reload the piece and latch it again in readiness for another discharge. I attain these objects by the mechanism and arrangement of the parts as illustrated in the accompanying drawings, in which—

Figure 1, Sheet 1, represents a perspective side view of the fire-arm. Fig. 2, Sheet 1, represents a sectional side view of the same, showing the location and arrangement of the several parts. The dotted lines represent the barrel unlatched at half-cock. Fig. 3, Sheet 1, represents an end view of the breech of the barrel, showing the shell-extractor inserted in the grooves around the bore of the same. Fig. 4 represents a sectional side view of that portion of the frame and barrel in which the extractor is adjusted, showing a side view of the extractor and the manner of its operation by means of the small bolt engaged in the notch in extracting the shell. Fig. 5, Sheet 1, represents an end view of the sliding latch-bolt, the spring, and lever combined. Fig. 6, Sheet 1, represents a sectional side view of the same; and Fig. 7, Sheet 2, represents a sectional side view of the fire-arm, showing the barrel unlatched at full-cock and shell extracted.

Similar letters refer to similar parts throughout the several views.

A denotes the frame, B the barrel, and B' the lugs attached to the under side of the barrel.

C denotes the rear and C' the fore stock.

D denotes the guard, and E the hammer.

F denotes the firing-plug, and G the trigger.

H denotes the main-spring, hinged to the hammer in a loop, H', and fastened to the frame at h. There is a flat spring, I, which holds the trigger G to the notches in the hammer E. The trigger is held in the frame on pivot M, and the hammer on pivot O. The

sliding latch-bolt J is located in a slot in the frame A at the rear end of the lug B', and latches in notch J' in the end of said lug, and is held in its latched position by the transverse flat spring P across the other end, which end is beveled to allow suitable action of the spring. The spring is adjusted in grooves at each end in the frame. The bolt J is unlatched by a forward movement of the lever K, which is adjusted on a pivot, L, inside the guard D, in front of the trigger G. The upper end of the lever K is inserted in a mortise in the under side of the bolt J, so that the gunner, with his thumb on the hammer E and the back of his forefinger against the lever K, can bring the hammer to full-cock and unlatch the bolt, both at the same time with one motion. The barrel is then allowed to swing up. The extractor U in the grooves in the end of the barrel is pivoted in the foot-piece at X to the side of lug B', and is carried with the breech of the barrel when it swings up or down, and when the barrel is latched the foot-piece rests in a space, X', cut out for it in the frame. There is a notch, V', in the heel of the foot-piece, in which the end of the small bolt V engages when the barrel is unlatched and swung up. This bolt is located in a recess in the frame, having room to slide in and out, so that when the barrel is swung up the bolt is forced out by the spring W to engage its end in the notch V', and, being held in the recess, serves as a lever to trip the extractor on the pivot X out of the grooves against the rim of the shell T, thus throwing it entirely free from the bore of the barrel, as shown in Fig. 7, Sheet 2, and when the barrel is swung down to be latched the bolt V leaves the notch and the end comes in contact with the shank portion of the extractor, and thus forces it back into the grooves in the end of the barrel. The lug on the under side of the barrel is formed in two parts, and, together with its square end, fits into three corresponding notches in the frame, and is hinged to the frame on the pivot or pin S, near the end of the lug, leaving a space, R, between the end of the lug and the fore-stock, which is covered by an extension of the end of the frame, which end is beveled to allow it to swing up under a corresponding lap-over of the end of the fore-stock, which is beveled and makes a close-fitting drop-joint between the ends of the frame and fore-stock when the barrel is latched. The notches in the frame and the lugs, together with the shoulder Y of the hammer E, which closes down at the end of the latch-bolt, all serve to keep the breech of the barrel firmly and securely in place when the barrel is discharged. The barrel is relieved from the shoulder Y when the hammer is raised to half-cock.

The advantage which I claim in my device for hinging the barrel to the frame is that it can be disconnected from the frame and taken out without disturbing or removing the fore-stock from the barrel by simply unlatching the barrel and slipping the pin S. This pin

is formed with flanges at each end. This form of hinging is also strong and durable.

Having thus fully shown and described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a breech-loading fire-arm, the combination, with the frame A and the barrel B, having a lug, B', on the under side of its breech end, of the extractor U, consisting of approximately half-circles adapted to fit in corresponding grooves formed in the breech end of the barrel, said extractor being provided with a shank and thin foot-piece pivoted to the sides of the lug B', a sliding bolt, V, located in the frame, and a spring, W, connected with said bolt, whereby said bolt will engage the edge of the foot-piece and actuate the extractor when the barrel is swung up, substantially as described.

2. In a breech-loading fire-arm, the combination of the notched frame A, the barrel B, having notched lug B', and the fore-stock C', said barrel being pivoted to the frame back of the forward end of the frame and lug, and said frame and fore-stock being provided with correspondingly-beveled extensions, thereby forming a close-fitting fore-stock drop-joint in which the space R, between the lug B' and fore-stock C', is covered by said beveled extensions when the barrel is latched, and permitting the barrel to be disconnected from the frame without moving the fore-stock, substantially as described.

3. In a breech-loading fire-arm, the combination of the grooved frame A, the barrel B, provided on its inner side with a lug, B', having a notched rear end, the sliding latch-bolt J, located in the grooved frame, and provided on its upper side with a notch, Y, and on its lower side with a mortise, the forward end of said bolt being notched to fit the rear end of the barrel-lug B', a spring, P, for holding said latch-bolt in engagement with the notched rear end of said lug, the hammer E, adapted to engage the notch Y in the upper side of the latch-bolt, and the lever K, pivoted within the trigger-guard in front of the trigger, and having its upper end engaged in the mortise in said latch-bolt, substantially as described.

4. In a breech-loading fire-arm, the combination of the frame A, the pivoted barrel B, having a notched lug, B', adapted to engage with corresponding notches in said frame, the notched and mortised latch-bolt J, located in a groove in the frame, and adapted to engage the rear end of said lug B', the spring P, the hammer E, adapted to engage said latch-bolt, the trigger G, spring I, mainspring H, and a lever, K, pivoted within the trigger-guard in front of the trigger and engaging the mortised latch-bolt, substantially as described.

Worcester, Mass., February 22, 1885.

ISAAC L. WATERS.

Witnesses

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