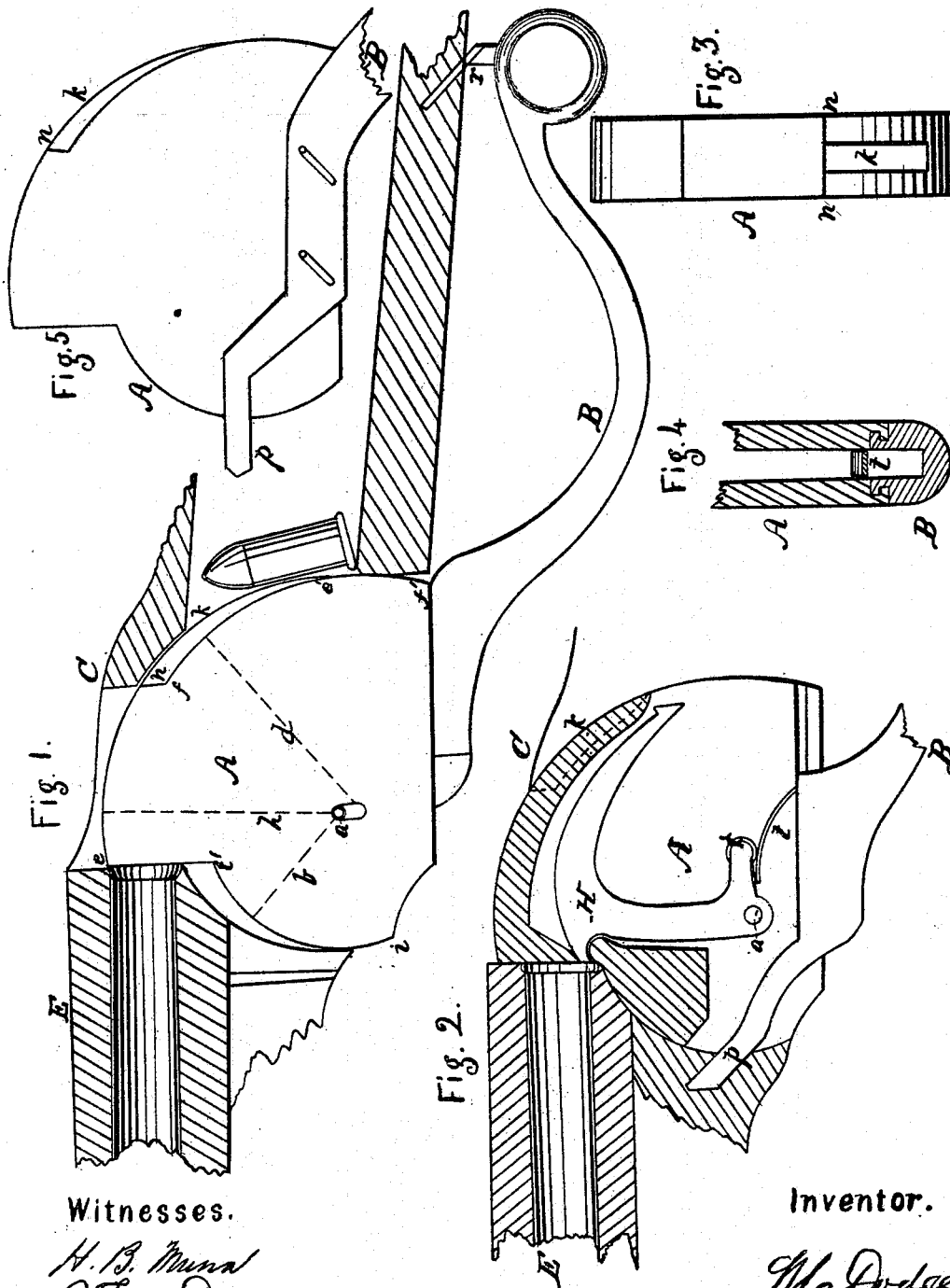


W. C. DODGE.
Magazine Fire-arm.

No. 52,547.

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Witnesses.

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IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 52,547, dated February 13, 1866.

To all whom it may concern:

Be it known that I, WILLIAM C. DODGE, of Washington city, in the District of Columbia, have invented certain new and useful Improvements in Fire-Arms; and I do hereby declare that the following is a clear, full, and exact description of the same, reference being had to the accompanying drawings, making part of this specification.

My invention relates to that class of fire-arms known as "magazine-guns," and in which the cartridges are fed into the barrel from the magazine, located in the stock in the rear of the breech-block, by means of a breech-block which has a rotary movement.

My invention consists in a novel manner of constructing and operating said breech-block, and in a novel method of constructing the lever-guard and connecting it to the breech-block.

Figure 1 represents a side view of my improved breech-block; Fig. 2, a longitudinal vertical section of the same in place as it is when the gun is ready to be fired. Fig. 3 is a top view of the same detached. Fig. 4 is a transverse vertical section of the block and lever-guard, taken on the line of $x x$ of Fig. 1.

In guns of this character there exist two requisites absolutely necessary to enable them to be successfully operated. In the first place the breech-block must be locked and held securely in position when the gun is to be fired, and in the second place the block must be so constructed and arranged that it can be readily unlocked and turned backward without being interfered with by the cartridges in the magazine, or injuring the latter.

The first object—that of locking the block—is readily accomplished by means of a notch or shoulder cut in its upper or rear edge; but it is obvious that when the block is turned back for the purpose of procuring a fresh cartridge from the magazine, the shoulder formed by cutting the locking-notch in the periphery or face of the block will strike against the point of the ball, if the latter lie horizontally, as in the Spencer gun; or if standing nearly vertical, as shown in Fig. 1, it will strike the ball on its side, and also the flange of the cartridge-shell at its base, by which means the ball will be disfigured and injured and the movement of the block stopped. In the Spencer gun

this difficulty is provided for by constructing the block in two parts, and having the upper portion drawn down into a recess in the other portion, so as to form an unbroken circle on that portion which comes in contact with the cartridges in the magazine; but this construction of the block is expensive, and necessitates making it in two or more pieces.

By my improvements I am enabled to accomplish both of the objects hereinbefore mentioned with a breech-block composed of a single piece, giving to it alternately a rotary and a vertical movement, as is necessary to accomplish the desired objects.

A represents my improved breech-block, which may be made of a single piece of metal; or, in case the hammer is to be located in its interior, as shown in Fig. 2, the sides of A may each be made of a single piece, the upper and front portion being filled in, as shown. The block A is pivoted on the pin a , the block being slotted, as shown, to permit it to move vertically, as hereinafter explained.

If preferred, the pin a may be fixed rigidly in block A, and move in slots in the sides of the breech-frame C, in which case the block and pin will both move together, the movements of the block being the same in either case.

The block A has its front portion, from i to i' , formed into an arc of a circle, of which the line b is the radius. The upper and rear portion, from e to e' , constitutes the arc of a larger circle, of which the line h is the radius, both of these circles or arcs being struck with a as their center. From i' to f the edge or face of the block A is left of its full and uniform thickness; but at f a vertical notch is cut on each side, as shown in Figs. 1 and 3, leaving a central rib or bridge-piece, k , extending from f to e' . On each side of this central bridge-piece k the periphery of block A is cut away to the line from f to e' , this line forming the arc of a circle, of which d is the radius, and the circle having its center at the lower end of the slot, as shown in Fig. 1.

It will be observed that the arcs $e e'$ and $f f'$ both form portions of a circle of the same diameter, but having different centers, the first being struck from the center at the upper end of the slot, and the latter from a center at the lower end of the slot.

C represents the breech-frame, which in-

closes the breech-block A on both sides, and has an opening cut through the top in such a manner as to leave a vertical face, *o*, to engage with the rear face of the shoulders *n*, formed by cutting away the block A at *f*, as previously described, a central groove being formed in the under face of C to receive the bridge *k* when the block A is shoved up into position for locking it, as shown in Fig. 2.

B represents the lever-guard, which is shown in Fig. 4 as being hollow or chambered out, in order that the mainspring *t* may be located therein. In order to leave an unobstructed space for the movement of the spring *t*, and at the same time permit a longitudinal movement of the lever-guard independent of the block A, the guard B is united to A by means of the ribs and grooves, as clearly shown in Fig. 4.

At the front end of B there is a tongue, *p*, which is simply a prolongation of B, made thin enough to pass through an opening provided for it in the lower front portion of block A, as shown in Fig. 2. The front end of this tongue *p* is inclined upward, as shown, and when the lever B is shoved forward the front end of *p* enters a recess formed to receive it, and having a corresponding inclination, said recess being formed in the breech-frame C at the proper point, as shown in Fig. 2. The lever B has a sliding motion of sufficient extent to withdraw the tongue *p* from the recess and bring it entirely within the block A, so as not to interfere with the rotary movements of the latter. At its rear end the lever B is provided with a stud, *r*, having horizontal projections on its sides, which also move in ways or grooves, having an inclination corresponding with that of the recess in front, in which the tongue *p* enters, a spring being used to keep the parts in place, if desired.

In Fig. 2 the breech-block A is shown hollow, its interior being cut away to permit the location of the hammer H therein, as shown, when it is desired to use this breech-block with a hammer that is cocked by the opening of the breech; but where the hammer is cocked by a separate operation, independent of the block, the latter may be made solid, in which case the lever B may be united to the block A by means of pins working in or through slots, instead of the manner shown in Fig. 4, the lever

B in such case not needing to be made hollow, as the spring will then be located elsewhere. It is also obvious that, if desired, the tongue *p* may be made to protrude in a horizontal line parallel with the barrel E, the vertical movement of A in such case being secured by attaching B by means of pins passing transversely through it and moving in inclined slots formed either in A or B, as may be desired, and as represented in Fig. 5.

The operation is as follows: The lever B is first drawn backward and downward far enough to withdraw the tongue *p* from the recess in C, the stud *r* being drawn out of its groove simultaneously, by which movement of the lever the block A is moved vertically a distance equal to the height of the shoulders *n*, by which movement it is unlocked, and can then be rotated in the usual manner, the reverse movements serving to carry the block back to its position and lock it securely in place. It will be observed that as the block A is turned backward the bridge-piece *k* comes in contact with the cartridges, and thus prevents their catching on the shoulders *n* and stopping the rotation of the block or injuring the bullets.

By these means I am enabled to construct a cheap, simple, and strong breech-block that can be securely locked and readily operated.

Having thus fully described my invention, what I claim is—

1. The breech-block A, provided with the notch or shoulders *n*, for locking it in position, and the bridge *k*, for enabling it to pass the cartridges in the magazine, substantially as shown and described.

2. I claim giving to the rotating breech-block A, when so constructed that all its parts shall move together, a vertical movement for the purpose of locking it, substantially as herein described.

3. I claim uniting the lever-guard B to the breech-block A, as shown in Fig. 4, or in any equivalent manner, by which the lever B is permitted to move longitudinally for the purpose of elevating the block A, substantially as set forth.

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Witnesses:

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