D. SMITH.

Improvement in Breech-Loading Fire-Arms.

No. 129,433. Patented July 16, 1872.

FIG. 1

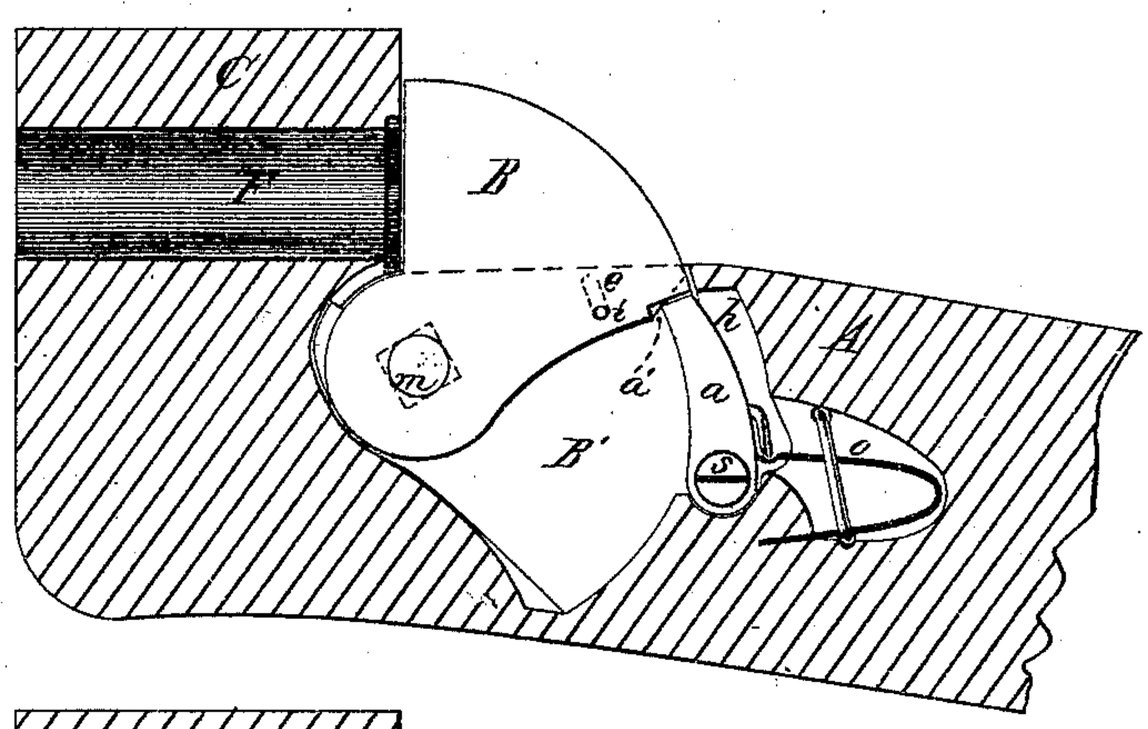
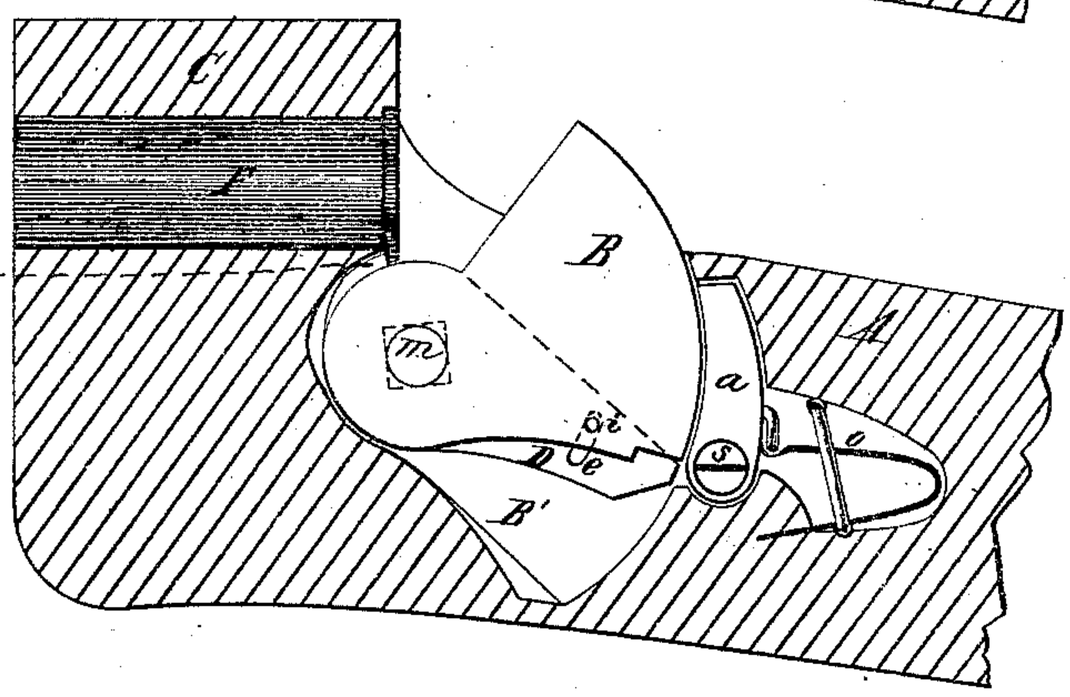


FIG. 2



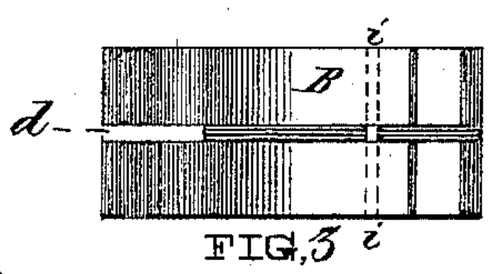


FIG. 3

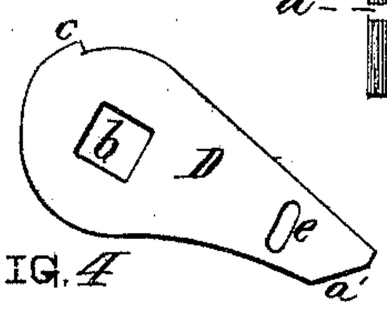


FIG. 4

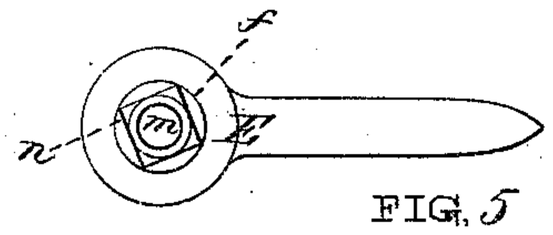


FIG. 5

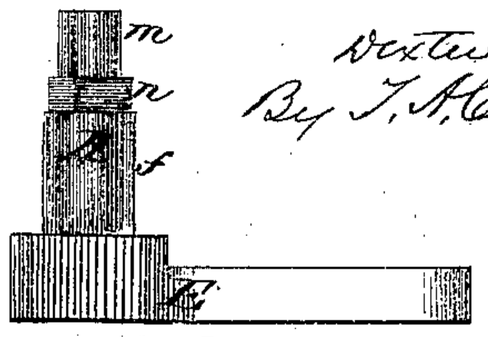


FIG. 6

Witnesses,
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129,433

UNITED STATES PATENT OFFICE.

DEXTER SMITH, OF SPRINGFIELD, MASSACHUSETTS.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 129,433, dated July 16, 1872.

To all whom it may concern:

Be it known that I, DEXTER SMITH, of Springfield, in the county of Hampden and State of Massachusetts, have invented a new and useful Improvement in Breech-Loading Fire-Arms; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making a part of this specification and to the letters of reference marked thereon, in which—

Figure 1 is a longitudinal section of a portion of the arm made according to my invention, showing the breech-block in place at the rear of the barrel. Fig. 2 is a longitudinal section of the same, showing the breech-block swung partially back from the rear of the barrel. Fig. 3 is a plan view of the lower side of the breech-block, showing the slot in which the cam operates. Fig. 4 is a side view of the extractor. Fig. 5 is a side view of the lever and its spindle which operates the extractor and breech-block; and Fig. 6 is a plan view of the same.

My invention relates to that class of breech-loading fire-arms in which the breech-block swings backward and downward away from the rear of the barrel when opened; and it consists of a swinging breech-block having a vertical slot made therein, in which operates a thin plate, through which is made a square hole. The breech-block has a hole therein, into which fits a spindle attached to a lever; and the gun-frame has two holes therein, through which the spindle is inserted from the outside of the frame, passing also through the hole in the breech-block; and the said spindle has a part of its length made of prismatic form, which, when the spindle is inserted through the breech-block, fits into the square hole in the thin plate contained in the breech-block. The said thin plate has a slot made therein concentric with the center, upon which it swings, and a pin is inserted through the breech-block, passing through the slot in the thin plate. This arrangement gives the plate a movement independent of the breech-block when operated by rotating the spindle of the lever, which movement is, however, limited by the pin which passes through the slot in the plate, so that the plate moves the block after finishing its own independent movement. The rear end of the thin plate is beveled, and a locking-bolt is pivoted to the frame, the upper end of which bolt is kept in beneath the breech-block by means of a spring, and operating to lock the block up in place in rear of the barrel; and when the thin plate and block are moved down by the lever the lever moves a short distance first, and its beveled rear end strikes against the bolt and forces it out from beneath the breech-block, and the block, which is then moved by the plate, is free to move down also. When the lever is moved to close the block the plate moves first, and then carries with it the block also.

That others skilled in the art may be able to make and use my invention, I will proceed to describe its construction and operation.

In the drawing, A represents the frame of the arm, having a recess, B′; and C represents the barrel, and F the chamber into which the cartridge is placed. B represents the breech-block, and E a lever, having a spindle, H, attached, a part of which, *f*, is made cylindrical, and the part *m* also, in order that the breech-block may turn freely thereon, and the part *n* of the spindle fits the square hole *b* in the plate D. This plate has a slot, *e*, and a projection or shoulder, *c*, thereon, both of which are made concentric with the center of the square hole *b*, and the end is beveled at *a′*, and a vertical slot, *d*, is made in the lower side of the breech-block, into which the plate D is inserted, and a small pin, *c*, is then inserted in the breech-block, passing through the slot *e* in the plate. The breech-block is then put in its place in the frame of the gun, and the spindle of the lever E is inserted through the frame and breech-block, a cylindrical hole being made in the block for that purpose, which fits the cylindrical part of the spindle so as to turn freely thereon, and the prismatic part *n* of the spindle fitting into the square hole *b* in the plate. When thus arranged in place the spindle H has a bearing in both sides of the gun-frame, and is kept in place by a screw turned in at the end *m* against the gun-frame. A bolt, *a*, is pivoted to the frame at *s*, and a recess, *h*, is made in the frame behind the breech-block, and a spring is arranged in the frame to keep the bolt thrown forward when the breech-block is up in place behind the barrel.

The operation of my invention is as follows:

When the breech-block, having the plate therein; is in place, pivoted upon the spindle H, the lever is upon the outside of the frame, and when the block is up against the rear end of the barrel the locking-bolt *a* is thrown forward by its spring beneath the block in the position shown in Fig. 1, and the lever E is then in a longitudinal position, with reference to the gun, upon the outside of the frame. If the lever be pressed down the prismatic part *n* starts the plate D downward, and the beveled part *a'* impinges against the upper end of the locking-bolt *a*, moving it out from beneath the breech-block into the recess *h*. While this movement of the plate is going on the spindle H revolves within the breech-block, but when the bolt *a* is thrown entirely out from beneath the block the plate D has then moved down so that the small pin *i* is caught by the slot *e* in the plate, and the plate then moves the block down also, the locking-bolt furnishing no positive resistance to the downward movement of the block, but only serving as a friction-piece to keep the block in any position in which it may be moved, until brought up to its place again at the rear of the barrel. When the lever is moved up again the plate is first started up until it comes in contact with the upper part of the slot *d*, or until the lower end of the slot *e* comes against the pin *i*, and during this movement the spindle revolves within its bearing in the breech-block; but when the plate strikes against the pin *i* or against the upper edge of slot *d*, as before mentioned, the block moves up with the plate, so that in either movement of the block, whether down or up, it is operated directly by the plate. If a shell be placed within the chamber F and the block is up in place at the rear end of the barrel, when the plate is rotated by the lever and spindle the projection *c* upon said plate impinges against the flange of the shell and the shell is withdrawn from the chamber, or is sufficiently started that it may be easily withdrawn by the fingers. It is evident that the prismatic part *n* might be made near the end of the spindle H, and the plate D be placed in a recess in the side of the breech-block, in which case the projection *c* should be made long enough to reach the flange of the cartridge.

Any required amount of movement may be given to the plate D independent of the movement of the block by making the slot *e* in the plate either longer or shorter, as may be desired; or if the plate be placed in a recess in the side of the breech-block, by making said recess wider.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The plate D, provided with the prismatic hole *b*, the extracting-shoulder *c*, the slot *e*, and the beveled end *a'*, and adapted for use, in connection with the breech-block B, through the medium of the pivot H and lever E attached thereto, all substantially as described.

2. I claim the combination of the plate D having the shoulder *c* and the prismatic hole *b* and slot *e* therein with the recessed breech-block B provided with a stop, whereby a limited movement is given to said plate, and the whole adapted to be operated through the medium of the pivot H and lever attached thereto, substantially as described.

3. I claim the plate D, breech-block B, locking-brace *a*, and pivot A, when constructed, combined, and adapted to be operated by a lever attached to said pivot outside of the frame, substantially as described.

DEXTER SMITH.

Witnesses:
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CLARENCE BUCKLAND.