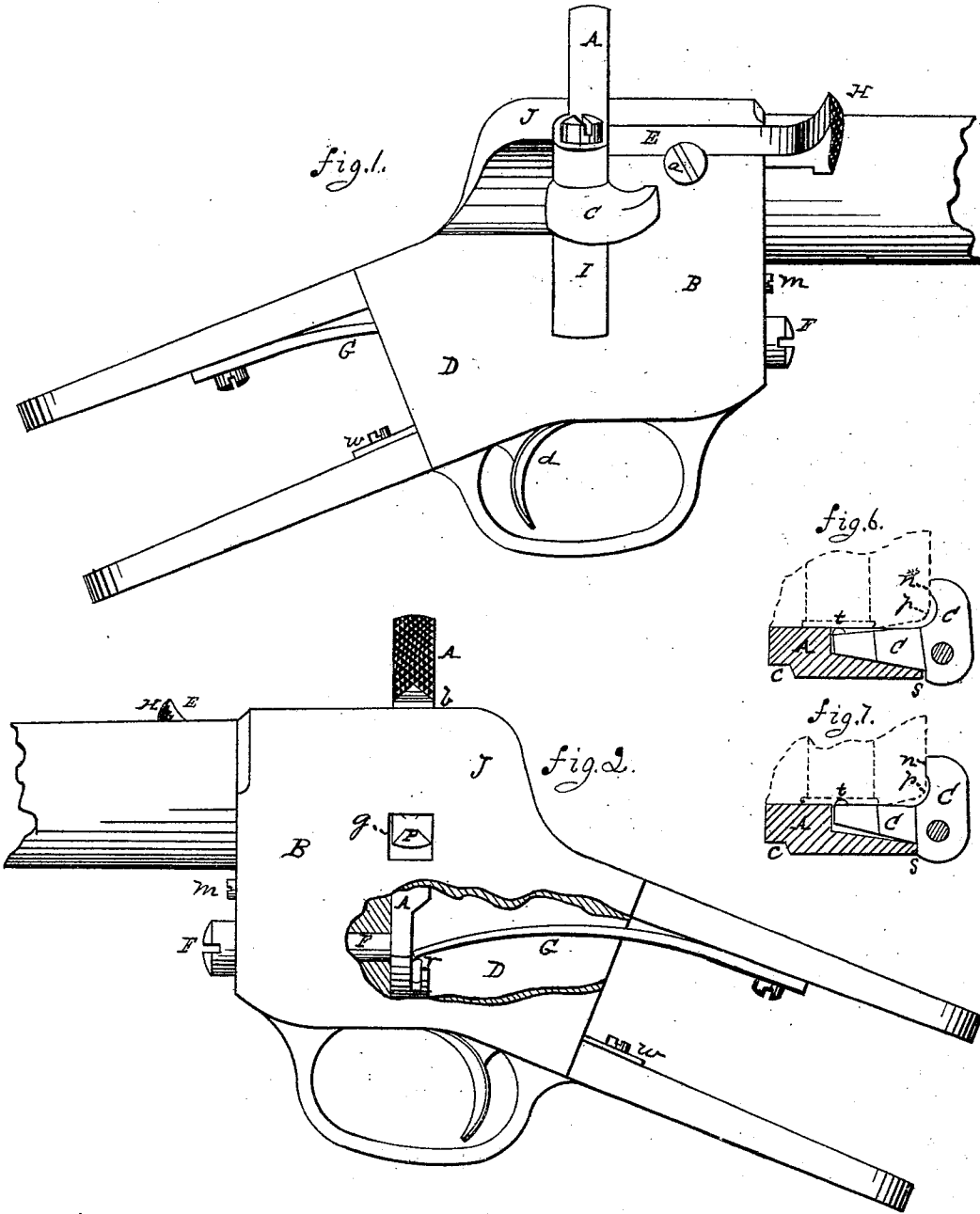


O. SNELL.
Breech-Loading Fire-Arms.

No. 152,957.

Patented July 14, 1874.



Witnesses;

Edwin Jack,
W. H. Lygman

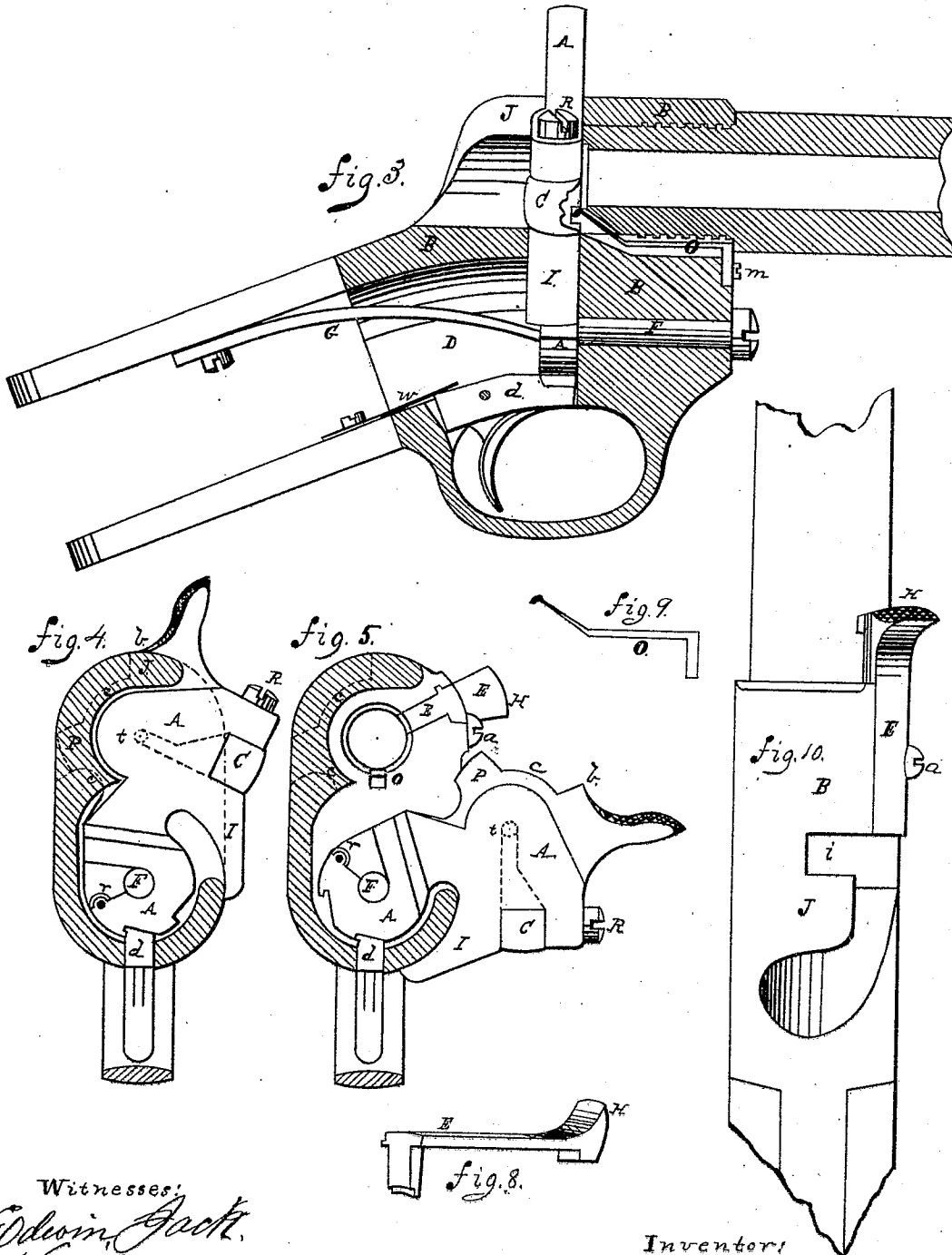
Inventor:

Oscar Snell

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Witnesses:
Edwin Gault,
W. H. Luyman

Inventor:
Oscar Snell

UNITED STATES PATENT OFFICE.

OSCAR SNELL, OF WILLIAMSBURG, OHIO, ASSIGNOR OF ONE-HALF HIS RIGHT
TO HIRAM A. KEITH, OF SPRINGFIELD, MASSACHUSETTS.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. **152,957**, dated July 14, 1874; application filed
October 2, 1873.

To all whom it may concern :

Be it known that I, OSCAR SNELL, of Williamsburg, in the county of Clermont and State of Ohio, have invented an Improvement in Breech-Loading Fire-Arms, of which the following is a specification:

The object of my invention is to produce a safe and durable fire-arm, which shall combine great strength and simplicity of mechanism with maximum rapidity of fire.

In the drawings, Figure 1 is a right-side view. Fig. 2 is a left-side view. Fig. 3 is a longitudinal section of the breech-frame and barrel. Figs. 4 and 5 are transverse sections of breech-frame, just back of the hammer. Figs. 6 and 7 are sectional views, showing the hammer and elbow exploding-lever. Fig. 8 is a perspective view of the ejector. Fig. 9 is a side view of the cartridge-retaining spring. Fig. 10 is a top view of the breech-frame and its upper extension with hammer-notch.

Similar letters of reference indicate corresponding parts.

In this invention, the hammer A is hung to the breech-frame B, below and in front of the breech of the barrel; it being constructed so as to move upward and sidewise at a right angle to the bore of the gun. The hammer A has an elbow exploding-lever, C, hinged to its right side, which collides with the breech-frame B, thus exploding the cartridge; the hammer, in the meantime, acting as a breech or recoil piece. The breech-frame B is slotted at the top and right side of the spring-box D, to allow the hammer motion sufficient so as not to interfere with the insertion or rejection of cartridges. The breech-frame, in front and to the right of the mouth of the barrel, is open, to allow following the cartridges to their seat in loading. The left upper extension J of the breech-frame is notched at *i*, Fig. 10, to receive the upper left side *b* of the hammer, to assist in supporting the same during a discharge. The screw F is firmly attached to the hammer and turns with it. E, Fig. 1, is a view of the ejector in place. *a* is the screw for holding the same. Fig. 5 shows the manner of attaching the ejector. Fig. 8

is a perspective view, showing conformity. Figs. 4 and 5 are rear views of the hammer in two positions, viz., closed and cocked. The hammer has a projection at P, which passes through the left side of the breech-frame. The left edge *c* of the hammer is thinner than in the center; this edge fits into a square groove cut into the left side of the breech-frame, as shown by the dotted lines in Figs. 4 and 5, at *c*; this is to prevent any escape of gas rearward should a cartridge-head burst, confining it to force out at *g*, Fig. 2, at a right angle to the barrel. The hammer is provided with an addition, I, at its right edge, which slides over the outside bottom of the breech-frame. (See Figs. 4 and 5.) This is used to cover the slot in the spring-box D, and to exclude dirt from the mechanism, and is formed to suit the circular motion of the hammer. The elbow exploding-lever C is secured to the hammer and turns on the screw R. The shape of the lever is shown by the dotted lines on the hammer, it being arranged for exploding central-fire cartridges. The action of this lever is shown at Figs. 6 and 7, just before and after striking. The exploding-lever being hinged to the right edge of the hammer, it is carried out from the breech in the act of cocking. In order to prevent the lever catching on the corner of the breech-frame in closing the hammer, the shoulder *s* is provided on its rear side, which prevents it turning more than is necessary to explode the cartridge. This shoulder and the bottom of the lever-slot in the hammer gauge the extent of the inward and outward motion of the lever C, thus taking the place of a spring, and not so easily disarranged.

The principle upon which this exploding-lever acts is as follows: The hammer having carried it out from the breech-frame in cocking, it is brought back with great force by the pressure of the mainspring on the hammer. The point at *n* collides first with the side of the breech-frame, after which the hammer moves on into its seat, carrying the screw R with the center of the lever. The end of the lever at *t*, which strikes the cartridge, instead of being carried

along with the hammer into its seat, now moves in the periphery of a circle having *n* as its center, thus striking the cartridge a direct blow, the same as if it were hinged at the point *n*.

It will be noticed that as the exploding-lever is hinged at a right angle to the motion of the hammer, and as the point *n* strikes the breech-frame a direct blow, it follows that the point *t* must also strike directly, and not glancingly; thus making the explosion of the cartridge a surety with the closing of the breech. When the breech is open, the cartridge is prevented from falling out by the retaining-spring *o*, Figs. 3, 5, and 9; this is secured to the front of the breech-frame by means of a screw, *m*, Fig. 3. The point which bears against the cartridge-heads is made with a long bevel at the extreme end, to allow the cartridges an easy entrance, while the inside is beveled very short, better to retain them after having been pushed to their seat. The mainspring is shown at *G*, Figs. 2 and 3; it is secured to the upper tang of the breech-frame, and takes bearing on a small roller, *r*, Figs. 2, 4, and 5, at the left side of the hammer. The trigger *d* and its spring *w* are shown in Fig. 3.

The operation of loading, firing, and ejecting shells is as follows: After the arm has been brought to a nearly horizontal position, with the butt on the right hip and the left hand at the lower band, the hammer is cocked

by being drawn over to the right by the thumb of the right hand; this opens the cartridge-chamber, a cartridge is inserted and pushed into its seat and retained by the spring *o*. By pressing the trigger, the hammer is released, and, by the action of the mainspring, closes the breech; the exploding-lever colliding against the side of the breech-frame discharges the arm, as hereinbefore described. The arm is again brought to the position of load, after which the breech is opened and the shell extracted by placing the middle fingers of the right hand against the ejector at *H*, Fig. 1, and pressing toward the hammer. The ejector is pushed back into its place by the insertion of a new cartridge.

It is obvious that as the shell is ejected simultaneously with the full opening of the breech, the two motions are practically one.

After having described this invention, what I claim as new and of my invention is—

The laterally-swinging breech-block *A*, carrying the elbow exploding lever or hammer *C*, the other parts of the mechanism being arranged to operate substantially as shown and described.

OSCAR SNELL.

Witnesses:

W. M. TERYMAN,
EDWIN JACK.