

(No Model.)

G. GERDOM.
BREECH LOADING ORDNANCE.

No. 515,707.

Patented Feb. 27, 1894.,

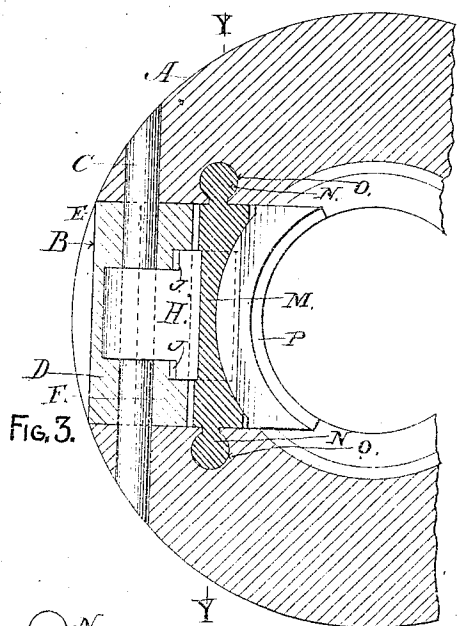


FIG. 3.

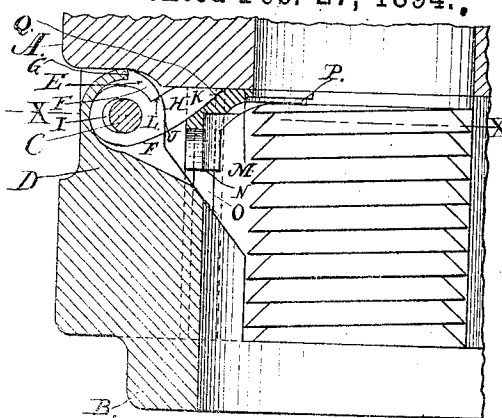


FIG. 1.

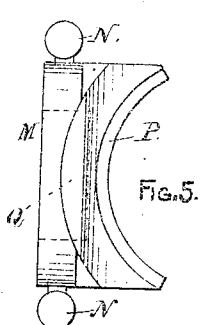


FIG. 5.

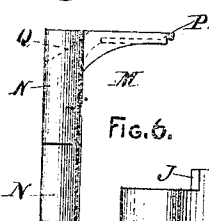


FIG. 6.

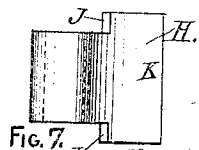


FIG. 7.

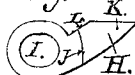


FIG. 8.

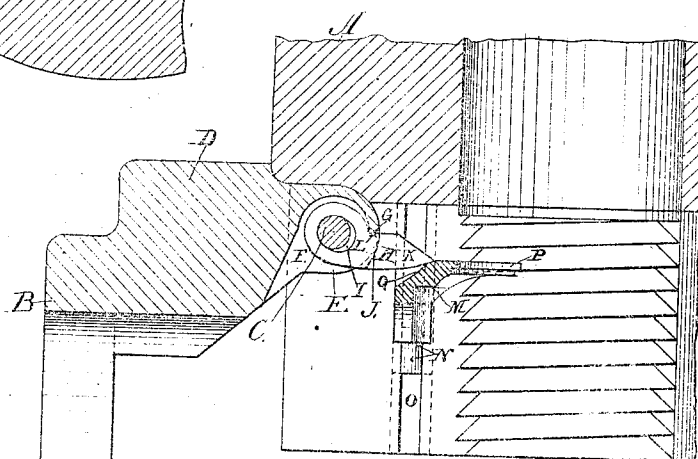


FIG. 2.

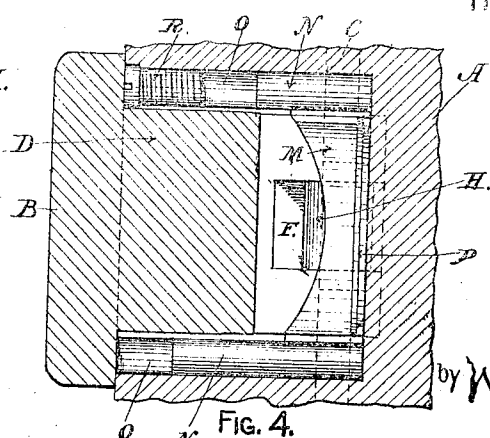


FIG. 4.

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GREGORY GERDOM, OF WEST TROY, ASSIGNOR OF ONE-HALF TO JOHN H. REYNOLDS, OF TROY, NEW YORK.

BREECH-LOADING ORDNANCE.

SPECIFICATION forming part of Letters Patent No. 515,707, dated February 27, 1894.

Application filed February 15, 1893. Serial No. 462,385. (No model.)

To all whom it may concern:

Be it known that I, GREGORY GERDOM, of West Troy, in the county of Albany and State of New York, have invented certain new and useful Improvements in Breech-Loading Ordnance, of which the following is a specification.

This invention relates to improvements on cartridge-shell ejectors for breech-loading ordnance, and it especially relates to improvements on the ejecting device shown in Letters Patent No. 466,848, granted to me January 12, 1892; and the object of my present invention is to simplify the construction and, by avoiding the dangers of derangement, make the ejector positive in its operation. This object I attain by the mechanism illustrated in the accompanying drawings which are herein referred to and form part of this specification.

In said drawings, Figure 1 is a horizontal longitudinal section of a portion of the breech of a breech-loading cannon, carrier-ring, and ejector; said carrier-ring being shown in position for holding the breech-block in place to close the breech of the cannon, with the ejector at its innermost position; Fig. 2, a like section, with the carrier-ring turned back to carry the breech-block out of the breech of cannon, and the ejector moved to its outermost position. Fig. 3 is a transverse section of Fig. 1 at the line X X. Fig. 4 is a vertical section of part of the breech of the cannon and the carrier-ring, at the line Y Y on Fig. 3, with the ejector shown in front elevation. Figs. 5 and 6 are respectively an end elevation and a side elevation of the ejector detached from the cannon; and Figs. 7 and 8 are respectively a detached plan view and an end elevation of the lever for moving the ejector.

As represented in the drawings, A designates a portion of the breech of a breech-loading cannon made substantially as described in Letters Patent No. 451,241 granted to me April 28, 1891.

B designates the carrier-ring which carries the breech-block for closing the breech of the cannon, said breech-block being omitted from the illustrations; said carrier-ring—with the exceptions hereinafter noted—being substan-

tially like the one described and shown in the Letters Patent herein last referred to, and it is fitted to swing on a pivot-pin C, which is secured in the breech of the cannon and passes through an arm, D, which forms part of said carrier-ring; said arm being arranged at right-angles to the plane of said ring to form an off-set hinge for it, but, unlike the carrier-ring above referred to, the knuckle of said arm, as at E, is arranged eccentrically to the center of the pin C for a purpose hereinafter explained. The arm D has a recess, F, formed at its inner end, so as to partially inclose the pin C and form a shoulder, G, at the inner end of the knuckle E.

H designates an ejector-operating lever which is arranged in the recess F and is provided with a slotted opening, I, through which the pin C is passed; the minor diameter of said opening should correspond to the diameter of the pin C, so that the lever H can have partial rotation thereon, but the major diameter of said opening should be sufficient to allow said lever to have a slight endwise movement on the pin C; and it will be observed that by this construction provision is made to allow the lever H to partake of a combined swinging and endwise movement. The lever H is provided with a shoulder or shoulders, J, which bear against the knuckle E in such manner that, when the carrier-ring B is swung into the position shown in Fig. 2, the eccentricity of said knuckle will have pushed said lever inwardly toward the center line of the cannon, toward which point the eccentric knuckle will steadily move said lever from its initial position, as shown in Fig. 1, to its final position, as shown in Fig. 2. The inner end of the lever H is made wedge-shaped, as at K, so that when said lever is in the position shown in Fig. 1, the inner face of said end will coincide with the line of the inner end of the slot through the side of the breech. The face L, of the lever H, is practically radial from the center of the pin C, and it is so arranged that, when the carrier-ring B has completed about one half of its movement, the shoulder G will take against the face L and effect a partial-rotation of the lever H on the pin C.

M designates the cartridge-shell ejector.

which is provided with guides, N, arranged at opposite edges and fitted to slide in longitudinal holes, O, formed in the breech of the cannon; said ejector is provided with a segmental lip, P, that is arranged to engage under the peripheral flange on the outer end of a cartridge-shell, at the opposite side of the inner face of said ejector, an angle-seat, Q, is formed to correspond to the wedge-shaped end K of the ejector-lever H, so that normally said lever-end will lie in the space formed by said angle-seat, so that, by the first forward movement of the lever H, an initial movement of the ejector M toward the rear-most end of the breech A will be begun by said lever wedging the ejector rearwardly, then, by a continued swinging movement of the carrier-ring B, the lever H will acquire a corresponding swinging movement—as hereinbefore described—of sufficient velocity to eject a cartridge-shell from the bore of the cannon. When the breech-block is being restored to its place in the breech A, it will push the ejector M inwardly into the position shown in Fig. 1. A tap-screw, R, is inserted in the outer end of one of the holes O, for the purpose of restricting the rearward movement of the ejector M.

My invention operates in the following manner: The cartridge being inserted in the breech of the cannon, with the peripheral flange of the cartridge-shell bearing against the outer face of the segmental lip P of the ejector M, as the cartridge is pushed forward, either by hand or by the breech-block, into the bore of the cannon, the peripheral rim of the cartridge-shell will continue in the same relation to the lip P after the breech-block is in place to close the opening in the breech of the cannon. To eject the cartridge, or the cartridge-shell after the cartridge has been fired, the carrier-ring B is swung from the position shown in Fig. 1 into the position shown in Fig. 2; at the beginning of this swinging movement of the carrier-ring the lever H will be pushed toward the center line of the bore of the cannon, whereby the wedge-shaped end of said lever will be intruded farther under the ejector M and impel the latter slowly toward the open breech of the cannon, and this

moderate movement of the ejector will continue until the shoulders J take against the face L of the lever H and then said lever will have a swinging movement imparted to it, the impetus of said movement will be sufficient to eject the cartridge-shell from the open breech of the cannon, the ejection being made in a positive manner. In this construction the use of springs, and other delicate mechanism, that are liable to be broken or otherwise injured, is entirely dispensed with and all the movements are positive in their character.

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

1. In a breech-loading cannon, the combination of a carrier-ring provided with a hinge-arm having a recess near its inner end; said recess terminating with a shoulder that is fitted to take against and impart a swinging movement to an ejector-operating lever; the convex surface of the inner end of said hinge-arm being eccentric to the center of the pivot on which said carrier-ring swings, a pivot or hinge-pin for said carrier-ring, an ejector-operating lever having a hub provided with a slotted opening through which said hinge-pin passes; said lever being adapted to acquire a combined sliding and swinging movement, and an ejector operated by said lever and fitted to slide in a direction that is parallel to the center line of the bore of the cannon, as and for the purpose herein specified.
2. In a breech-loading cannon, the combination, with a cartridge-ejector, N, provided with an angle-seat, Q, as herein set forth, of an operating-lever, H, arranged to acquire a combined sliding and swinging movement and provided with a wedge-shaped end, K, fitted to take against said angle-seat; whereby said ejector will primarily be wedged from its position at the inner end of the breech opening, and then—by the swinging movement of said operating-lever—forcibly moved toward the outer end of said breech opening, as and for the purpose herein specified.

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Witnesses:

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