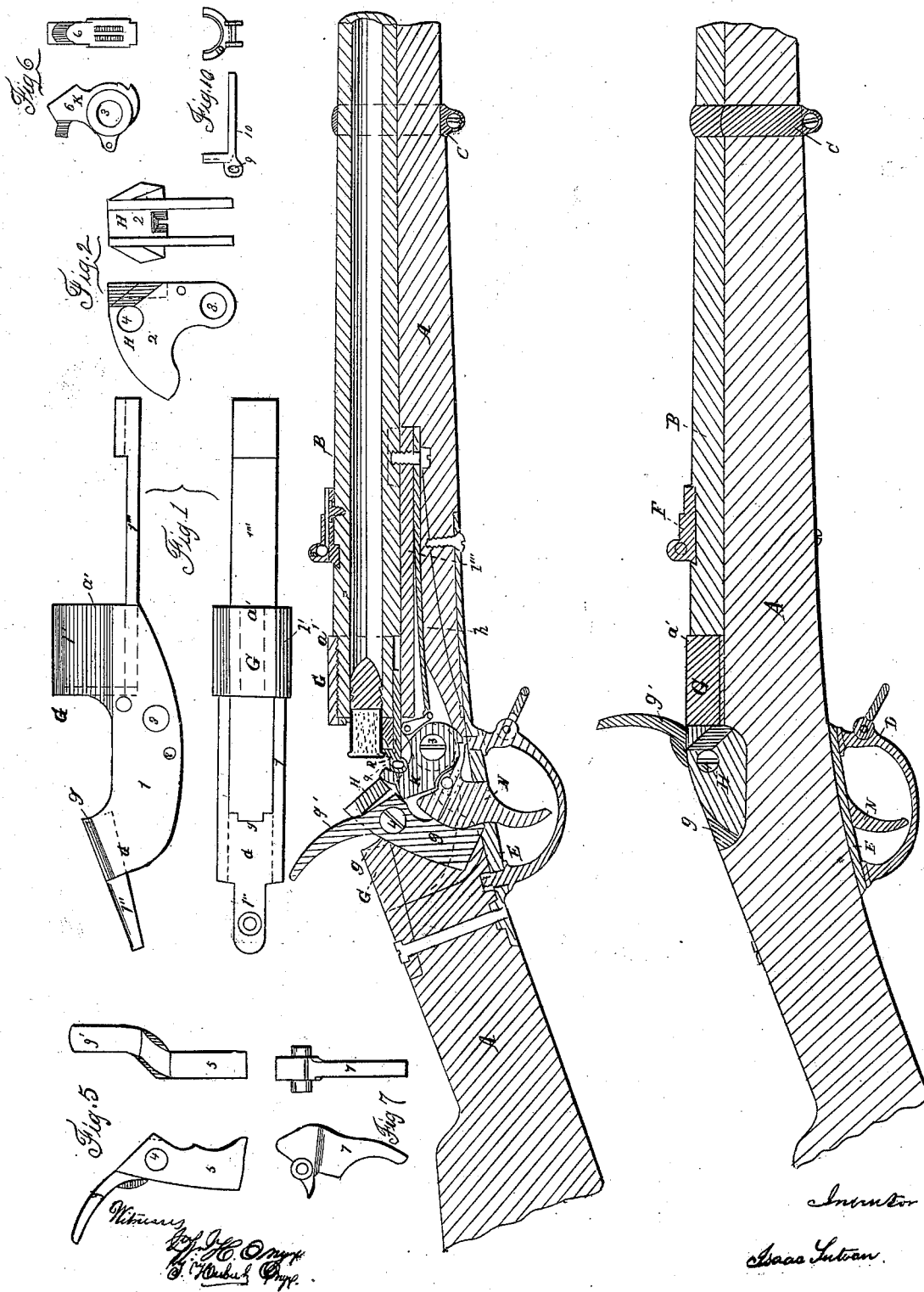


I. SUTVAN.

Breech-Loading Fire-Arm.

No. 46,866.

Patented Mar. 14, 1865.



UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 46,866, dated March 1st, 1865.

To all whom it may concern:

Be it known that I, ISAAC SUTVAN, draftsman, of Bridesburg, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Breech-Loading Fire-Arms; and I do hereby declare that the following is a full and exact description thereof, to wit:

It is unnecessary for me to describe the musket, carbine, rifle, &c., as they are well known, and therefore I will proceed to describe more particularly the breech-loading attachment, which can readily be attached to most of these fire-arms.

In my improvement the retracting and rotating breech-piece is made sufficiently thick to admit of a slot through it, save at the face, and in this slot are placed the locking brace or latch, the hammer, and the head of the trigger.

My invention consists in so embracing and arranging their several parts within the movable breech-plate as to form a simple and efficient arm; secondly, in an improved arrangement for withdrawing the cartridge after the explosion, and, thirdly, in a combination of parts so arranged as to prevent the premature explosion of the cartridge before the breech-piece is home or it is locked in the proper position for firing.

In the drawings accompanying this and forming part of this specification, A A A represent the stock of the fire-arm; B B, the barrel; C C, the band which attaches the barrel to the stock; D D, the trigger guard or bow; E E, the guard-plate; F F, the rear sight; G G, the frame into which the barrel is screwed, and which contains the breech-loading arrangement, with the lock and trigger, and which is more clearly shown in side and top elevations, Figure 1. This frame is made of any suitable metal, having two cheeks extending backward toward the butt of the gun from the hub *a'*, into which the barrel is screwed. The breech rotates between these cheeks, which are united farther back by the tang-piece *g*, against which the locking-latch abuts. From the lower part of the hub *G* a tongue, *I''*, extends toward the muzzle of the gun, for the purpose of more securely attaching the frame to the barrel, and also for holding the end of the mainspring.

The breech-piece H H is of sufficient width

to cover the bore or end of the barrel, having cheeks or wings extending rearward from its face and at right angles to the same, their tops forming arcs of a circle, as seen at Fig. 2, from 3, as a center. This breech-piece is pivoted to the cheeks of the frame at 3, and swings freely upon the same to and from the end of the barrel.

J J is the locking brace or latch, having a finger-piece or comb, *J' J'*, at its front top end, projecting at nearly right angles therefrom, which serves to depress the bolt, retract the breech, as also as a support in carrying the arm, while the lower surface of the brace is of a peculiar shape, to be acted upon by the hammer and trigger. It is shown in Fig. 5. This latch is hung on a pivot at 4 4 4, near and under its finger-piece, and between the cheeks of the breech-piece H H, and it acts as a brace between the front end of said breech-piece and the tang or frame at *g g*, securely holding the breech-piece firmly against the end of the barrel.

The tumbler is made in the ordinary manner, having the hammer K attached to it as one piece. The nose of this latter is wedge-shaped, as seen in Fig. 6, fitting loosely into a wedge-shaped slot cut in the lower face of the breech-piece, extending through it, so that the nose of the hammer may strike the cartridge. The top of the hammer has an inclined plane or a projection which acts upon the lower face of the latch J, which forces the said latch into its locking position before the hammer can strike the cartridge. The hammer is hung on the same pivot as the breech-piece, and between its cheeks, as the latch is.

The mainspring L is secured at its front end to the tongue of the frame, and its other end attached to the tumbler-hammer in the usual way by the link M.

The trigger and sear N N are made in one piece, and perform the same functions as in all other guns, having, however, a curved or circular back (shown more particularly in Fig. 7) for the purpose of guiding the latch J in its downward movement from off the hammer K. The sear-trigger is pivoted at 8 8 8, and hung between the cheeks of the frame G, and is held up to the tumbler-hammer by the spring P, which is attached to the guard-plate E.

The rear end of the cartridge-retractor R is the segment of a circle of suitable dimensions to embrace the cartridge in front of its flange and fill a corresponding cut in the end of the barrel, and having a tongue projecting forward under the barrel, moving in a slot in the same, and on the lower rear end there is a projection having an oblong slot in it. A pivot, 9 9, connects the retractor to the rotating breech-piece which operates it. (See Fig. 10.)

The operation of the improvement is as follows: The breech being closed, the finger-piece is drawn back. This depresses the rear end of the latch, releases it from the tang abutment, and the rear lower end comes down on the circular part of the trigger, and by continuing to draw back the finger-piece the breech-piece swings back on its pivot from the end of the barrel, drawing with it the hammer and the cartridge-retractor, so that by one operation the latch or brace is removed, the breech opened, the hammer cocked, and the old cartridge-case removed. By pressing the finger-piece in the opposite direction, the breech is swung up to the end of the barrel, the latch or brace placed in position, and the cartridge-retractor returned, leaving the hammer at full-cock, ready for firing. If the latch or brace should be depressed by accident, thereby freeing the breech from the end of the barrel, the forward movement of the hammer will replace it by means of the projection or inclined planes on the top of the hammer acting on the under side of the latch before the hammer reaches and explodes the cartridge.

It will be seen when the breech is open the

latch fits in snugly behind the trigger, preventing any movement of the same or the hammer. In closing the breech this latch rides easily over both without disturbing them.

I am aware that a pivoted breech-piece having a vibrating brace or latch inserted in a recessed or forked breech-piece was heretofore patented by Pyrsé and Redman in England, and also that a vibrating breech-piece and a latch and hammer placed in recesses of said vibrating breech-piece was also patented by Andrew Gillet in 1864.

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

1. The combination of a vibrating breech-piece and a vibrating latch and hammer when said vibrating latch and hammer are both placed in a fork or recess in the movable breech-piece.

2. The safety device for locking the latch-brace by means of the projection or inclined planes on the top of the hammer acting on the under surface of the latch on its forward movement, thus securely locking the breech before the hammer can explode the cartridge.

3. The action of the latch upon the trigger and hammer when the breech is open, preventing any forward movement of either before the breech is closed, and relieving itself from the top of the trigger, substantially as described.

ISAAC SUTVAN. [L. s.]

Witnesses:

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T. HERBERT ONYX.