

UNITED STATES PATENT OFFICE.

EDWARD LINDNER, OF NEW YORK, N. Y.

IMPROVEMENT IN BREECH-LOADING GUNS.

Specification forming part of Letters Patent No. 14,819, dated May 6, 1856.

To all whom it may concern:

Be it known that I, EDWARD LINDNER, of New York, in the county and State of New York, have invented a new and Improved Breech-Loading Gun; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure I is an outside side view of the gun. Fig. II represents a longitudinal section of the same. Fig. III is a top view. Fig. IV is a section at the line 2 and 3, Fig. III. Fig. V is a side and end view of the catch which locks the breech.

The nature of my invention consists in an arrangement by which, through the firing off of the gun, the breech will be made to open itself, either by the action of the cartridge in its passage through the gun-barrel or by the expansive power of the powder, and allowing during the opening of the breech a current of air to enter through the barrel of the gun, by which the same will be cleaned of all unconsumed part of the powder and of the condensed gas. Any further cleaning by hand will thereby be unnecessary, and consequently the party using such a gun will be able to shoot oftener in the same time than is the case with any other breech-loading gun. Any existing musket can, by little expense, be changed to a breech-loading gun after my principle, as most parts of the old musket may be altered so as to be used again in this gun, and the application of the impriming-ribbons can as easily be attached to this gun as to any other kind.

A is the frame containing the different parts of the mechanism, attached to the wooden stock S, and having the gun-barrel B screwed into the same.

C is the movable breech to receive the cartridge, turning with its axis L in the frame A and made to fit tight against the end of the barrel B.

D is a strong spring acting upon a projection, *a*, attached to the end of the breech C, and acting in such a manner as to push the forward end of the breech upward when the latter is disengaged.

E is a lever turning upon a fulcrum, *d*, fast to the frame A, and projecting through the top of the frame, acted upon by the spring *n*. The lower end of this lever is connected with the

rod F; the upper is pressed by its spring *n* against the breech C and catches the same, so as to hold said breech in its proper position in a line with the gun-barrel when in gearing. The rod F is situated below the gun-barrel B in the same place as the present ramming-rod, and is connected at its forward end with the bell-crank G. The other and longest arm of said bell-crank has an inclined surface, *m*, which fits into an opening made on purpose near the forward end of the gun-barrel, and projects some distance into the same. The breech C has on its lower side a projection, *p*, and a suitable recess, *q*, is made in the rod F in such a manner that said rod will strike against the projection *p* of the breech as soon as the rod F moves, giving thereby the breech a start in case the spring D is not sufficiently strong or should not act quick enough to overcome any sticking of the breech by the condensed gas.

H is a small chamber attached to the frame A, Fig. II, containing asbestos or any other soft fire-proof substance soaked in oil or grease and made to press against the surface of the breech for the purpose of cleaning the same.

L is the axis of the breech, firmly attached to the same by the screw *h*. This axis turns in the frame A, and has a recess, *o*, turned in on the end next the gun-nipple. A screw, *w*, is screwed in through the gun-nipple frame N, and fits tight against the bottom of this recess *o*, being shaped conical on the end, leaving thereby a space in the recess which is filled with asbestos or its equivalent soaked in grease to make a tight joint between the axis and the face of the gun-nipple frame N, and prevent any condensed gas or unconsumed powder to get between their surfaces. The vent or priming hole M passes from the gun-nipple *k* through the frame N, then through the screw *w* and the axis L and the solid part of the breech into the chamber for the cartridge. *f* is a small knife, one of which is screwed into each side of the breech, projecting a little distance into the chamber, for the purpose of cutting open the cartridge when the same is pressed in to allow the powder to fall into the vent or priming hole.

The operation is as follows: When the gun is to be loaded, the part of the lever E projecting through the frame A is pulled back with the finger, by which operation the breech is

unhooked, when the spring D acts upon the projection *a* at the end of the breech C, forcing the forward end of the same upward ready to receive the cartridge, which, while being pressed in, is opened by the knives *f* to allow powder to fall toward the priming-hole M. The breech is then pressed down by the finger, when the lever E, acted upon by its spring *n*, falls back in its place, locking thereby the breech C, and keeps the same in its proper position in a line with the gun-barrel B. The lower end of the lever E being, as before described, connected with the rod F, which latter is again connected with the lever G, the longer arm of the same, with the inclined surface *m*, is brought by this action into the gun-barrel B, when the gun is ready to be discharged. By the firing off of the gun the ball in its passage through the barrel comes in contact with the inclined surface *m* of the lever G, and presses the same, outward, communicating thereby a corresponding motion to the rod F and lever E, by which the latter is pulled away from the breech C. At the same time the recess *q* in the rod F comes in contact with the projection *p* on the breech C, giving the same a start, and the spring D acts upon the breech C, throwing the forward end upward, ready to receive a new cartridge. The current of air which passes into the gun-barrel during the opening of the breech cleans the same of all condensed gases and unconsumed powder, and giving the same no time to burn fast to the barrel or into the surfaces between the barrel and the breech, and prevents all necessity of cleaning the gun-barrel.

Fig. VI represents a different arrangement of communicating the motion from the lever G to the rod F. The end of the lever G acts upon an inclined surface on the rod F, moving thereby said rod the required distance to unhook the lever E. The advantage of this arrangement is that a greater amount of motion can hereby be communicated to the rod F.

Fig. VII represents an arrangement by which the necessary motion is given to the rod F by the expansive power of the powder. Y is a piston fitted (about one foot from the breech) into the gun-barrel B, which is strengthened for that purpose in this place.

The inner part of this piston corresponds exactly and forms part of the barrel, and is capable of moving outward, and is kept in its place by the spring W. On the under side of the piston Y an inclined surface is provided, working against an inclined surface made on the rod F. When the ball (after the gun is fired off) has passed the piston Y, the expansive power of the exploded powder presses this piston outward, bringing thereby the inclined surface of the same against the inclined surface of the rod F, and giving thereby to said rod the required motion to unhook the lever E to allow then the forward end of the breech C to be thrown upward.

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

1. The application of a lever projecting partly into the gun-barrel, or of a piston forming part of the barrel, in such a manner that the passage of the ball through the gun-barrel or the explosive power of the powder shall act upon the same, pressing the same outward for the purpose of communicating motion to a rod situated below the gun-barrel.
2. The manner of disengaging and opening the breech by a motion obtained either by the passage of the cartridge through the gun-barrel or by the action of the expansive power of the powder when the gun is fired off.
3. The box H, containing asbestos or its equivalent, for the purpose of cleaning the rubbing-surface of the breech in its motion upward.
4. The arrangement of packing the axis of the breech against the face of the gun-nipple frame, in the manner and for the purpose specified.
5. The arrangement of the vent or priming hole from the gun-nipple to the cartridge-chamber in the breech, in the manner as described.
6. Filling the space in the recess O with asbestos or its equivalent, substantially as described, and for the purpose specified.

EDWARD LINDNER.

Witnesses:

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