2 Sheets--Sheet 1.

D. SMITH & J. C. MARSHALL.

Breech-Loading Fire-Arms.

No. 141,603. Patented August 5, 1873.

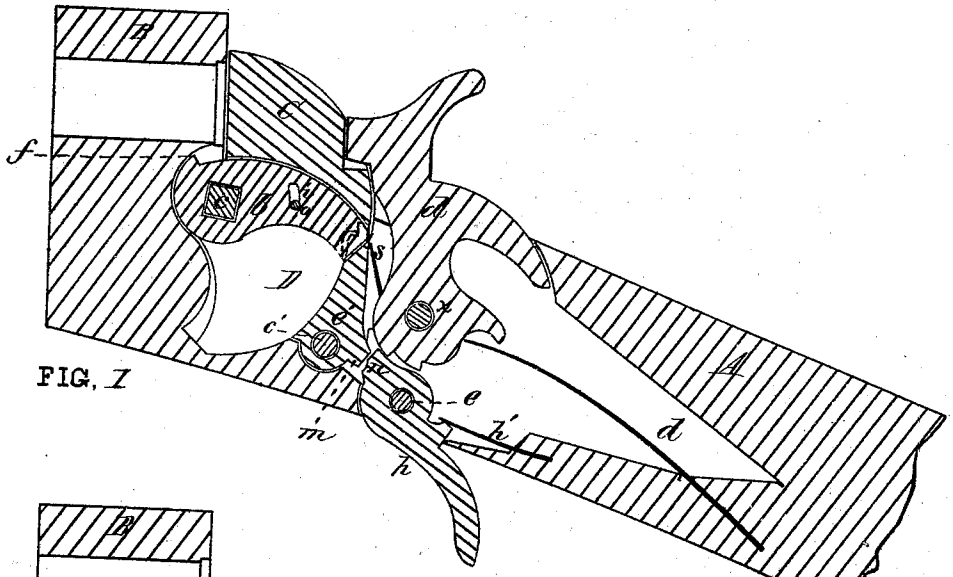

FIG. 1

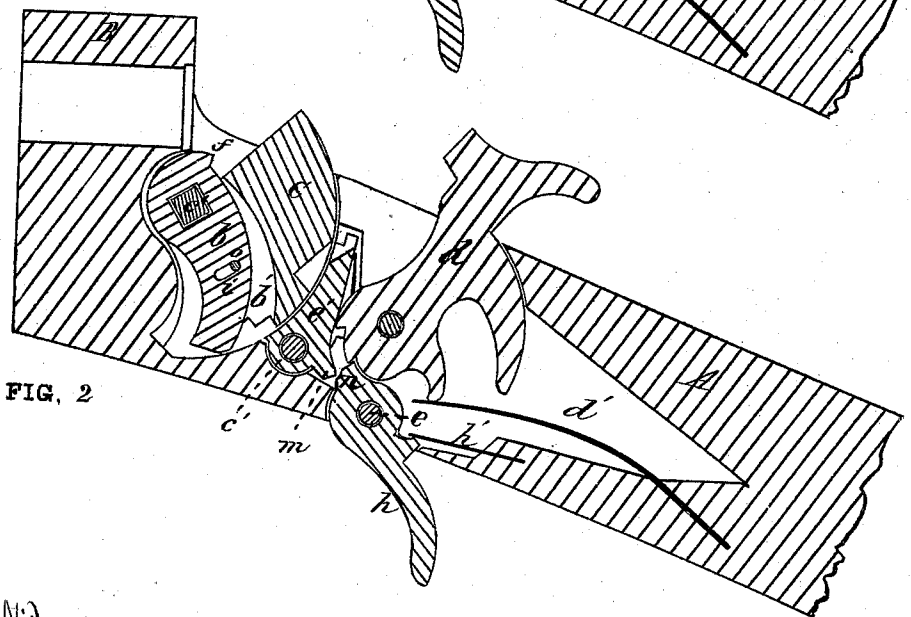

FIG. 2

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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

2 Sheets--Sheet 2.

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FIG. 3

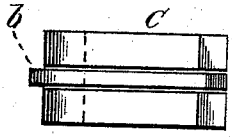


FIG. 4

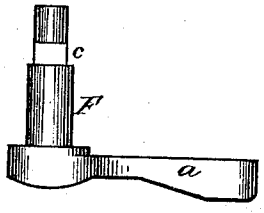
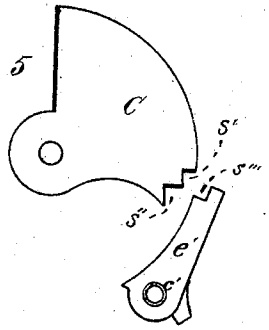


FIG. 5



Witnesses,
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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

DEXTER SMITH AND JOSEPH C. MARSHALL, OF SPRINGFIELD, MASSACHUSETTS; SAID MARSHALL ASSIGNOR TO SAID SMITH.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. **141,603**, dated August 5, 1873; application filed August 30, 1872.

To all whom it may concern:

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

Figure 1 is a vertical longitudinal section of a breech-loading gun made according to our invention, and showing the breech-block locked up in place behind the barrel. Fig. 2 is a vertical longitudinal section, showing the breech-block thrown back from the rear end of the barrel. Fig. 3 is a view of the lower side of the breech-block, showing the position of the extractor which operates the block. Fig. 4 shows the lever and pivot which operate the extractor, and Fig. 5 is a side view of the breech-block and its locking-brace.

Our invention relates to a breech-loading gun having a breech-block which swings backward and downward in opening; and it consists of a locking-brace pivoted beneath the breech-block at its lower end, its upper end bearing against the lower side of the breech-block to lock it up in place at the rear of the barrel, and swinging backward when the block is moved down, and upon the lower end of which brace is a projection or elongation operating in connection with the nose of the trigger so that when the locking-brace is thrown back and the block moved down said projection upon the brace falls in front of the nose of the trigger, and if the trigger be pulled the sear cannot be pulled out of the tumbler-notch until the locking-brace has dropped forward into place beneath the breech-block; for, if the block be moved down and the trigger be then pulled and the block be moved up again, the hammer will not be let down, as the projection upon the locking-brace is below its pivot, and the nose of the trigger, being forced against said projection, operates to pull the brace back against the hammer or its tumbler until the trigger is slightly released, to allow the locking-brace to drop forward into place beneath the breech-block, when the hammer may be let down. The breech-block is provided with two recesses in the lower corner, so that when it is thrown upward the upper end of the locking-brace enters one recess just before the block reaches its place at the rear of the barrel, and should there then be a premature explosion, caused by the fire-pin striking the cartridge, the block cannot be blown open or backward and cause injury. As the block is moved up entirely into place at the rear of the barrel the upper end of the locking-brace enters the second recess, and firmly locks the block in place at the rear of the barrel.

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

In the drawings, A represents the frame of the gun, having proper recesses made therein to receive the breech-block, hammer, and other several parts of the lock. The breech-block has a longitudinal slot, *b'*, made therein, into which is inserted the plate *b;* or a recess may be made upon the side of the block and the plate placed therein. The plate *b* has a slot, *i*, therein, through which, and also through the block C, is inserted a small pin, *o*, after the plate is inserted in place; or the block may be provided with any other desirable and equivalent stop to limit the independent movement of the plate. The plate has a prismatic hole therein to fit the part *c* of the spindle F, by which arrangement the plate *b* and the block are operated by giving the spindle a rotary movement to and fro by means of the handle or lever *a* attached to the spindle. A shoulder or projection, *f*, is made upon the plate, which catches against and withdraws the cartridge-shell as the block moves down, and the rear end of the plate is slightly beveled, and impinges against the upper end of the locking-brace *e'* as the plate is moved down. The locking-brace *e'* is pivoted to the frame at *e'*, and is forced inward toward and beneath the block by a spring, *s*, and upon the lower end of the locking-brace is made a protuberance or projection, *m*, which bears against the end or nose of the trigger when the locking-brace is in place beneath the breech-block and the hammer is down; but when the hammer is thrown back

so that the sear *n* drops into one of the notches of the tumbler the locking-brace may then be thrown back, its projection *m* upon the lower end dropping down in front of the nose of the trigger. The breech-block may then be thrown back, and, if the trigger be pulled, the front of the nose of the same at *n* will be forced against the projection *m*, and the sear will be prevented from being pulled out of the tumbler-notch, and the hammer will not be let down; and even should the breech-block be thrown up into place at the rear of the barrel while the trigger was thus being pulled the hammer would not be let down, as the projection *m*, being below the pivot *c'* the nose of the trigger, when pulled against said projection, operates to pull the upper end of the locking-brace back against the tumbler, and this prevents the sear from moving farther forward and out of the tumbler-notch. The hammer will then not be forced forward until the trigger is released sufficient to permit the locking-brace to fall forward into its place, and the sear is free to be pulled out of the tumbler-notch.

It will be seen that the three parts—the locking-brace *e'*, the nose *n* of the trigger, and the tumbler *x* with the hammer—form a perfect safety device to prevent the arm from being prematurely discharged independent of the breech-block, or its position in front of the locking-brace.

The breech-block has two recessess or steps, *s'* and *s''*, made in the lower rear corner, so that when the block is moved up the upper end of the locking-brace drops first into the upper one, and should the fire-pin strike the cartridge at that position of the block and explode it the block would not be blown back; and as the block is moved entirely up into place the locking-brace drops into the second or lower recess *s''*, and locks it firmly up in place at the rear of the barrel.

One step made in the breech-block, into which the locking-brace would drop at the first locking of the block, with a subsequent movement of the locking-brace beneath the block and against a stop, would be an equivalent arrangement for the purpose of locking the block in its two positions, as above described.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination of the locking-brace *e'*, having the projection *m* thereon, with the trigger *h* and tumbler *x*, all substantially as and for the purpose herein described.

2. The locking-brace *e'* provided with the projection *m*, whereby the said brace is secured in position beneath the breech-block by the nose of the trigger, substantially as described.

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JOSEPH C. MARSHALL.

Witnesses:
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