W. S. Smoot

Breech-loading Fire-arm

No. 68250. Patented Aug. 27. 1867

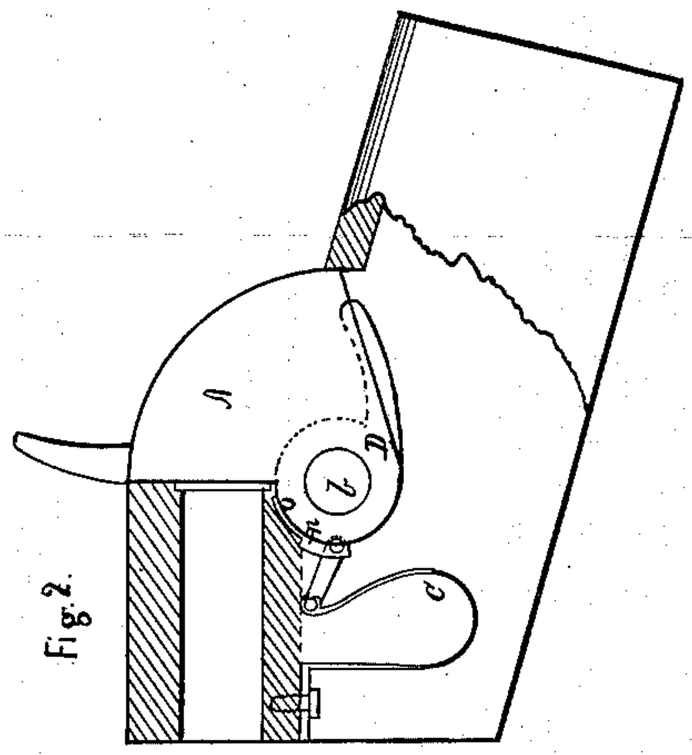

Fig. 2.

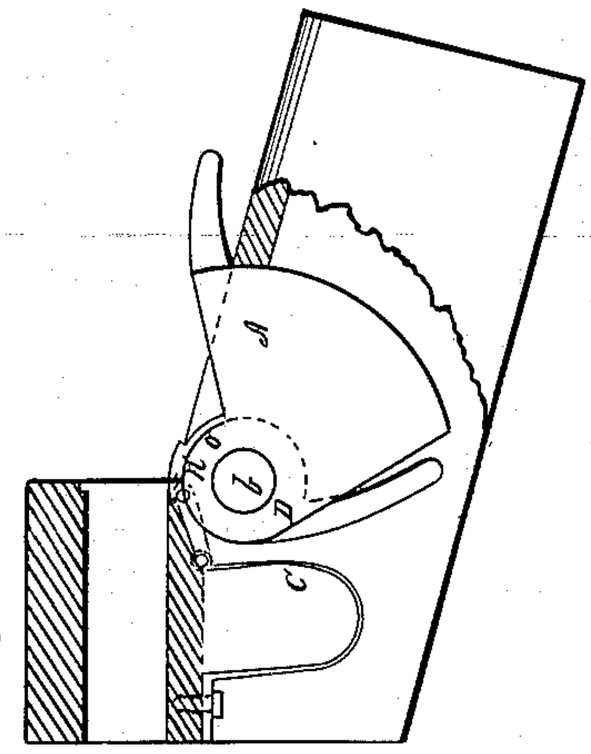

Fig 4.

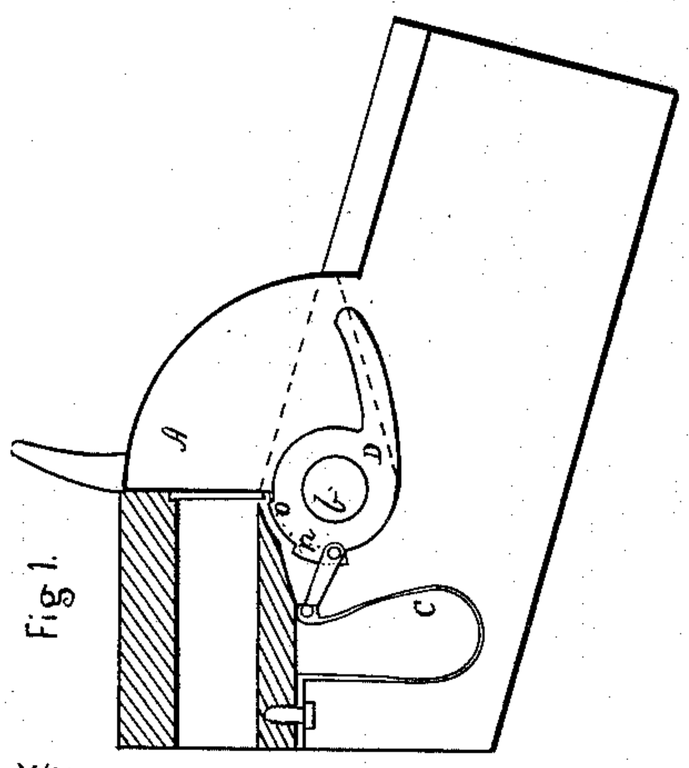

Fig. 1.

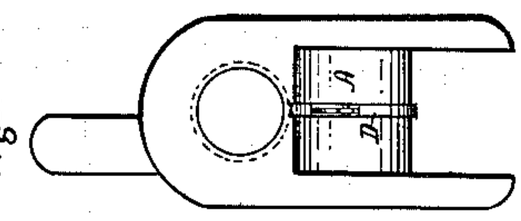

Fig. 3.

Witnesses.

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United States Patent Office.

WILLIAM S. SMOOT, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR TO WINDSOR MANUFACTURING COMPANY, OF WINDSOR, VERMONT.

Letters Patent No. 68,250, *dated August* 27, 1867.

IMPROVEMENT IN CARTRIDGE-RETRACTOR FOR BREECH-LOADING FIRE-ARMS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM SYDNEY SMOOT, of Washington, District of Columbia, have invented a new and improved Cartridge-Extractor for Breech-Loading Fire-Arms, of which the following is a full and exact description, reference being had to the accompanying drawing.

The nature of my invention consists in providing for a breech-loading gun a cartridge-extractor which may be used either as a positive retractor alone or as a spring-ejector in addition thereto. As a positive retractor alone, it is of the essence of my invention to rotate the extractor on the axis of the breech-block, by which it is operated, and to make the block swing both in conjunction with, and also independently of, the extractor, to impart a suddenly accelerated movement, without restricting myself to a block opening upward or downward, or otherwise. As a spring-ejector in addition thereto, it is of the essence of my invention to impart a suddenly accelerated movement to the extractor, whether rotated on the axis of the breech-block or otherwise, as may be the more convenient for the play of the operating spring. This spring, to perform its functions, may, as seen in the drawings, be made to react by passing the centre of the extractor, acting endwise thereto, by link or other familiar attachment, or it may be made to pass under or over the same, and react by striking into a notch, or it may be made to act otherwise, so only that by its reaction the extractor is made to take on suddenly accelerated movement.

In order to enable others to make and use my invention, I proceed to describe more particularly its construction and operation.

Figure 1 shows a longitudinal section of the extractor, the spring, the cartridge-shell in the chamber, and also the breech-block of a particular gun to which I have applied my invention, without meaning to restrict myself to this or any other particular pattern of breech-loading arms.

Figures 2 and 4 show projections of the working parts of the gun with the intervening side of the arm removed.

Figure 3 shows a front elevation of the breech-block and extractor, leaving out the spring *c*.

Through a slot in the breech-block A, and swinging on the axis thereof, *b*, I hang my extractor D, to rotate freely on this axis-pin *b* of the breech-block. The arm of the extractor may be longer or shorter to suit convenience. On the extractor D I make a shoulder, *n*, to come in contact with the head of the cartridge-shell when D is rotated. Also on the extractor I make another shoulder, *o*, to come in contact with the face of A, to restrict or limit the play of D while acting independently of A, and moving in direction of its face. and I leave for this independent play of D an interval, as seen between *o* and the face of A in fig. 2.

Now, the gun having been fired, I open the block A, which carries with it D. Continuing the movement the shoulder *n* comes in contact with the rim of the shell and retracts it by this positive movement. Meanwhile by this continued movement the spring *c* is brought to pass the centre, when it suddenly reacts and imparts its full force to accelerate the movement of D, which in turn transmits the ejecting kick against the shell, and brings up to a stop by hitting its shoulder *o* against the face of A.

By inspection it will be seen that I may modify the relative positions of *n* and *o* whenever the pattern of the arm to which I apply my invention makes it convenient; that is to say, instead of the positions respectively of *n* and *o*, as shown, I make the distance between *n* and the face of A only sufficient to admit the rim of the cartridge-head when A is shut, and I enlarge the slot in the opposite face of A sufficiently to admit the arm of D a distance measured by the loose play I give to the extractor. When, now, I open A, it will move a distance equivalent to this same measure before it begins to carry with it the extractor D. Then it will gradually retract the shell as aforesaid. And when the spring comes to react, as aforesaid, it will impart the force and transmit the kick as aforesaid. Only, now, *n*, instead of *o*, may be made to hit the face of A, or *o* may be put in position to follow behind *n*, and bring up to a stop against the barrel of the gun instead of against the face of A.

By inspection it will be further seen that as the greatest tension of the spring *c* is when its position is at the point of passing the centre of the extractor, the shoulder *o*, in fig. 4, will hold A open, so that it will not of itself shut, and the arm of D, as shown in fig. 2, will hold A shut, so that it will not of itself open.

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

I claim a cartridge-extractor, swinging loosely on a common centre with that of the carrier or breech-block, when said extractor, after being gradually operated by swinging the said block, is made to take on by any means a suddenly-accelerated movement to extract the shell, without accelerating the movement of the block itself by which the extractor is operated.

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Witnesses:
G. L. PORTER,
C. F. ROCKWELL.