No. 645,292. Patented Mar. 13, 1900.

J. J. GREENOUGH.

RAPID FIRE BREECH LOADING FIREARM.

(Application filed July 27, 1899.)

(No Model.)

Fig. 1.

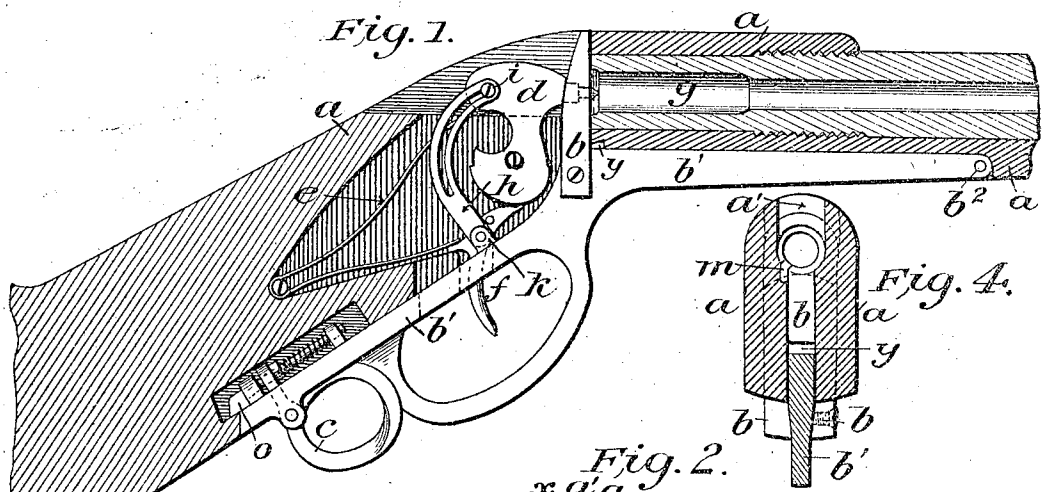


Fig. 4.

Fig. 2.

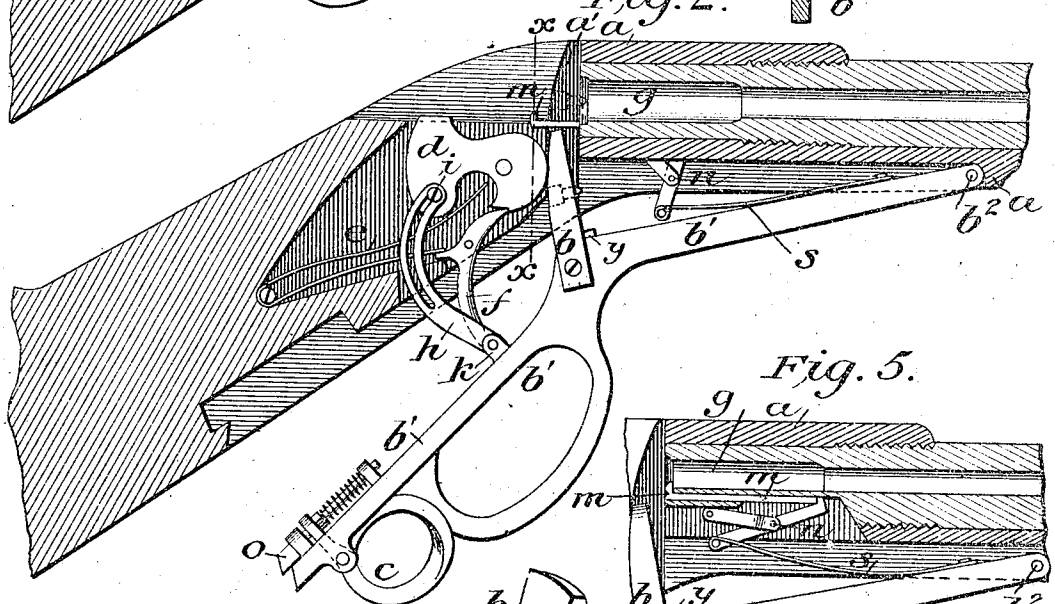
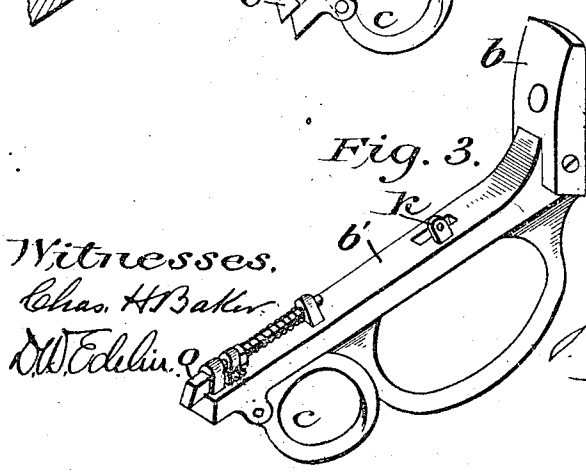


Fig. 5.

Fig. 3.



Witnesses.

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JOHN JAMES GREENOUGH, OF WASHINGTON, DISTRICT OF COLUMBIA.

RAPID-FIRE BREECH-LOADING FIREARM.

SPECIFICATION forming part of Letters Patent No. 645,292, dated March 13, 1900.

Application filed July 27, 1899. Serial No. 725,331. (No model.)

To all whom it may concern:

Be it known that I, JOHN JAMES GREENOUGH, a citizen of the United States, residing in Washington, District of Columbia, have invented certain new and useful Improvements in Breech-Loading Firearms, of which the following is a description illustrated by the annexed drawings and a specification of claims to the devices set forth.

The objects of my invention are simplicity and cheapness of construction and facility of manipulation in rapid firing with safety against accidents.

In the drawings, Figure 1 is a longitudinal section of the arm with the breech-block closed; Fig. 2, the same view with the parts in position for loading; Fig. 3, a perspective view of the breech-block and lever detached; Fig. 4, a cross-section of the breech on the dotted line $x\,x$ of Fig. 2 with the breech-block down. Fig. 5 is a longitudinal section showing the shell-extractor and its connections.

The same parts are designated by the same letters in all the figures.

The frame a is a metal piece in which the gun-barrel g is affixed and so shaped as to leave a space a' in rear of the open end of the barrel, forming a chamber to receive the breech-block that closes the end of the barrel and opens to remove the empty shell and receive a loaded one. The front face of the chamber a' is perpendicular to the open end of the bore. The opposite face is concave on a curve concentric with the pivot b^2, hereinafter named. The sides of the chamber are parallel, and in it the breech-block slides, filling it tightly when closed, as seen in Fig. 1. The breech-block b is a plano-convex wedge, of metal, with parallel sides, that fits into and fills the chamber a' and covers the rear end of the bore, against which it is wedged tightly. This breech-block is affixed permanently to a metal bar or lever b'. I prefer connecting them by a dovetail joint and inserting a key y or set-screw, by which the block b can be adjusted in case of expansion by heat in firing. The lever b' is pivoted beneath the barrel at b^2 in a groove in the breech-frame a. It extends backward beyond the breech-block and trigger-guard, that may be attached to and form a part of it as a brace. The rear end of this lever is furnished with a spring-bolt o, that locks it to the frame a. A thumb-piece c, of convenient shape, is pivoted to the lever, which when forced down frees the spring-bolt o and throws out the lever b' by a single impulse. The hammer d, which may be furnished with a thumb-piece (not shown in the drawings) to cock it independent of the bridle, the trigger f, and mainspring e are of ordinary construction for either rim or center fire. They are pivoted in the frame a, properly recessed to receive them. A link or bridle h is used to cock the hammer automatically. It is joined by a pivot-pin to the lever at its lower end at k and extends up to a pin i on the hammer, as shown in Fig. 1. This bridle has a slot in it, preferably of curved form concentric with the pivot of the hammer, so that when the pin i moves through it in firing the bridle remains stationary.

When the parts are in the position of Fig. 1, by bearing down the thumb-piece c the catch o is freed and the lever b' opened outward, as in Fig. 2, lowering the breech-block and opening the breech. At the same time the hammer is cocked by the bridle f. When the shell is inserted, the lever, bridle, and breech-block are returned to the first position by a single motion, leaving the hammer cocked, ready to fire on pulling the trigger.

The shell-extractor is represented at Fig. 5, wherein m is a bar that slides in the frame a parallel with the barrel. Its rear end is formed to fit under the rim of a shell and is so shaped as to permit the loaded shell to be readily inserted. The bar m extends forward into a chamber in the frame over lever b'. (See Fig. 5.) To actuate the extractor m, a toggle-joint n is used, consisting of a long and a short arm, the latter being pivoted to the long one at its center and to the permanent frame a. On the forward end of the long arm there is a catch that when the lever b' is closed engages with the extractor m, the arms being nearly in line with each other. The opposite end of the long arm is connected with a spring s, affixed to the lever b', so that when the lever is thrown out the spring s bears on the rear end of the long arm n, causing the catch on the opposite end to bear against the shell-extractor, pressing it back and bringing the shell in contact with the breech-block, and

when that has descended below the shell it is freed to be ejected by the spring. This action releases the catch from the extractor, which can then be readily retracted by the insertion of a loaded shell or automatically by a spring.

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

1. A plano-convex wedge-shaped breech-block b' combined with the chamber a' into which it slides and wedges as and for the purposes specified.

2. In a breech-loading firearm a hammer and mainspring in a recess in rear of the breech-block as described, combined with a lever of the second class by a pin or projection on the side of the hammer and a link attached to the lever moving the hammer in conjunction with the breech-block as and for the purposes set forth in the description.

3. In a breech-loading firearm the combination of a hammer its mainspring an operating-lever a breech-block carried by said operating-lever and a connection between the hammer and the said lever comprising a segmental arm or bridle pivoted to the operating-lever with a slot therein in which a pin carried by the hammer works concentric with the journal of the hammer substantially as herein described.

4. In a breech-loading firearm the combination of the breech-block with an operating-lever as described by which it is rendered adjustable to compensate for expansion and contraction substantially as and for the purposes set forth.

5. The combination of the toggle-joint n and spring s with the shell-extractor m and lever b' as and for the purposes described.

6. The toggle n in combination with a shell-extractor for forcing out a shell after it is exploded.

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Witnesses:
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