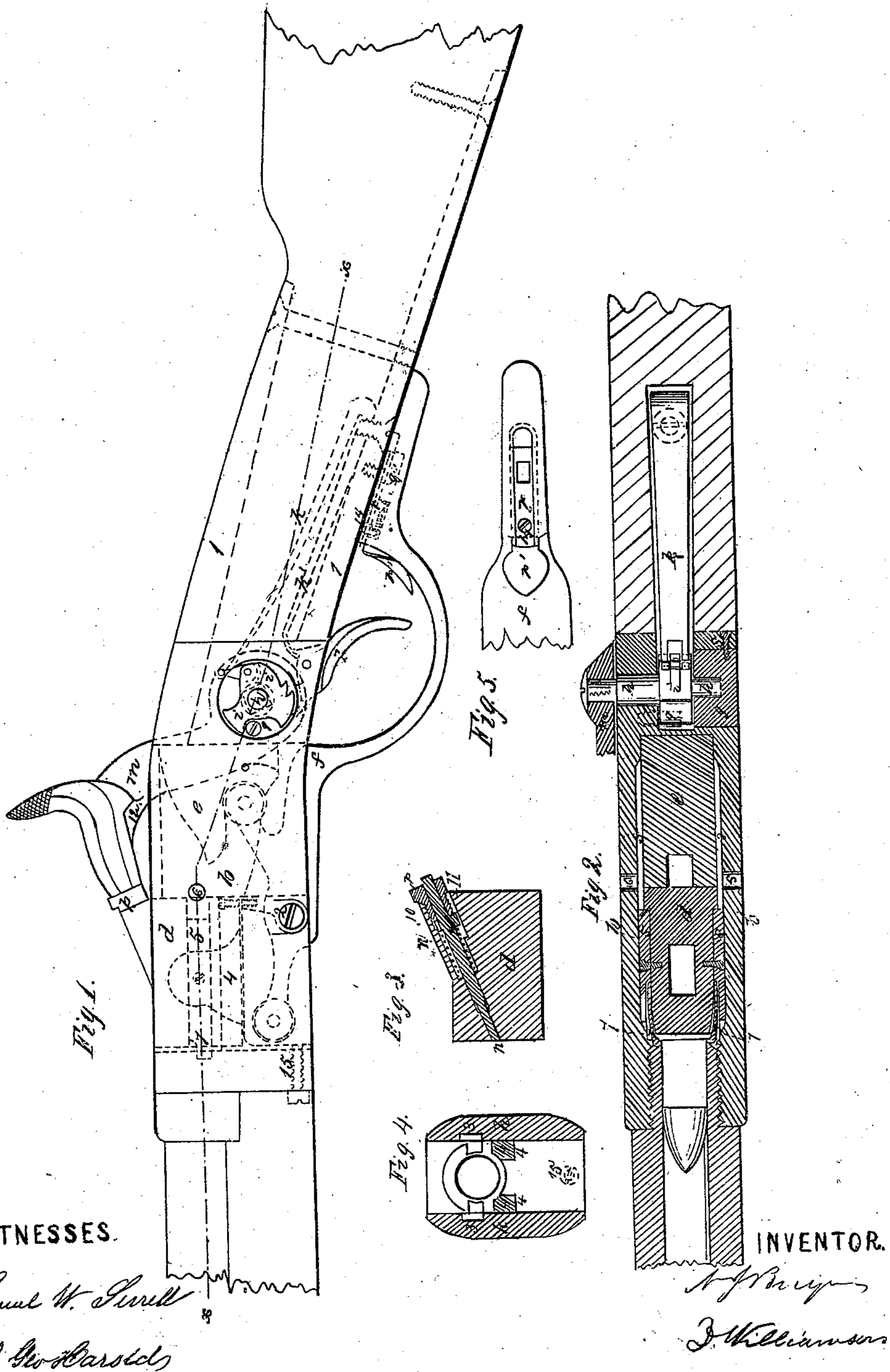


BERGEN & WILLIAMSON. Breech-loading Fire-arm.

No. 45,202.

Patented Nov. 22, 1864.



UNITED STATES PATENT OFFICE.

ALEXR. J. BERGEN AND DAVID WILLIAMSON, OF BROOKLYN, NEW YORK,
ASSIGNORS TO THE MOORE'S PATENT FIRE-ARMS COMPANY, OF SAME
PLACE.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 45,202, dated November 22, 1864.

To all whom it may concern:

Be it known that we, ALEXANDER J. BERGEN and DAVID WILLIAMSON, of the city of Brooklyn, Kings county, and State of New York, have invented, made, and applied to use certain new and useful Improvements in Breech-Loading Fire-Arms; and we do hereby declare the following to be a full, clear, and exact description of the said invention, reference being had to the annexed drawings, making part of this specification, wherein—

Figure 1 is a side elevation, with part of the housing for the hammer-tumbler open to show the interior parts. Fig. 2 is a sectional plan at the line *x x*, Fig. 1. Fig. 3 is a section of the pin that is struck by the hammer to explode the cartridge. Fig. 4 is a cross-section of the breech-housing, and Fig. 5 is a plan of the inner side of the lever-guard at the moving end.

Similar marks of reference denote the same parts.

The present invention is an improvement upon that for which Letters Patent were granted to Daniel Moore December 3, 1861; and our said invention consists in a means for retracting the metallic cartridge-case, and by the same device sustaining and guiding the breech-block. We also employ a stop applied to a peculiarly-constructed hammer-tumbler, to limit the descent as well as the ascent of the hammer, so that the spring cannot be injured by cocking too far, nor the gun injured by the descent of the hammer when the breech is open; and we allow both the tumbler and stop to be introduced and correctly placed through an opening at the side of the stock, that is provided with a movable plug or block.

In the drawing, *a* is the barrel; *b*, the metallic casting or forging forming the housing of the breech-blocks, and made with the straps 1 1 to connect the same with the stock *c*.

d is the forward breech-block, moving in line with the barrel, and *e* is the rear breech-block, moving up behind the same to sustain the explosion, or drawn down to allow the blocks *d* to be drawn back to open the breech. These blocks are acted upon by the lever-guard *f* upon the fulcrum-pin 2 in the same manner

as set forth in the aforesaid patent, and therefore do not require any further description.

The housing *b*, as before mentioned, is made in one piece for obtaining the requisite strength, and the mortise in said housing is made with grooves 3 3 on the faces of such mortise, but otherwise may be finished as a square smooth opening. In the lower front portion of the mortise ribs 4 4 are introduced, forming shoulders, and leaving an opening only wide enough freely to pass the end of the lever *f*, that operates upon the front sliding breech-block, *d*, and the edges of the shoulders 4 4 are on line with the bore of the barrel, so as to receive the cartridge when dropped into the mortise and guide the same when pressed into the barrel by the breech-block. The ribs forming these shoulders 4 4 may be made as a fork from a plate secured at the front end of the mortise by the screw 15, and at the rear ends the ribs 4 4 may be sustained by pieces extending down to the screw 2. This mode of fitting in the ribs 4 4 separately gives facility in finishing up the mortise; but the same might be formed solid with the housing. If the breech-block *d* were formed with solid projections taking the grooves 3 3, the same could not be introduced in the solid housing. We therefore groove the sides of the breech-block and introduce keys or slides 5 5, that are secured in place after being introduced while the block is in position by screws entering the breech-block, said screws being introduced through holes provided for that purpose in the sides of the housing, as at 6 6. We construct these keys or slides 5 5 in the manner represented in Fig. 2, so as to perform the double function of slides for the breech-block and of spring-catches 7 7 for the withdrawal of the metallic cartridge-case. The ends of these catches enter recesses at the rear end of the barrel when the breech-block is up to its place, and as said block is drawn back they seize on the flange of the metallic case on opposite sides and withdraw the same from the barrel, and said case is then free to fall out by turning the gun over sidewise.

From the peculiar construction of the slides 5 5 the necessary length of spring is obtained

for the catches 7 7, and at the same time the strength and efficiency of the slide is not impaired.

In the rear portion of the part *b*, between the straps 1 1, a cavity is formed for the hammer-tumbler; but in order to introduce such tumbler and axis when formed in one piece, it is necessary to make an opening in the side of *b*, opposite to the hammer, sufficiently large for introducing such tumbler, and then a cap or block, *g*, is inserted, containing a cavity for receiving the end of the tumbler-axis *h*, and this block *g* is to be retained in place by a screw inserted at any convenient place. The same is shown at 8. The tumbler *i* receives a bridle to the mainspring *k*, as usual, and said mainspring is returned to form the trigger-spring *k'*, and *l* is the trigger, as usual. The hammer-axis *h* receives the hammer *m* by a square and binding screw, as usual. The hammer-tumbler *i* has a notch, in which is introduced the stud 9, that is screwed into the interior part of *b*, and is located so that the tumbler *i* will come in contact with said stud when the hammer has been full-cocked, thereby preventing further strain, and if the hammer is discharged when the breech-block is slid back said stop prevents the end of the hammer coming down on the housing.

The pin *n*, employed for exploding the cartridge by striking on the flange of the metallic case, is constructed, as seen in Fig. 3, with a collar, 10, against which the helical spring *o* acts to keep said pin projected toward the hammer, and a feather, as at 11, in a groove formed in the inside of the cavity containing the parts, serves to guide said pin and retain it in position, so that its diagonal end shall strike properly against the edge of the metallic flange-case to explode the fulminate. A screw thimble or ferrule, *p*, retains this pin in place and forms a surface for pressing back the hammer for half-cocking the same by the act of opening the breech. In this operation the ferrule or thimble *p* forces back the hammer nearly to the position of half-cock, and, sliding along under the head of the hammer, sustains said hammer, and on coming in contact with the projection 12 the half-cocking is completed, and the breech-block and thimble

can then slide forward without touching the under side of the hammer-head, and if said hammer is first half-cocked by hand the thimble *p* does not come in contact with the hammer-head until the breech-block is drawn back.

In order to hold the lever *f* to the stock when the parts are in position for firing, we provide a catch, *q*, on the lower strap 1, taking a sliding latch, *r*, fitted into the moving end of the lever *f*, with a thumb or finger piece, *r'*, within the bow of the lever forming the trigger-guard. This sliding latch *r* is entered endwise into undercut or V grooves in the surface of the lever *f*, so that it is free to slide, and a spring is introduced in a recess formed in the lever under the slide, (see dotted lines,) that acts against the end of a screw, 14, that projects through the slide-latch *r* into the recess taking said spring, and also preventing the slide-latch from slipping out of its place. By this construction the lever can be instantly unlatched by applying the finger or thumb to the part *r'*, and the lever cannot become unlatched by the ordinary handling.

What we claim, and desire to secure by Letters Patent, is—

1. The spring-catches 7 7, in combination with the sliding breech-block *d* and grooved housing *b*, substantially as specified, whereby the said springs both guide the breech-block and draw out the cartridge-case, as set forth.

2. The shoulders 4 4 within the housing *b*, extending below the sliding breech-block *d*, from the rear end of the barrel to the forward end of the vertically-sliding block *e*, for the purposes and as set forth.

3. Forming the tumbler of the hammer with a notch taking against the stop-pin 9 at the extreme movement of the hammer in both directions, as set forth, in combination with the removable block *g*, whereby opportunity is afforded for the introduction of both the tumbler and stop-pin, as set forth.

Dated July 19, 1864.

A. J. BERGEN.
D. WILLIAMSON.

Witnesses:

LEMUEL W. SERRELL,
THOS. GEO. HAROLD.