H. ROWELL.

BREECH-LOADING FIRE-ARM.

No. 187,319. Patented Feb. 13, 1877.

Fig. 1

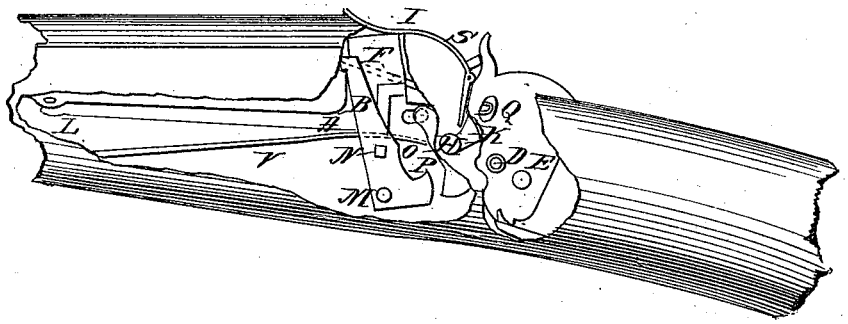


Fig. 2.

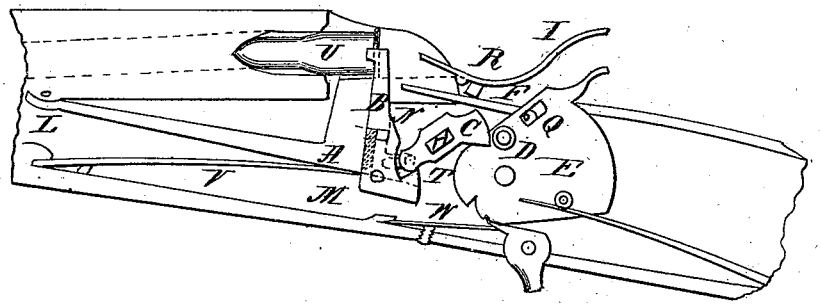
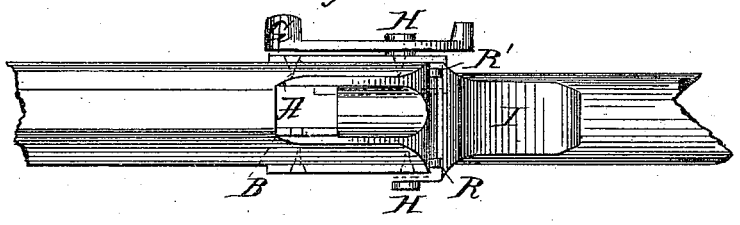


Fig. 3.



Witnesses

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HARVEY ROWELL, OF COLUMBUS, WISCONSIN.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. **187,319**, dated February 13, 1877; application filed July 11, 1876.

To all whom it may concern:

Be it known that I, HARVEY ROWELL, of the city of Columbus, county of Columbia, and State of Wisconsin, have invented an Improvement in Breech-Loading Guns, of which the following is a specification:

The object of my invention is to provide a breech-loading system which may be quickly and safely operated, and which, when closed, will be protected from the weather.

It relates to a class known as "single breech-loaders."

The invention consists in the combination and arrangement of the several parts, as will be hereinafter fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view of left side of gun-breech, cut away to show the system as closed. Fig. 2 is a longitudinal section, showing the system open. Fig. 3 is a plan view with housing thrown back.

In the drawings, Fig. 3 represents the barrel mortised to receive the breech-block A and extractor B, and cut away on the upper rear side to admit the cartridge. The breech-block A, Figs. 1 and 2, has a strap running forward under the barrel and hinged thereto at L. It is provided with two teeth projecting from the lower rear end to engage with the driver—the upper one to close it, and the lower one, which is curved on its upper side, "the curve being produced by striking an arc of a circle from the center of driving-pin H, when the breech-block is open," for the purpose of allowing the driver to operate the extractor without changing the position of the breech-block. It has on the side a right-angled slot or notch, cut away to leave a shoulder. It is slotted for rim-fire cartridge, or perforated for central-fire cartridge, to permit the firing-pin F to pass through it. The extractor B is right-angled, pivoted at M, and provided with a pin or lug, N, projecting toward the breech-block. At O it is cut on a circle struck from center of driving-pin H, when the extractor is closed, and at P cut on a circle struck from the upper end of extractor. The hammer E is provided with a pin and trundle at D, which, when closed, as in Fig. 1, rests against the driver. It has a hole at Q, Figs. 1 and 2, making a shoulder to engage with pin or lug of the firing-pin F. The driver C is perforated for the pin H, by which it is moved. It has a pin projecting sidewise from the upper end between the teeth of the breech-block A. The forward end is rounded to engage with the extractor at O and P, Fig. 1. The upper rear end is cut in the form of an ogee, on which the hammer-trundle rolls when being raised, and rests when the breech-block is closed, as in Fig. 1. The lower rear end is cut on an arc of a circle struck from a center slightly below the center of the driving-pin H, and on which the trundle rolls while the shell is being extracted, as in Fig. 2. The driving-pin H revolves in bearings in the sides of the receiver, and is flattened or squared for the driver C, Fig. 2, inside the lever H, Fig. 3, on one end, and for the arm K, Fig. 1, for raising the housing on the other end. The housing I is formed to correspond with the form of the breech; is hinged to the receiver at R R′, Fig. 3. One joint, R, Fig. 2, is elongated, forming a lug for the arm K, Fig. 1, to engage with. It has a pin or screw, S, Fig. 1, against which the hammer may rest when down. It is disengaged by unscrewing one joint-pin at R, Fig. 3. The firing-pin F is a straight tapering bar, with pin working in a transverse slot in the hammer which operates it.

The system is operated as follows: When the side lever G, Fig. 3, is turned, the rear end of the driver C, Figs. 1 and 2, is elevated, thus raising the hammer-trundle D, and starting the firing-pin F back. The arm K, Fig. 1, on the outside of driving-pin engages with the lug of the housing and presses it forward, thus throwing the housing back. The pin or roller on forward end of the driver C then strikes the lower tooth of the breech-block A and carries it down, opening the breech. The forward end of driver C then engages with the extractor B, and forces the lower end of the extractor down and the upper end backward, Fig. 2, thus extracting the shell. The roller T, Fig. 2, of the driver at the same time passes on the concave side of the lower breech-block tooth, so that the breech-block spring V, Fig. 2, is powerless to raise the breech-block or driver. The pin or lug N, Fig. 2, is

then engaged on shoulder formed by the right-angled slot on breech-block, also holding the breech-block down, but not the driver. After the hammer has been thrown back sufficiently to admit of its being caught by the trigger, as in Fig. 2, the trundle D runs around on the curved end of the driver, pressing directly against the bearings of the driving-pin H, Fig. 2, and rendering it impossible for it to come forward when the breech-block is down; also, when loaded, if the breech-block be partially closed, the trundle, in descending, will strike the curved end of the driver and raise the breech-block before exploding the cartridge. With the system open, as in Fig. 2, when the cartridge U is pushed into the barrel, the flange on the base of the cartridge engages with the extractor B and carries it forward. This forward motion of the extractor, turning on its pivot M, Fig. 2, raises the forward end of the driver over the elevation on lower tooth of breech-block, and disengages the lug N, Fig. 2, from the shoulder of breech-block, leaving the breech-block spring free to act upon the breech-block, which it raises up, as also the forward end of driver, leaving the hammer back ready to fire.

Should it be desired, for any purpose, to explode the cartridges as fast as they are put into the barrel, it is done by letting down the trigger-spring W, Fig. 2, or by any means holding the trigger back. The breech-block and driver are raised as before, while the hammer-trundle rolls around the curved end of driver C and descends on the ogee part of driver, exploding the cartridge immediately after the breech is closed. A single quarter-turn of the lever G, Fig. 3, opens the whole again.

If it is desired to close the breech without inserting a shell or cartridge, it is done by pressing the lever slightly. The forward end of the driver G then strikes the curve O, Fig. 1, on rear side of extractor, pushing it forward and leaving the spring free to act as before.

I am aware that a breech-block to close the breech, and also a spring to operate the block; that a receiver mortised and cut away; that an extractor for the purpose of removing shells and cartridges; that a hammer and firing-pin to explode the cartridges; that a lever to operate the system; that a housing to protect the system from the weather, have each and all been before known and used. I do not claim them; but I do disclaim each and all of them, and more particularly a breech-block operating in a mortised receiver.

I claim as my invention—

1. The combination, with the vibrating extractor B, of the driver C, when constructed and arranged to operate in the manner substantially as and for the purpose specified.

2. The combination of a breech-block, A, having a lug on its side, and an extractor, B, provided with a slot or shoulder, the parts being so arranged that when the breech-block is depressed, and the extractor thrown back, said lug and slot or shoulder will engage, so as to hold the breech open, substantially as specified.

3. The combination, with the vertically-operating breech-block A, spring V, and driver C, of the extractor B, whereby the forward movement of the extractor releases the breech-block when depressed, so that it may be closed by the spring, substantially as specified.

4. The combination, with the breech-block A and extractor B, of the driver C, the extractor being operated directly by the driver in the act of cocking the arm, substantially as specified.

5. The combination of hammer E, provided with trundle D, and the driver C, arranged on separate bearings, when constructed to operate in the manner substantially as specified.

6. The combination of breech-block A, driver C, and hammer E, the parts being so arranged that the breech-block and hammer may be operated by the driver, and the hammer cocked by the hand independent of the other parts, substantially as specified.

7. The combination, with the breech-block A, extractor B, and hammer E, of the driver C, said driver being arranged to operate the other parts, in the manner substantially as herein shown and described.

8. The combination of the driving-pin and arm with the hinged housing, substantially as and for the purpose specified.

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Witnesses:
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