2 Sheets—Sheet 1.

J. LEE.

Magazine Fire-Arm.

No. 221,328. Patented Nov. 4, 1879.

Fig. 1.

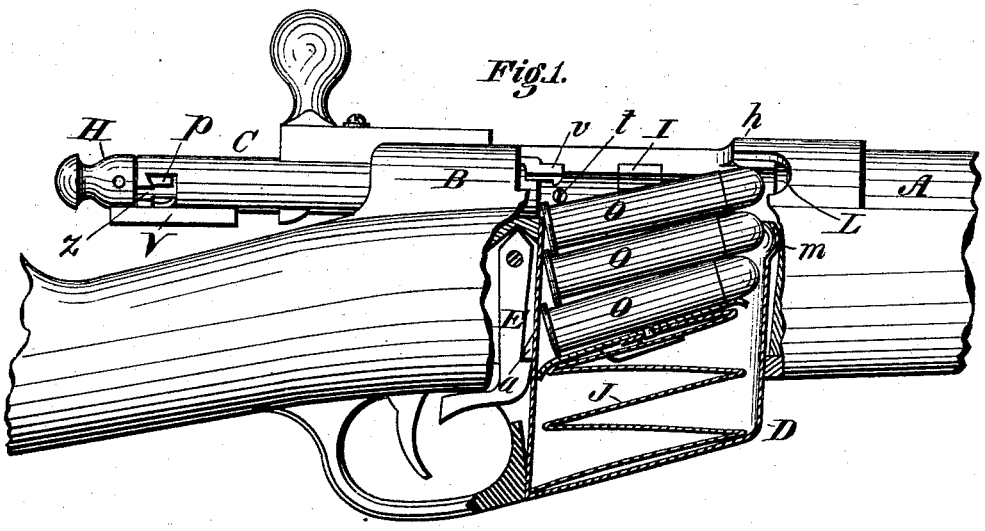


Fig. 9.

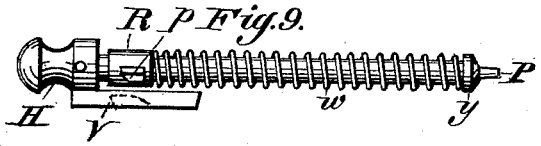


Fig. 2.

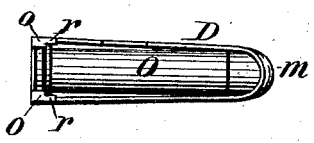


Fig. 3.

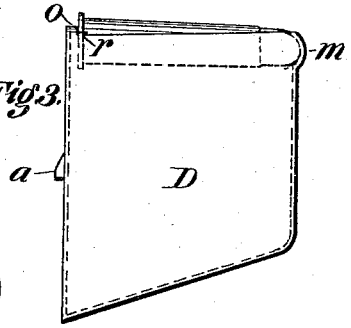


Fig. 7.

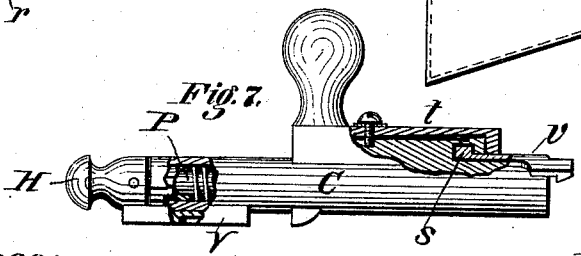
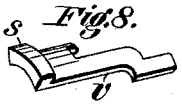


Fig. 8.



Witnesses:

Donn B. Tuttle

D. P. Lowe

Inventor:

James Lee,

by Dodger & Son,

Attys.

2 Sheets—Sheet 2.

J. LEE.

Magazine Fire-Arm.

No. 221,328. Patented Nov. 4, 1879.

Fig. 4.

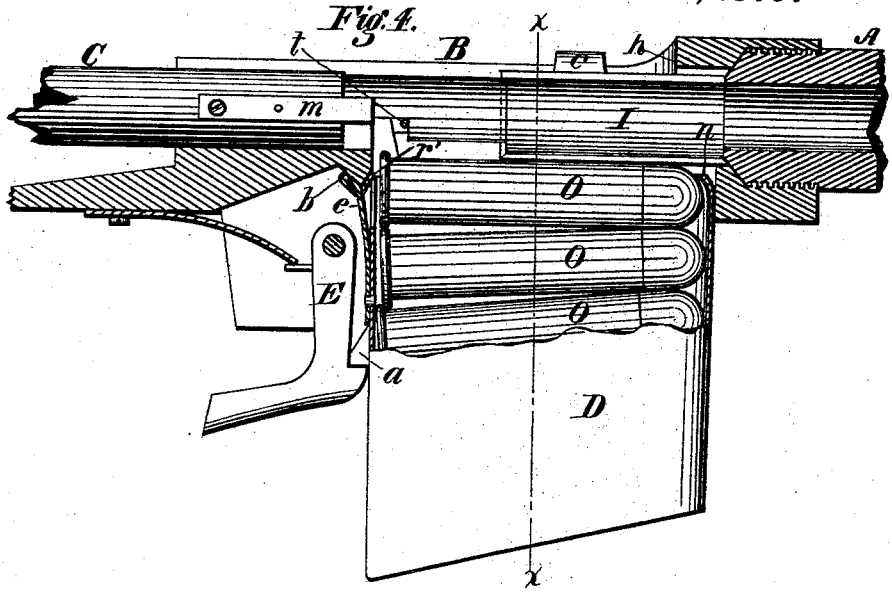


Fig. 5.

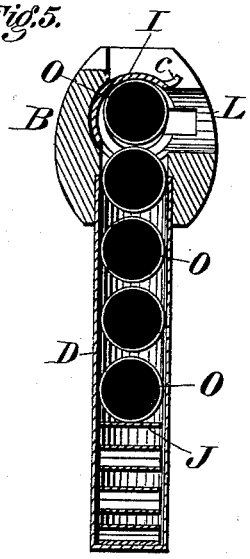
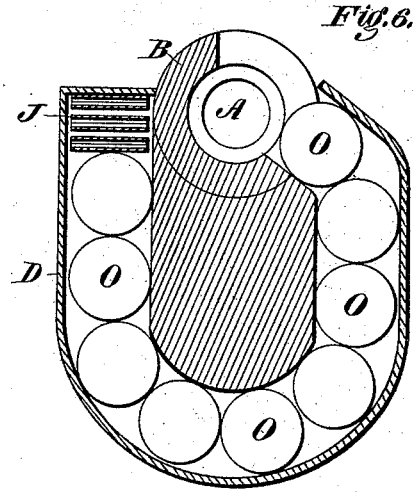


Fig. 6.



Witnesses:

Donn S. Twitchell

D. P. Cowl

Inventor:

James Lee

by Dodger & Son,

Attys

UNITED STATES PATENT OFFICE.

JAMES LEE, OF ILION, NEW YORK.

IMPROVEMENT IN MAGAZINE FIRE-ARMS.

Specification forming part of Letters Patent No. **221,328**, dated November 4, 1879; application filed September 6, 1878.

To all whom it may concern:

Be it known that I, JAMES LEE, of Ilion, in the county of Herkimer and State of New York, have invented certain Improvements in Magazine Fire-Arms, of which the following is a specification.

My invention relates to that class of guns known as "bolt-guns;" and the invention consists in constructing the gun so that it can be used in the ordinary manner as a single-loader, and can have a detachable magazine applied to it, and be used as a magazine-gun.

It further consists in a novel construction of the magazine or case, all as hereinafter more fully set forth.

Figure 1 is a side elevation of the breech portion of a gun constructed on my plan with the magazine attached, a portion being shown in section. Fig. 2 is a top-plan view, and Fig. 3 a side elevation, of the magazine detached. Fig. 4 is a view similar to Fig. 1, showing the magazine modified in construction. Fig. 5 is a transverse vertical section on the line *x x* of Fig. 4; and Fig. 6 is a transverse section, showing a modified form of constructing and applying the magazine or cartridge-case. Fig. 7 is a side view of the breech-bolt detached, with portions in section. Fig. 8 is a perspective view of the extractor detached; and Fig. 9 is a side elevation of the firing-pin with its spring and collar shown detached from the bolt.

In the drawings, A represents the barrel; B, the receiver or shoe; and C, the sliding breech-bolt of the arm, which, except as hereinafter stated, is made like an ordinary bolt-gun.

The bolt C may be made in the ordinary way; but the extractor, instead of being a spring-hook, is made rigid and of the form shown in Figs. 7 and 8. Its rear portion is made to fit the exterior surface of the bolt, on which it turns loosely, it being held to the bolt C by having its rear portion fitted in a slot cut in the under surface of the rib on the bolt, as shown in Fig. 7, there being a shoulder, *s*, on the rear end of the extractor, which engages in a corresponding notch, and by which it is drawn back with the bolt.

In a recess in the top of the rib I fit a spring, *t*, as shown in Fig. 7, the front end having a shoulder that bears on the extractor to hold it down, and yet lets it yield to pass over the flange of the shell when the breech is closed. This arrangement permits the extractor to remain stationary while the bolt is turned to lock or unlock it. It is readily inserted or removed by simply drawing the bolt part-way back, then swinging the point over to the left as far as possible it can be slid sidewise out of the recess in the rib, yet will not drop out of its own accord.

The bolt C is made tubular from its rear end to near the front, and through the front end is a small central hole of proper size for the point of the firing-pin to pass through. At its rear end the bolt C has a longitudinal slot, *z*, cut in one side, with an offset, as shown in Fig. 1, the front edge of the shoulder formed by this offset being beveled backward, as there shown.

The firing-pin P, as shown in Fig. 9, is a straight bolt of a proper length to reach through the breech-bolt C from end to end, its rear projecting end being provided with a knob, H, by which it can be drawn back to the half or the full cock position while the breech-bolt remains closed. Near its front end this firing-pin P is provided with a collar or shoulder, *y*, against which the front end of the spiral spring *w* bears, the rear end of said spring bearing against a sleeve or collar, R, placed loosely on the pin, as shown in Fig. 9. On one side of this sleeve *w* is a small lug or projection, *p*, of such a size as to pass readily into the slot *z* in the bolt C, and which, by being turned into the offset of said slot, will engage against its beveled or dovetailed face, as shown in Fig. 1, thereby locking the firing-pin with its spring securely within the bolt C, and yet permitting the firing-pin to be removed at any time by merely disengaging the projection *p* of the sleeve R from the offset in the side of the bolt C. To the under side of the knob H of the firing-pin P is secured a small bar, V, which is arranged to slide under the rear end of the breech-bolt C, and which works in a groove made for it in the rear end of the receiver, as shown in Figs. 1 and 9. When the firing-pin is drawn back, either by drawing back the breech-bolt or by drawing back the firing-pin separately by the hand, the sear engages against the front end of this bar V, and thus holds the pin cocked ready for firing. There

is also a half-cock notch in this piece V, as indicated in dotted lines, Fig. 9. This method of construction is simple and cheap, and while it enables the gun to be cocked with the breech closed as well as opened, and to be carried at half-cock, it also enables the firing-pin to be removed at any time and replaced without the use of any tool.

I cut a slot through the bottom of the receiver of such a size as to permit a cartridge to pass through it sidewise, as shown in Fig. 1, the receiver also having a portion, *h*, extended backward on the top in rear of the barrel, as shown in Figs. 1 and 4, to prevent the cartridges from being thrown out at the top as they are forced up from below, this part *h* being cut away at the right-hand side, as shown at L, Fig. 1, to give room for a shell or cartridge to be thrown out when withdrawn from the barrel.

A recess is cut on the inner face of the chamber of the receiver, into which is fitted a curved sliding plate, I, as shown in Figs. 1, 4, and 5, this plate being capable of being slid or pushed around in its recess, so as to lie across the slot in the bottom of the receiver when the arm is to be used as a single loader, its object and function being to enable the cartridges to be shoved in through the passage-way in the top of the receiver in the usual manner with single-loading bolt-guns by closing the slot or a portion of it, so as to prevent the cartridge from dropping down through the same. When the arm is to be used as a magazine-gun this slide I is shoved or drawn up, as shown in Fig. 5, in which case it will leave the slot in the bottom of the receiver open, so that the cartridge can be fed up through said opening from the case or box below.

In order to enable the gun to be used as a magazine-arm in cases of emergency, I provide a detachable magazine or cartridge-holder, D, of such a shape and size that it can be readily attached to the under side of the gun in front of the trigger-guard, as shown in Fig. 1, so as to deliver the cartridges therefrom through the slot in the bottom of the receiver, as represented in Figs. 1, 4, and 5. The intention is to have these cartridge boxes or holders so made that a number of them can be filled with cartridges, which shall be retained therein, and be carried by the soldier, and when required be quickly attached to the gun and used one after another.

To this end I make this box or detachable magazine D of such a width and thickness as to permit the cartridges to be placed therein sidewise, one upon another, as shown in Figs. 1, 4, and 5.

It will be observed that the box is made deeper at its rear than at its front end, which is for the purpose of allowing the cartridges to lie therein in an inclined position, and with their flanges overlapping one another, as shown in Fig. 1.

As represented in Figs. 1, 2, and 3, the front edge of the box D, at its upper edge, is provided with a projection, *m*, the inside of which is concave to permit the end of the bullet to engage therein, as shown in Fig. 3. At the rear end of the box it is provided at the top with inwardly-inclining flanges or shoulders *o* and *r*, as shown in Fig. 2, the shoulders *o*, when the cartridge is pressed forward with its front end in the cavity *m*, holding it there, while the flanges *r* prevent it from being pressed upward at its rear end, as shown clearly in Figs. 2 and 3.

By these means it will be seen that the box D can be filled with cartridges, which, being pressed upward by the spring J, secured in the bottom of each box, as shown, will hold the upper one in the position shown in Figs. 1 and 2, thereby preventing them from dropping or being forced outward while the box is detached or being handled.

When it is desired to have the cartridges pass from the box up into the receiver, after the box is attached, it is only necessary to press the upper one down slightly at the head, so it will pass back under the shoulders *o*, which will release its front end from the cavity *m*, when it will at once be elevated by the spring, and will then occupy the position shown in Fig. 1, its head rising sufficiently as it is thus forced upward and a little forward for the front end of the breech-bolt C to strike it, and thus shove the cartridge forward into the chamber of the gun.

As the first cartridge has its head depressed, so as to release its point from the cavity *m*, as above described, all the others are at the same time made to assume the inclined position represented in Fig. 1, so that thereafter each will have its front end thrown out of the box first, the head being held down by the shoulders *r* until released therefrom by being pushed forward by the bolt C, and thus the cartridges can be fed from the box D into the gun as fast as the bolt can be operated. As soon as one box is exhausted it is detached and replaced by another, and thus the firing can be continued with great rapidity.

Where the gun is made with a full stock, as is usually the case with bolt-guns, an opening or slot will of course be made in the stock, as shown in Fig. 1, to permit the box D to be applied so as to present its cartridges through the slot in the bottom of the receiver. The box may be held fast by any suitable means; but a very simple plan is to have a spring-catch, E, secured in the stock or receiver, as shown in Figs. 1 and 4, so as to engage under a beveled projection, *a*, on the rear edge of the box. With this arrangement it is only necessary to shove the box into the opening, and it is at once secured ready for operation. To detach it, it is only necessary to draw back the catch E and pull out the box.

It will of course be understood that when it is desired to feed the cartridges from the box, the slide I will be drawn up, as shown in Fig. 5, and that if desired to have the magazine loaded and ready for use in an emergency, the

arm in the meantime being used as a single-loader, the loaded box D will be attached, and the slide I turned down, thus acting as a cut-off or stop to prevent the cartridges from escaping from the box into the receiver.

In Fig. 4 I have shown the magazine or box D as being somewhat modified in construction. In this case, instead of the cavity or pocket *m*, there is simply an inturned lip, *n*, at the front upper corner; and at the opposite end there is applied externally a flat spring, *e*, which has its upper end formed into two inclined arms, *b* and *r'*, the latter projecting over into the box when the latter is detached, and by thus coming over the rear end of the cartridges both holds it down and at the same time keeps the cartridge from sliding backward from under the lip *n* at the front, and thereby serves to hold the cartridges in the box.

When the box D is shoved into place, as represented in Fig. 4, the rear inclined arm, *b*, of the spring strikes against an incline or a pin, or any similar object, thereby drawing the spring back, so that its arm *r'* will no longer interfere with the movement of the cartridges, it being thus shown in Fig. 4.

In Fig. 6 I have shown still another modification. In this case the magazine or cartridge-holder D is made to encircle the gun-stock, instead of being inserted within an opening therein, and it has its mouth arranged to deliver the cartridges into the receiver through the top opening, this latter being cut a little lower down on the right-hand side than usual, as shown, so as to give room for the cartridges to enter and for the empty shells to be thrown out, as usual. In its general idea and mode of operation this is the same as the plan previously described, and it is only described in order that parties may adopt whichever plan or modification may be most convenient in practice.

It will be seen by examining Figs. 1 and 3 that the magazine or cartridge-holder has its front and rear ends of unequal lengths, the rear end, or that at which the heads of the cartridges rest, being the longer of the two, and that it has one side left open, so that the cartridges can pass out through said open side into the proper position to be shoved directly into the chamber of the gun, and that this form of these cartridge-holders is essential to the proper working of the arm when used as a magazine-gun.

It is of course understood that the bolt C is to be provided with a hook-extractor, as shown at *v*, and a stop, *t*, for the head of the shell to strike against as it is drawn out, so as to throw it sidewise out of the receiver, these, however, being old and well-known devices.

One advantage of this manner of applying magazines is that it does not materially increase the weight of the arm, and, being located centrally, whether full or empty, it does not change the balance of the arm, as magazines do when applied under the barrel or in the butt-stock. As its bottom does not project below the trigger-guard and but slightly below the stock at its front edge, it does not interfere with the handling of the arm or render it clumsy.

Having thus described my invention, what I claim is—

1. In combination with a bolt-gun having an opening through the bottom of its shoe or receiver, a detachable magazine or cartridge-holder, with devices substantially such as described for securing the magazine to the gun, the whole being constructed and arranged to operate substantially as set forth.

2. The curved sliding plate I, in combination with a receiver having an opening through its bottom, when arranged to operate substantially as described.

3. The detachable magazine D, provided with the cavity *m* and the inwardly-projecting shoulders *o* and *r*, or their equivalents, all constructed and arranged to operate substantially as described.

4. The extractor *v*, provided with the shoulder *s*, in combination with the bolt C, having a corresponding recess in its rib, and the spring *t*, all arranged to operate substantially as described.

5. The firing-pin P, provided with the loose sleeve or collar R, having the projection *p*, in combination with the tubular breech-bolt C, provided with the slot *z*, having an offset for the projection *p* to engage in, substantially as shown and described.

6. A detachable magazine or cartridge-holder, D, having its front and rear ends of differing lengths, with one of its sides or edges open for the insertion and removal of the cartridges, and provided with a spring-follower and cartridge-retaining devices, substantially as and for the purpose herein set forth.

JAMES LEE.

Witnesses:
F. C. SHEPARD,
P. REMINGTON.