

UNITED STATES PATENT OFFICE.

THOS. LEE, OF NEW YORK, N. Y.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 20,073, dated April 27, 1858.

To all whom it may concern:

Be it known that I, THOMAS LEE, of the city, county, and State of New York, have invented, made, and applied to use certain new and useful Improvements in Breech-Loading Fire-Arms; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, wherein—

Figure 1 is a vertical section of my improvements as in use. Fig. 2 is a side elevation of the hammer and priming apparatus, and Fig. 3 is a plan of the breech and apparatus for delivering the capsules or pellets to explode the piece.

Similar marks of reference denote the same parts.

The nature of my said invention consists in a peculiar arrangement of devices for opening and closing the breech of the fire-arm; also, in a manner of delivering pellets or capsules of detonating material as the hammer is discharged for firing the piece.

In the drawings, *a* is the barrel of the fire-arm, attached to the breech-chamber *b*, that is formed with or connected to the straps and lock-plate *c c*, which straps are attached to any ordinary stock or carriage for the fire-arm. Within the opening formed by the straps and lock-plate to the rear of the barrel I introduce the breech-piece *d*, set and moving on the pin or screw 1, and this breech-piece sets up against the rear end of the barrel with annular recesses 2 2, into which metal, such as platina or copper, is cast while the breech is up in its place, so that this metal, being compressed and not easily corroded, keeps the joint perfectly tight.

e is a lever on a fulcrum-screw, 3, carrying the curved blocking-piece *f*, the end 4 of which is made cam-shaped, so that as the said lever *e* is forced forward the breech *d* will be thrown up into place, and the said cam-shaped end 4 will pass over the part 5 of the rear of the mortise in which the parts move, and the breech *d* will thus be sustained firmly in its place against the explosion. When the lever *e* is drawn backward and downward into the position shown by dotted lines in Fig. 1, the breech *d* will turn back, exposing the open rear end of the barrel for the insertion of another cartridge; and, if desired, a pin or projection might be used on the blocking-piece *f* to draw

the said breech-piece downward and backward. The act of opening the breech is made to cock the hammer *g* by means of a detent; *h*, acting on the tail-piece *i* from said hammer.

k is the mainspring and shackle to the tumbler, as usual, and the hammer is to be discharged by any suitable trigger.

In order to cap or prime the piece, I make use of a circular box, *l*, containing balls or pellets of detonating powder. *m* is an arm actuated by a spring and tending to force said pellets toward the delivery-orifice 6 in a manner similar to the boxes to contain percussion-caps, which therefore needs no further description, the box being shown open in Fig. 2.

The manner which I adopt of discharging these pellets from the orifice 6, one at a time, into the pan 7 on the breech *d*, and excluding the fire from the next pellet, is as follows: 8 is a small rod or piston connected to the tumbler 9 of the cock *g*, running through the strap *c* to the hole 6, where it terminates with an incline or beveled end. 10 is a similar rod in a continuation of the hole in which the rod 8 moves, and formed with an inclined or beveled end also. (See dotted lines, Fig. 3.) This rod 10 is kept toward the hole 6 by a spring, 11, acting upon the end thereof. The operation of these parts is that when the hammer is cocked the rod 8 is drawn back, and a pellet passes into the hole in which it moves, and as the hammer descends into the pan 7 the said rod 8 comes up against the rod 10, and their inclined ends force the pellet out sidewise into the pan 7.

To prevent any fire passing to the hole 6, I make use of a shield, *n*, upon a center, 12, provided with an arm, 13, outside the strap or lock-plate *c*, and a spring, 14, to keep the said guard down over the hole 6 except at the moment the pellet is discharged therefrom, at which moment the cam-piece 15 on the cock *g* takes the end of said arm 13, turning back the shield *n*, and the further descent of the cock causes the cam-piece 15 to pass clear of the end of said arm 13, and the spring 14 returns the guard or shield *n* to its place over the hole 6 before the explosion takes place. Upon cocking the hammer, the arm 13 springs sidewise as the cam-piece 15 passes it on rising, and then returns beneath said cam-piece, said arm being formed as a spring, as seen in Fig. 3, to allow of this motion.

o is a perforation on the breech *d* to enter the cartridge, through which the touch-hole leads from the pan 7.

Having thus described my said invention and shown the operation of the same, I shall limit my claims as follows:

1. The breech-piece *d* on its center pin 1, in combination with the lever *e*, blocking-piece *f*, and cam-shaped end 4, the whole constructed and acting substantially as specified.

2. The manner herein described of deliver-

ing the detonating pellets and shutting off fire from the same by the use of the inclined-ended rods 8 and 10 and shield *n*, constructed and operating substantially as specified.

In witness whereof I have hereunto set my signature this 17th day of March, 1858.

THOMAS LEE.

Witnesses:

LEMUEL W. SERRELL,
THOMAS G. HAROLD.