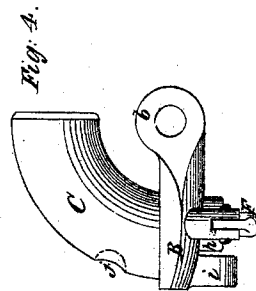
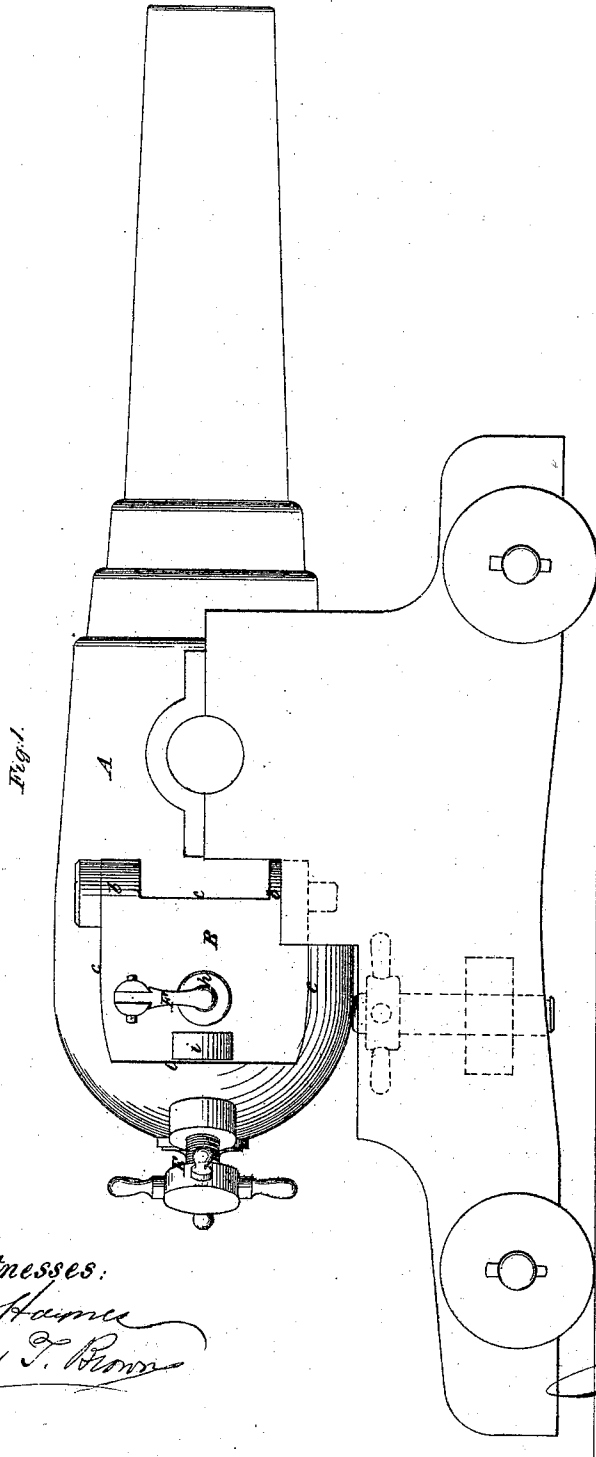


N. THOMPSON.

Improvement in Breech-Loading Ordnance.

No. 127,202.

Patented May 28, 1872.



Witnesses:
Thos. Harnes
Henry T. Brown

Nathan Thompson

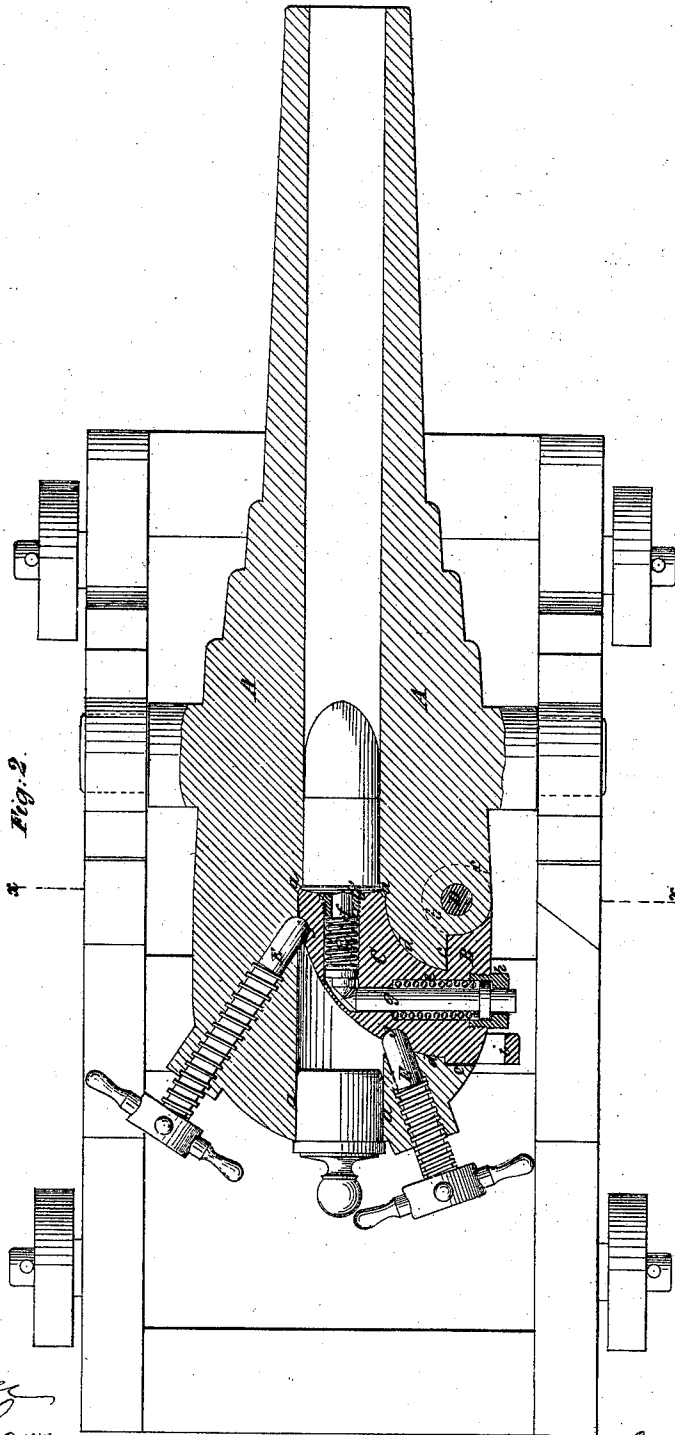
N. THOMPSON.

3 Sheets--Sheet 2.

Improvement in Breech-Loading Ordnance.

No. 127,202.

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Witnesses:

Geo. H. Hume
Henry J. Brown

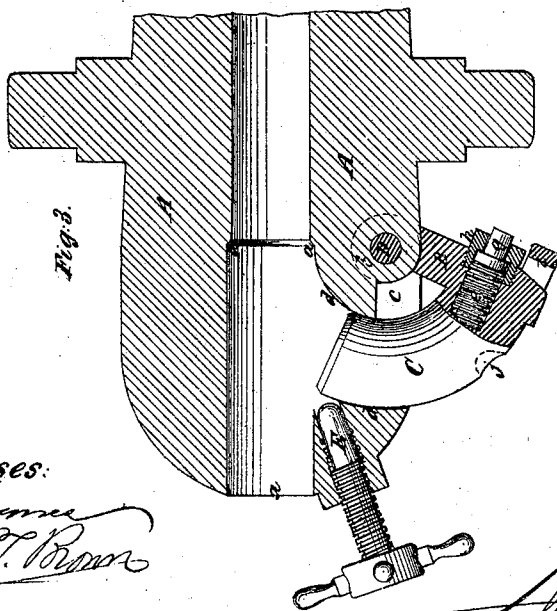
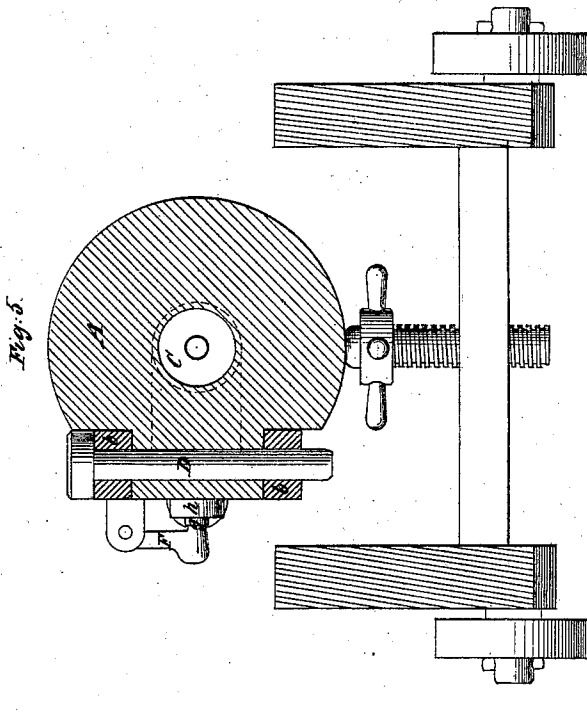
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Witnesses:

Fred Hume
Henry T. Brown

N. Thompson

UNITED STATES PATENT OFFICE.

NATHAN THOMPSON, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN BREECH-LOADING ORDNANCE.

Specification forming part of Letters Patent No. 127,202, dated May 28, 1872; antedated May 20, 1872.

To all whom it may concern:

Be it known that I, NATHAN THOMPSON, of the city of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Breech-Loading Ordnance; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing forming part of this specification.

This invention consists in a novel construction of a movable breech-piece and mode of applying the same to the gun. The breech-piece is composed of an arc-formed bolt, of a size and form in its transverse section to close the breech of the gun, and an arm or gate, to which the said bolt is attached, or in the same piece with which it is constructed, said arm or gate swinging from a center to which the arc of the bolt is concentric, and which is situated on one side of the gun, opposite or nearly opposite to the rear of the chamber. The opening provided in the gun for the breech-bolt to work in is of corresponding arc-form, commencing in the exterior of the gun on one side, in rear of the center of motion of the breech-piece, and curving forward toward the rear of the chamber of the gun. The bore of the gun is continued through the breech for the introduction of the charge when the breech-piece is open, and the breech, when closed, is secured by a screw or screws screwing obliquely through the breech of the gun, or by other suitable means. A gun with the breech-piece thus constructed and applied may be primed and fired in the usual or any suitable manner; but a part of this invention, the object of which is to provide for the firing of a primed cartridge, consists in a novel construction and arrangement of two firing-pins working in the breech-piece, and by which the impact of a hammer may be transmitted at a right angle to the blow. One of these pins is fitted to work in a direction parallel, or nearly so, with the bore of the gun when the breech-piece is closed, and projects through the end or face of the breech-bolt. The other works at right angles to the first one, and projects through the exterior of the breech-piece. The ends of the two, which come together, are made of conical form, so that when the projecting end of the outer one is struck by a hammer the cone at

its inner end acts like a wedge on the cone of the other one and drives it forward in a manner to make it impinge on the primed part of the cartridge.

The invention is illustrated in the accompanying drawing forming part of this specification.

Figure 1 is a side view of a gun with the improvement. Fig. 2 is a horizontal section, taken directly through the center of the bore, showing the breech closed. Fig. 3 is a section of the breech portion of the gun corresponding with Fig. 2, but showing the breech open. Fig. 4 is a top view of the breech-piece detached. Fig. 5 is a transverse vertical section of the gun in the plane indicated by the line *x x* in Fig. 2.

Similar letters of reference indicate corresponding parts in the several figures.

A is the barrel of the gun, and B C is the breech-piece. The barrel is bored through-out, and counter-bored slightly larger from the breech up to the rear of the chamber, as shown at *a a* in Figs. 2 and 3. The breech-piece is composed of the arc-formed bolt C, the arm or gate B radial to the arc of the bolt. The transverse section of the bolt C is of circular form, corresponding in size with the counter-bore *a a*. The arm or gate B is made of great depth in a vertical direction to give stability to the connection of the breech-piece with the gun, and it has lugs *b b* at the top or bottom to form a hinged connection with the wall of the gun. The arm or gate and the bolt may be made of a single piece of cast or wrought iron or steel, or be made of two separate pieces and firmly secured together by a screw or otherwise. A recess, *c c*, is cut in the wall of the gun on one side, and in rear of the chamber, for the reception of the arm or gate B, and mortises are made in this recess for the reception of the hinge-lugs *b b*. A hole is drilled vertically through the wall of the gun in front of the recess *c c*, and opposite to the rear of the chamber, for the reception of the pin D, which secures the arm or gate to the gun, and upon which the breech-piece swings, the said pin passing through the lugs *b b* of the gate. An opening, *d d*, is bored or otherwise produced in the direction of a horizontal arc through the side of the gun, concentric with the hole provided for the pin D, to receive

the breech-bolt C, with the form of which the said opening precisely corresponds. This opening crosses the counter-bore *a a* obliquely, and meets the chamber of the gun at the front of the said counter-bore, and the breech-bolt moves within it toward and from the chamber. The breech-bolt C may be of square or other polygonal form in its transverse section, and in such case the opening *d d* must be of corresponding form. I, however, prefer that in all cases the end of the bolt should be round. E is a screw screwing through a tapped hole made obliquely through the breech or rear portion of the side of the gun, between the counter-bore *a a* and the breech-bolt opening *d d*. This screw, which is worked by a handle at its outer end, enters, when the breech-piece is closed, into a notch or recess, *j*, in the back of the breech-bolt, and serves to secure the breech-piece in place. Another screw may be applied in the same way on the opposite side of the counter-bore *a a* to assist in securing the breech-bolt. *f* and *g* are the two firing-pins, fitted to holes bored at right angles to each other through the breech-piece B C, the pin *f* projecting through the face or front end of the breech-bolt in such manner as to be parallel with the bore of the gun when the breech-piece is closed, and the pin *g* projecting through the exterior of the breech-piece. These pins meet each other, their meeting ends being of conical form, as shown in Fig. 2; and each has a spiral spring, *e*, applied to it within the hole provided for it in the breech-piece in such manner as to exert a constant tendency to press it backward. The outer pin *g* is confined within the breech-piece by a fixed collar, *h*, screwed into the breech-piece from the exterior, and the inner pin *f* is confined by a collar, *h'*, screwed into the breech-bolt from the face thereof; but both pins are free to be moved inward by any force sufficient to overcome the outward pressure of their springs. F is a hammer, attached to the exterior of the breech-piece in a manner to strike upon the pin *g*. The blow upon this pin driving it inward causes its conical end to act like a wedge

upon the conical end of the pin *f*, and so to drive forward the latter pin in such manner as to make it impinge upon and explode the priming. The hammer may be operated by a spring under the control of a trigger or otherwise. These pins will, of course, only be used with fixed ammunition, or ammunition containing, or with, attached priming. They may be used in connection with any other sort of breech-piece when it may be desired to transmit the force of the blow of the hammer at an angle. The breech-piece thus constructed and applied may be swung on its hinge to open and close it by inserting a lever into a hole provided in a lug, *i*, on the exterior of the gate B, the screw E being screwed back out of the notch *j* before opening, and being screwed forward again into the said notch after closing. The charge is inserted directly through the counter-bore *a a* into the chamber of the gun while the breech is open. The mouth of the counter-bore is fitted with a tomion, G, the object of which is merely to protect the counter-bore and breech-bolt from the weather and from dirt. A cam with attached lever may be substituted as the equivalent of the screw E for locking the breech-piece.

What is here claimed, and desired to be secured by Letters Patent, is—

1. The breech-piece, composed of the arc-formed bolt C and the gate or arm B, and arranged, substantially as herein described, to work on a hinge or hinges at the side of the gun in an arc-formed opening in the latter, through which the bolt moves toward and from the chamber.

2. The combination, with the said breech-piece, of the screw E, arranged substantially as herein specified.

3. The firing-pins *f g* with impinging conical ends, applied and operating substantially as herein described.

NATHAN THOMPSON.

Witnesses:

FRED. HAYNES,
HENRY T. BROWN.