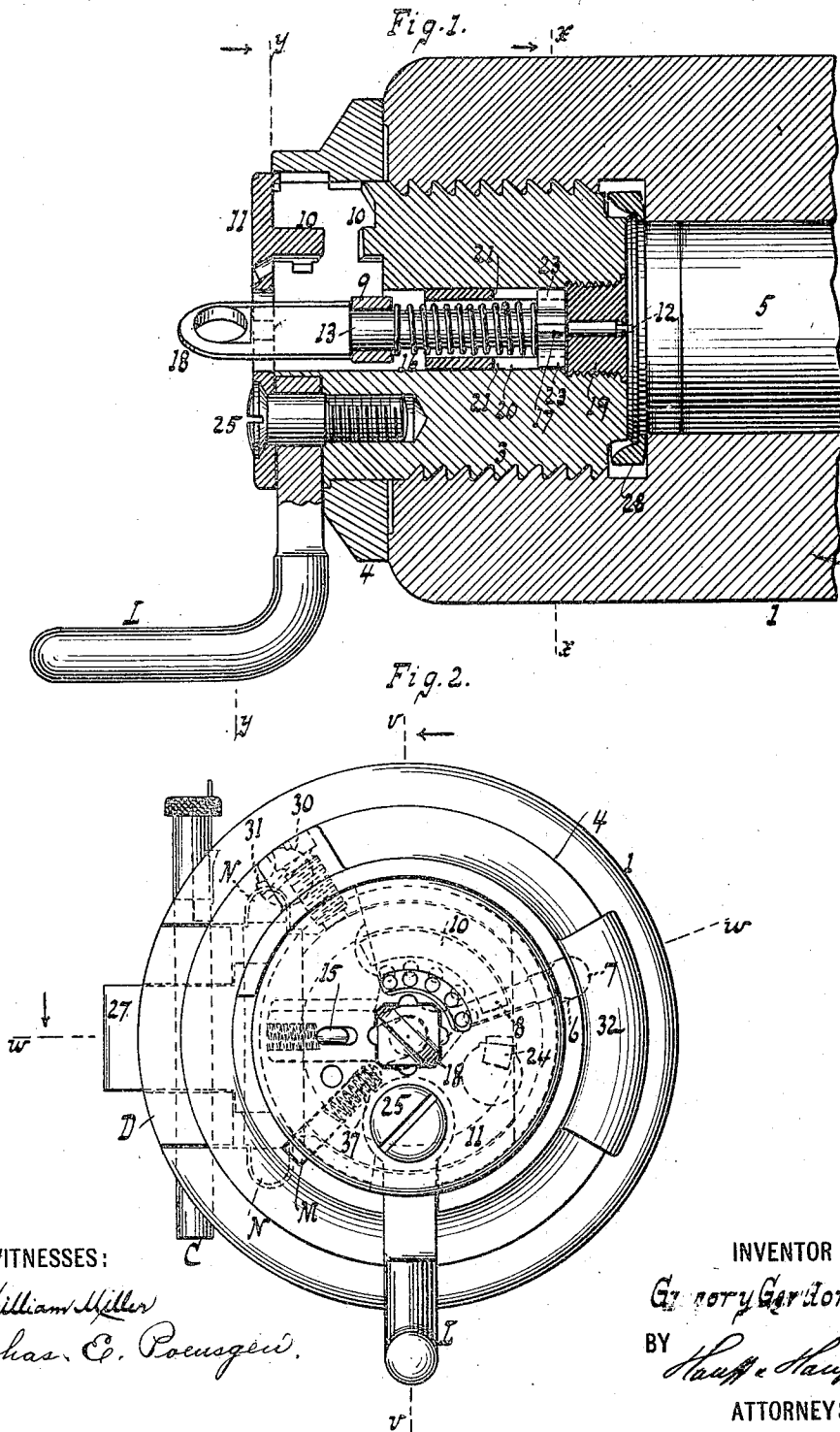


3 Sheets—Sheet 1.

No. 585,517.

Patented June 29, 1897.



(No Model.)

3 Sheets—Sheet 2.

G. GERDOM.
BREECH LOADING ORDNANCE.

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Fig. 3.

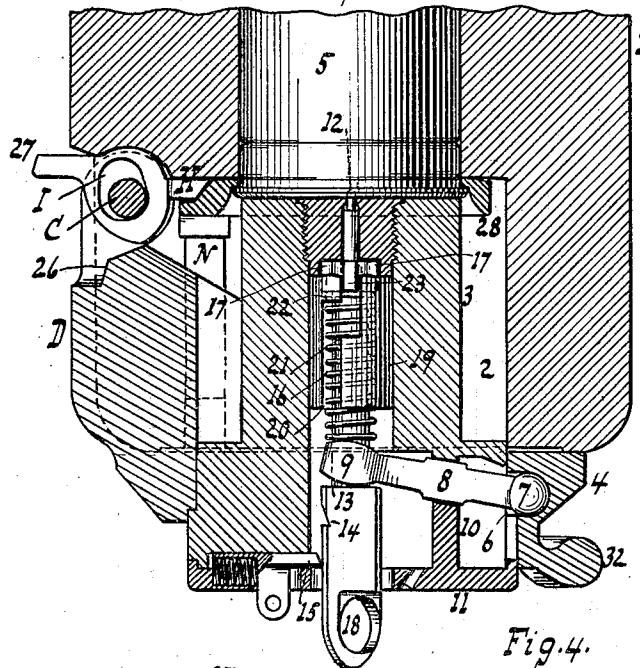
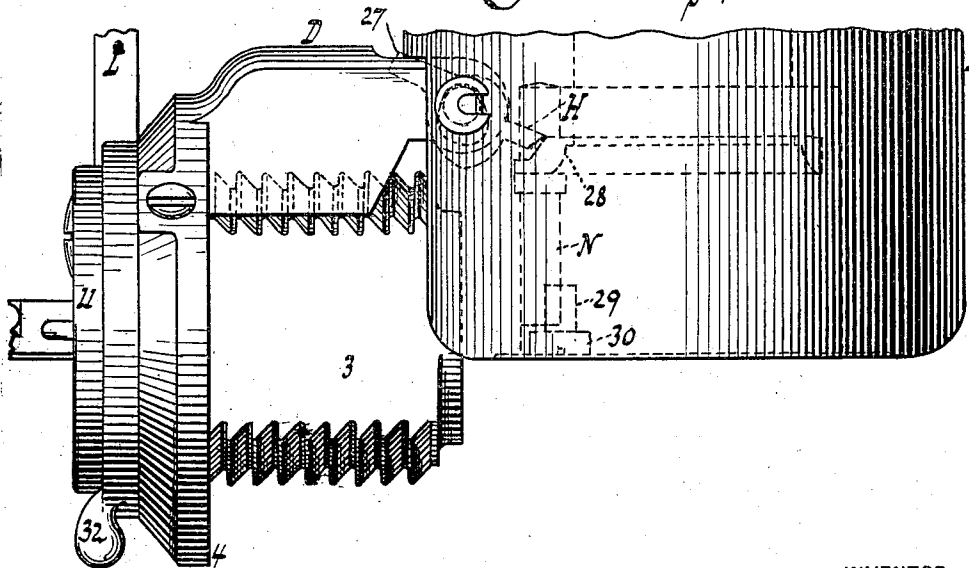


Fig. 4.



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(No Model.)

3 Sheets—Sheet 3.

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Fig. 5.

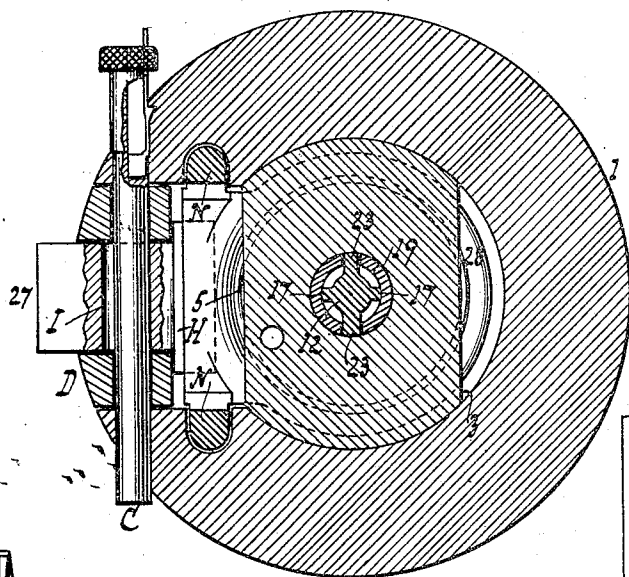


Fig. 7.

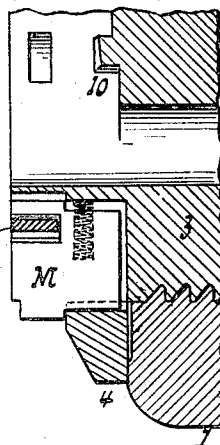


Fig. 8.

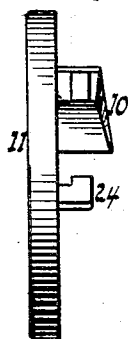
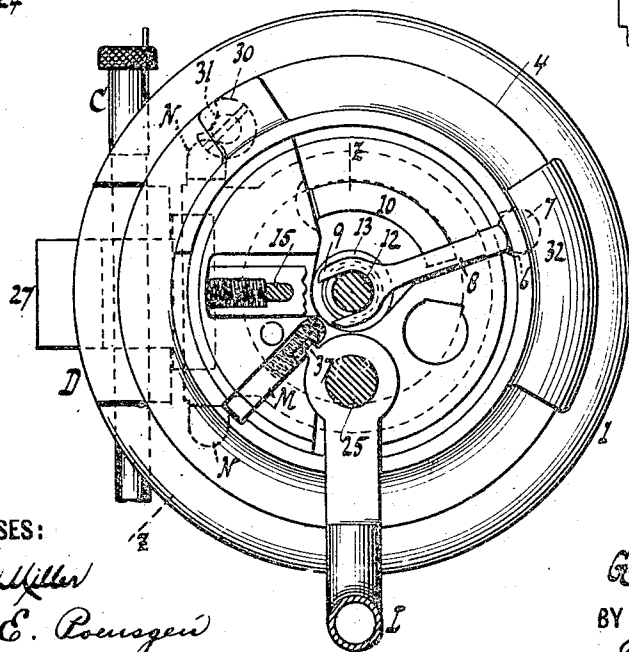


Fig. 6.



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UNITED STATES PATENT OFFICE.

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

BREECH-LOADING ORDNANCE.

SPECIFICATION forming part of Letters Patent No. 585,517, dated June 29, 1897.

Application filed February 20, 1897. Serial No. 624,355. (No model.)

To all whom it may concern:

Be it known that I, GREGORY GERDOM, a citizen of the United States, residing at Sandy Hook, in the county of Monmouth and State of New Jersey, have invented new and useful Improvements in Breech-Loading Ordnance, of which the following is a specification.

This invention relates to improvements on the breech-loading ordnance shown in United States Patent No. 515,707, granted February 27, 1894, on an application of mine; and the invention resides in the novel features of construction set forth in the following specification and claims, and illustrated in the annexed drawings, in which—

Figure 1 is a sectional side elevation of a cannon with the breech-block in closing position, the section being taken along line *vv*, Fig. 2. Fig. 2 is a rear elevation of Fig. 1. Fig. 3 is a section along line *ww*, Fig. 2. Fig. 4 shows the cannon with the breech-block in open position. Fig. 5 is a section along line *xx*, Fig. 1. Fig. 6 is a section along line *yy*, Fig. 1. Fig. 7 is a section along line *zz*, Fig. 6. Fig. 8 is a detail view of a breech-block cover.

The cannon or barrel 1 is shown with a breech-chamber 2, into which can enter the breech block or piece 3, rotatively supported in carrying-ring 4. The breech-block can be held closed by suitable screw-threads. These parts are known, being described in United States Patent No. 451,241, applied for by me and granted April 28, 1891. The closed breech-block suitably confines the cartridge or charge 5.

In the carrier-ring 4 is a recess or seat 6, Fig. 3, into which can be removably placed the head portion or rounded part 7 of a cocking-lever 7 8 9. The head 7 has a suitable play in the seat 6 and forms the fulcrum for the lever. The bearing part 8 is engaged by inclined faces 10, Figs. 1, 3, and 8, secured to or forming part of the rotary breech-block 3 and of the breech-block cover 11. As the block 3 is turned to be freed from or locked to the breech-chamber the cam-faces 10 move the hammer-setting lever 7 8 9, so as to cock or withdraw the firing-pin or to pass forward along the cocked pin to leave the latter free for firing.

In United States Patent No. 466,848, ap-

plied for by me and granted January 12, 1892, a cocking-lever is shown having a fulcrum pin or arbor carried by the breech piece or block. In fulcruming the lever by its head 7, as herein described, the use of a fulcrum-pin or separate fulcrum-piece is avoided and the lever being readily removable from and replaceable in its seat facilitates manipulation, such as cleaning or repairs. This lever 7 8 9 may be considered a lever of the third class, having its fulcrum at 7 in the carrier-ring 4, its power-point at 8, and its resistance-point at 9.

The firing pin or hammer 12, Fig. 3, has a shoulder 13, engaged by the fork or resistance-point 9 of the cocking-lever. When the breech-block is unscrewed from the breech-chamber thread, the rotation of the block causes cam 10 to move the cocking-lever so as to draw back the firing-pin, bringing the notch 14 of the pin into position for engagement by the spring detent or trigger 15. A rotation of the breech-block in the reverse direction moves the lever-fork 9 forward, so as to compress the firing-spring 16 between said fork and the shoulder or lugs 17, Fig. 5, on the firing-pin 12. A release of trigger 15 will enable the firing-spring 16 to throw the pin forward or to firing position. The pin 12 can also be drawn back by handle part 18, Fig. 3, if required.

The lugs 17 of the firing-pin fit into or are guided by a bushing 19, Fig. 5, screwed or suitably inserted into the breech-block, as seen in Fig. 1. This bushing is formed with offset slots or ways 20, Fig. 3, somewhat in the nature of bayonet-joint slots, such offsetting forming the shoulders 21 and 22, Fig. 3, in each of the slots 20. When by the firing of the gun the pin 12 should be driven back, the shoulders 23 on the pin striking against the shoulders 21 of the bushing 19 will prevent the pin being driven out of place or doing damage. At the same time, when required, the pin can be withdrawn from and replaced in the bushing by hand, since a suitable turning or twisting of the pin at proper moments while inserting or withdrawing enables the lugs or shoulders 23 to clear the shoulders 22 and 21.

As seen in Fig. 5, the lugs 23, as also the bushing-slots into which the lugs 23 are fitted, are not of the same size or thickness. The

bushing being properly adjusted in the breech-block and the lugs 23 being each adapted to fit its proper slot 20 in such bushing, the pin 12 can only be inserted in proper position—that is, with its notch 14 in position to be engaged by trigger 15.

The breech-block cover 11 is secured in place by lugs or headed projections 24, Fig. 8, which can be inserted or engaged into suitable keyhole-shaped openings or recesses in the breech-block, and when the cover 11 is in place it is secured against turning on the block by screw 25, Figs. 1 and 2, forming also a fulcrum for the lever L, which lever or its nose 37 actuates bolt M. Said bolt M when in engaging position locks the breech-block against rotation in the carrier-ring, as described in said United States Patent No. 466,848.

The carrier-ring by its arm D, fitted into a radial opening in the breech, swings on pivot or pintle C, and said arm has an eccentric portion or knuckle for giving the ejector-operating lever H, Figs. 3 and 4, the endwise or wedging movement to start the ejector when the carrier-ring starts to opening position, as described in said United States Patent No. 515,707. When the carrier-ring is swung all the way to open position, as seen in Fig. 4, the shoulder 26, Fig. 3, on the hinge-arm D, engaging arm or lug 27, Figs. 3 and 4, of the ejector-operating lever H, swings said lever H to such an extent as to move the ejector 28 sufficiently for ejecting the shell or cartridge 5.

The ejector 28, as seen in Figs. 1 and 4, is made in form of a ring to entirely surround or hold the shell 5 or securely grasp the heel or flange of such shell. The inner face of the ejector-ring 28 is made to flare rearwardly, so that said ring will act as a guide for centering or leading the shell or cartridge accurately to the bore. The front or smaller or contracted diameter of the ring or ejector 28 is made to correspond with the cannon-bore or cartridge-chamber and will accurately or securely grasp or encircle the cartridge.

The ejector-ring 28 has guides N arranged to slide along holes or guideways in the cannon-breech, as described with reference to such guides in said United States Patent No. 515,707.

A screw 29, Fig. 4, has its head 30 provided with a cut-out portion 31, Figs. 2 and 6. In said Figs. 2 and 6 said screw-head 29 is shown as having its full part or convex rim portion projecting into the path of one of the guides N, thus arresting or preventing said guide with the ejector 28 from coming out of place. A partial turn of the screw 29 to carry the cut-out or concavity 31 into alignment or correspondence with the adjacent or contiguous guide N will allow said guide to pass by the screw-head through said cut-out or depression 31, so that the ejector 28 can be removed.

The carrier-ring has a handle 32, service-

able for opening or closing said ring. The pin 12 is shown with two oppositely-placed lugs 23, by which the pressure or rebound is taken up or distributed, and the pin is not apt to be bent on such rebound when two such lugs are employed.

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

1. A carrier ring and a rotary breech-piece provided with an incline or cam, combined with a hammer-setting lever fulcrumed in the carrier-ring and engaged by said incline, a hammer or firing-pin engaged by the lever, and a trigger or detent for the hammer substantially as described.

2. A carrier-ring provided with a seat or depression, and a rotary breech-piece provided with an incline or cam, combined with a hammer-setting lever engaged by said incline and having a headed or rounded end portion adapted to be removably seated in said depression to form a fulcrum for the lever, a hammer or firing-pin engaged by the lever, and a trigger or detent for the hammer substantially as described.

3. A cannon having its breech provided with a radial opening and a carrier-ring having a hinge-arm fitted into said opening, and an ejector-ring actuated in a rectilinear direction by said hinge-arm and constructed to completely encircle or hold a charge or cartridge substantially as described.

4. A breech-loading cannon provided with an ejector-ring constructed to encircle or entirely surround a charge or cartridge, said ring being made to flare rearwardly and having its front edge or diameter contracted or made to correspond to the bore or cartridge-chamber so that said ring will guide the cartridge into the bore substantially as described.

5. A carrier-ring and a breech piece or block, combined with a bushing for the block, said bushing having a bayonet-joint-shaped offset or shouldered slot or way, and a firing-pin housed in the bushing and having a lug or lugs adapted to strike against the slot shoulder or offset on the rebound of the pin substantially as described.

6. A carrier-ring and a breech piece or block, combined with a bushing for the block, said bushing having offset or shouldered slots or ways, and a firing-pin having lugs made to engage said slots and lugs made to sit or be guided by the bushing, said slots with the slot-engaging lugs being made of different sizes to insure the proper position or insertion of the pin substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

GREGORY GERDOM.

Witnesses:

W. C. HAUFF,

E. F. KASTENHUBER.