J. B. MOODY.

Breech-Loading Ordnance

No. 53,026 Patented Mar. 6, 1866.

Fig. 3.

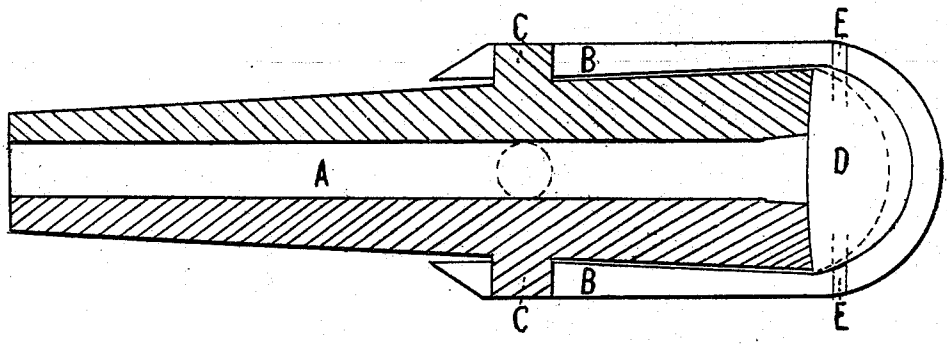


Fig. 2.

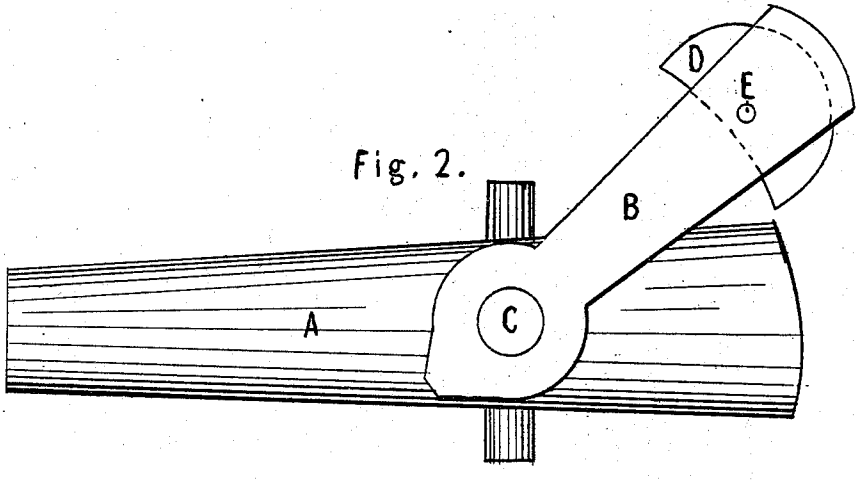
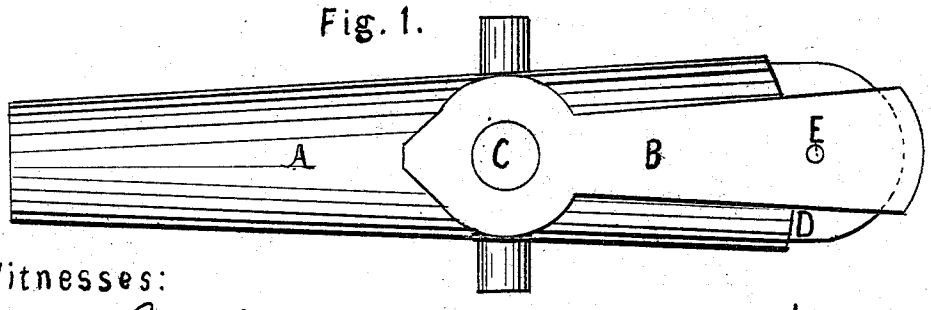


Fig. 1.



Witnesses:

M. C. Tucker

F. H. Hyphood

Inventor:

John B. Moody

UNITED STATES PATENT OFFICE.

JOHN B. MOODY, OF CINCINNATI, OHIO.

IMPROVEMENT IN BREECH-LOADING ORDNANCE.

Specification forming part of Letters Patent No. **53,026**, dated March 6, 1866.

To all whom it may concern:

Be it known that I, JOHN B. MOODY, of Cincinnati, in the county of Hamilton, and in the State of Ohio, have invented certain new and useful Improvements in Breech-Loading Cannon; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference thereon marked.

Figure 1 is a plan view, showing the breech when closed. Fig. 2 is a plan view, showing the breech opened from left to right. Fig. 3 is a longitudinal vertical section.

The nature of my invention consists, first, in the combination, with an oscillating cannon, of a laterally-swinging stirrup and an oscillating breech-piece, the said breech-piece having its front face curved on an eccentric to correspond with the eccentric curve of the rear of the cannon, and so as to always match the same whatever may be its position. The rear end of said breech-piece is a semicircle to match the semicircular curve of the inside of the stirrup. This stirrup swings on two additional trunnions that are perpendicular to the bearing-trunnions and on a line with the axis of the bore of the barrel, and passed from around said extra trunnions to and around the open breech end thereof and over and around said breech-piece.

Second, my invention consists in that the rear end of the cannon and the face of the breech-piece are not laid off from the same center that the stirrup swings on, but from an eccentric center one and a half inch (more or less) to the right of said center when standing at the muzzle and facing the breech of the gun, thus having the breech-piece laid off from the eccentric center, and swinging off and on with the stirrup which swings on the concentric center—that is, on the center of the additional trunnions. Thus by closing the breech it forms a self-adjusting radial lock-joint, insuring perfect frictional contact of the breech-piece and rear end of the barrel.

The bore of the gun is enlarged or tapered in the rear part, its diameter being sufficient to admit a cartridge-case or gas-check of suitable size for the caliber of the gun. The closed end of the case is curved on the outside to conform to the general surface of the rear end of the barrel, and is also provided with a hole in its center for the vent and to insert an instrument for withdrawing the case from the gun after firing.

The radial lock-joint is formed so as to always match, whether the gun is more or less elongated by expansion or contraction—that is, whether the breech-piece swings on farther or not so far, or whatever may be its position when closed, the joint is always perfect and tight, and the breech-piece, by oscillating in the rear of the stirrup, always adjusts itself in closing to the rear end of the gun, thus forming the self-adjusting frictional radial lock-joint.

The peculiar effect produced by my invention is as follows: This peculiar construction and combination produces in an instant after the explosion of the powder and the discharge of the projectile a right lateral motion of the breech and stirrup, which movement is caused, in part, by the sudden pressure or blow of the rear end of the canister or gas-check against the inclined circular breech-piece, and in part by the rebound of the breech-piece against the rear of the cannon caused by the return of the fibers of the stirrup to their normal position immediately after their expansion by the explosion. The breech thus thrown open exposes the surface of the breech portion of the barrel of the cannon, and also of the canister, to the cold atmosphere, which atmosphere, passing through the vent-hole of the canister, three-eighths of an inch (more or less) in diameter, into the gun, produces instantly after the discharge, but not simultaneously with it, a complete ventilation and an immediate removal of the gas and caloric generated by the explosion of the powder, thus preventing the heating of the gun.

The canister, by retaining its exact position after the firing and its not being blown back against the open breech-piece, demonstrates that the breech-piece has not had time to be thrown open until after the ball has left the muzzle and the force of the explosion of the powder has been expended, after which the unheated canister can be withdrawn by the little finger.

To enable those skilled in the art to make and use my invention, I will describe its construction and operation, viz:

The method herein described of constructing, arranging, and operating the breech of breech-loading cannon by so forming the rear part of the barrel as to present an outer cylindrical surface, being the arc of a circle laid off from the eccentric center before described, and by combining therewith a breech-piece having an inner surface conforming to it, and shaped as before described.

A in Figs. 1 and 2 represents the barrel, it being bored from end to end, so that a through-passage exists, and its rear end being curved in the arc of a circle struck from an eccentric center one and a half inch (more or less) to the right of the axis of the bore when standing facing the muzzle and on a line with the bearing-trunnions.

B B represent a strong stirrup passing from the additional trunnions C C to and around the open end of the barrel, and also over and around the breech-piece D, forming at the rear an oscillating joint, as shown by the dotted lines.

D represents the breech-piece, which is made in the shape of a semicircle, the largest part elongated two inches (more or less) and sufficiently to allow strength enough for two pins, E E, to pass through the stirrup and enter this piece D to hold it to its place in the stirrup, and on which pins it oscillates in the stirrup. The face of this breech-piece is laid off from the same eccentric center that the rear end of the gun is laid off from, and forms, when closed by swinging it hard up from right to left, a tight, binding, self-adjusting frictional lock-joint with the rear end of the barrel, as shown, when closed, and having a vent-hole running obliquely through it to the center of the rear of the bore of the barrel; or the vent-hole may be in the barrel.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. Forming the semicircular end of the breech-piece with the same radius and center as the inside semicircle of the end of the stirrup, substantially as and for the purposes set forth.

2. Pivoting the breech-piece D upon the pins E E, substantially as and for the purposes set forth.

JOHN B. MOODY.

Witnesses:
ED. E. TOUNLEY,
J. P. TRUMBOWER.