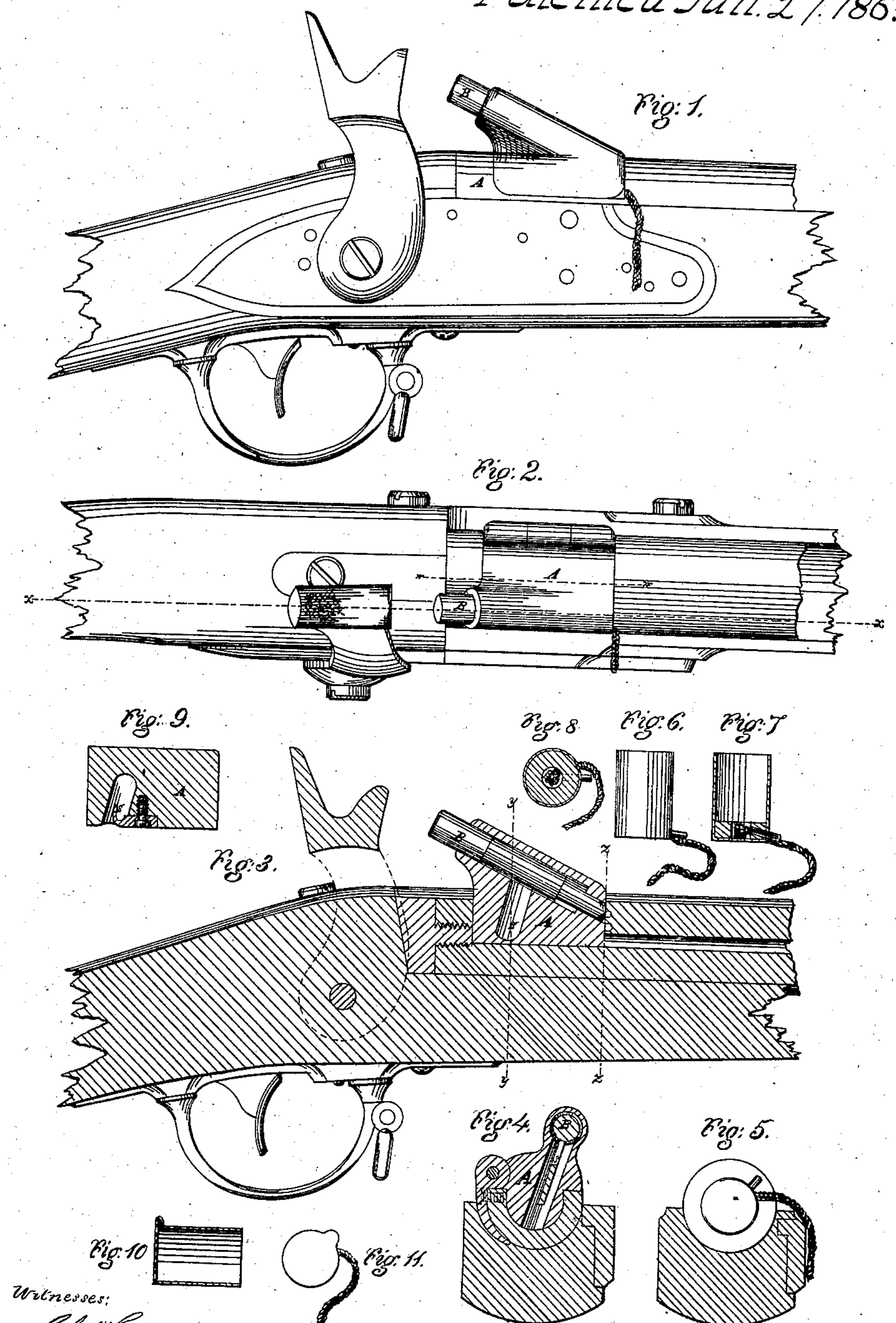
E. Maynard.

Breech-loadin Fire-arm.

No. 48423. Patented Jun. 27. 1865



Witnesses:

Chas. H. Anderson

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UNITED STATES PATENT OFFICE.

EDWARD MAYNARD, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. **48,423**, dated June 27, 1865.

To all whom it may concern:

Be it known that I, EDWARD MAYNARD, of the city of Washington, in the District of Columbia, have invented a new and useful Improvement in the Solid-Hinged Breech-Block of Breech-Loading Muskets; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of a portion of a breech-loading musket furnished with my improved hinged breech-block; Fig. 2, a top or plan view of the same; Fig. 3, a longitudinal section thereof in the line *x x* of Fig. 2, showing the relative arrangement of the hammer of the gun and the plunger in the breech-block; Fig. 4, a transverse section in the line *y y* of Fig. 3, showing the form given to the hinged breech-block, and also the diagonal hole in the same, in which the retaining-spring of the plunger operates; Fig. 5, a transverse section in the line *z z* of Fig. 3, showing the form of the base of a primed metallic cartridge of peculiar construction, which may be advantageously employed in connection with my present improvement in the breech-block; and Figs. 6, 7, and 8, respectively, an elevation, central vertical section, and a transverse section of this cartridge; Fig. 9, a longitudinal section of the breech-block in the line *w w* of Fig. 2; and Figs. 10 and 11, respectively, a central vertical section and a bottom view of another form of cartridge.

Like letters denote like parts in the several figures.

The musket now in use in the United States service, recognized and accepted as the regulation musket, is well known to be satisfactory to the Government in the matter of size, shape, and weight. Considering the fact that its harmonious proportions are the result of many experiments, and that they cannot be advantageously varied, I have endeavored to give to this finished arm all the advantages which are found in the modern breech-loading weapons (without impairing its established proportions) by the addition of an improved solid-hinged cone-seat to such muskets.

This improvement is described in the Letters Patent of the United States granted to me on the 30th day of October, A. D. 1860. Since that date the advantages attending the use of primed cartridges in breech-loading fire-arms have become so decidedly apparent as to lead me to seek so to improve the regulation musket, altered or manufactured in accordance with my patent of October 30, 1860, as to adapt it to the use of such cartridges. I have therefore substituted for the cone in the hinged breech-block A of such a musket a plunger, B, playing freely in an aperture pierced obliquely through the breech-block A in a direct line from a point in the rear of the usual cone-socket to a point a little above the notch cut in the side of the barrel of the gun, to receive the retracting thong or arm of the cartridge inserted in its chamber, this point, when the breech-block is closed, being also in apposition to a primed flange or offset formed upon the said cartridge, all as clearly shown in Fig. 3. The outer end of this rod or plunger B projects from the rear end of the breech-block in the place of the usual cone, so that it may be struck by the hammer of the gun, as ordinarily arranged, without any change in its position. It is of such a length as that when its outer end projects, as described, its inner or lower end will be flush with the front face of the breech-block, and will rest loosely against the primed flange or offset of the cartridge when the breech-block is closed. The plunger B is retained in this position, secured from accidental violent contact with the cartridge, and is prevented from turning by means of a spring, *s*, projecting up through a hole extending from the under side of the breech-block to the aperture in which the plunger works, Figs. 3 and 4. The lower end of the spring is secured in a recess formed upon the under side of the breech-block, as seen in Fig. 9, and its upper or vibrating end is received into a hole formed in the under side of the plunger B.

A simple set-screw inserted through the side of the breech-block and received into a notch or recess in the plunger, or any other equivalent device, may be substituted for the spring *s*; but I deem the employment of the spring as described peculiarly desirable, for the hole in which it operates may be advantageously em-

ployed as a channel through which to convey oil to the plunger for the purpose of facilitating its operation.

The end of the plunger is beveled off or slightly rounded, as shown in Fig. 3 of the drawings, so that if, from the possible defective action of the spring *s*, or from any other cause, it should accidentally project beyond the face of the breech-block, it will be forced back to its proper position by contact with the barrel of the gun.

The nose of the ordinary hammer used upon the regulation musket of most nations needs but to be cut off, as shown in the drawings, and the hammer perhaps slightly bent, in order to adapt it to use in connection with the improved plunger, and the lower portion of that end of the recess or loading aperture in the gun which is next to the chamber needs to be slightly enlarged or cut down to admit of the introduction of a flanged cartridge. These are the only alterations required in the musket proper, in addition to those set forth in my patent of October 30, 1860, to attain the desired improvement.

Any cartridge having an encircling priming-flange at its base, or which is primed at a single point (so arranged and devised as to fall in line with the end of the plunger when the cartridge is inserted in the gun and the breech-block is in its closed position) may be used in the musket improved as described; but the cartridges clearly represented in Figs. 6, 7, and 8 and 10 and 11 of the drawings obviate the necessity of an enlargement of the loading-aperture, and as they otherwise present peculiar advantages for use in connection with my present improvement, I have made them the subject of a separate application for Letters Patent.

By cutting down the nose of the hammer, as represented in the drawings, it is adapted to strike a direct blow upon the plunger. I thereby not only avoid the expense of a new hammer in altering the regulation muskets of most nations to the use of primed cartridges, but also perfect the action of the old hammer, for as it is made lighter there is less weight and consequent inertia to be overcome by the spring when it is released by the trigger, so that the movement of the hammer is quicker, while the blow is lighter, and therefore better suited to the primed cartridge.

The operation of the gun, improved as hereinbefore described, is simple. When loaded in the usual manner and ready for firing, the plunger of the gun, under the control of the spring *s*, rests with its outer end projecting from the rear end of the breech-block, and its inner end touching the flange or point of the cartridge in which the fulminate is placed. When the hammer is released by the trigger it falls directly upon the end of the plunger, and the blow, overcoming the influence of the spring *s*, acts immediately upon the priming of the cartridge, causing the discharge of the load from the gun.

Having thus fully described my improvement in breech-loading muskets, what I claim therein as new, and desire to secure by Letters Patent, is—

The combination of the retaining-spring *s* with the plunger B in the hinged breech-block of a breech-loading musket or other fire-arm, when the said spring is contained in a hole extending from the under side of the breech-block to the aperture in which the plunger works, substantially in the manner and for the purpose herein set forth.

The foregoing specification of my improvements in breech-loading fire-arms signed this day of September, 1864.

EDWARD MAYNARD.

In presence of—

GEO. W. MAYNARD,

J. H. H. DOTY.