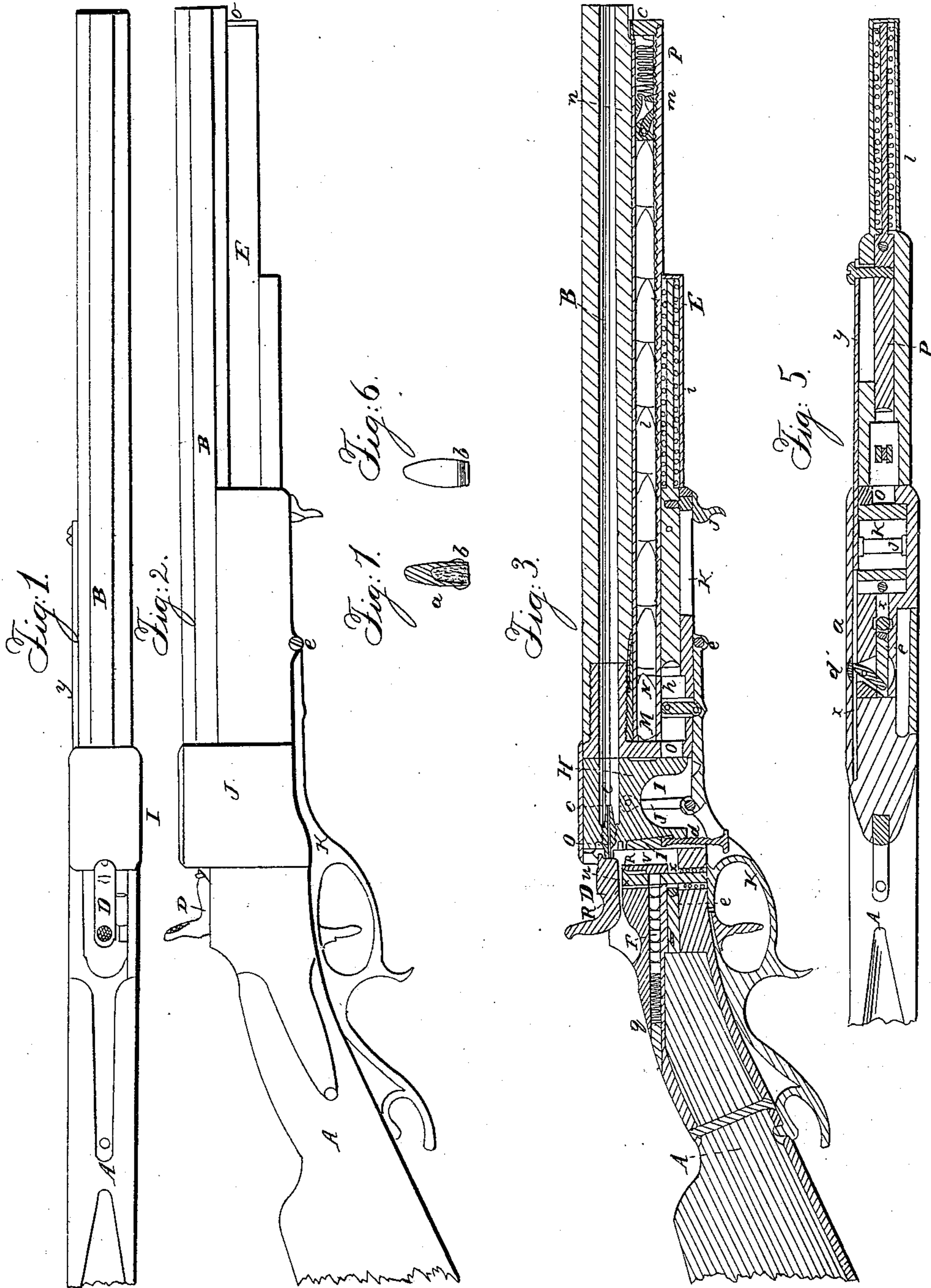


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Magazine Fire-Arm.

No. 13,474.

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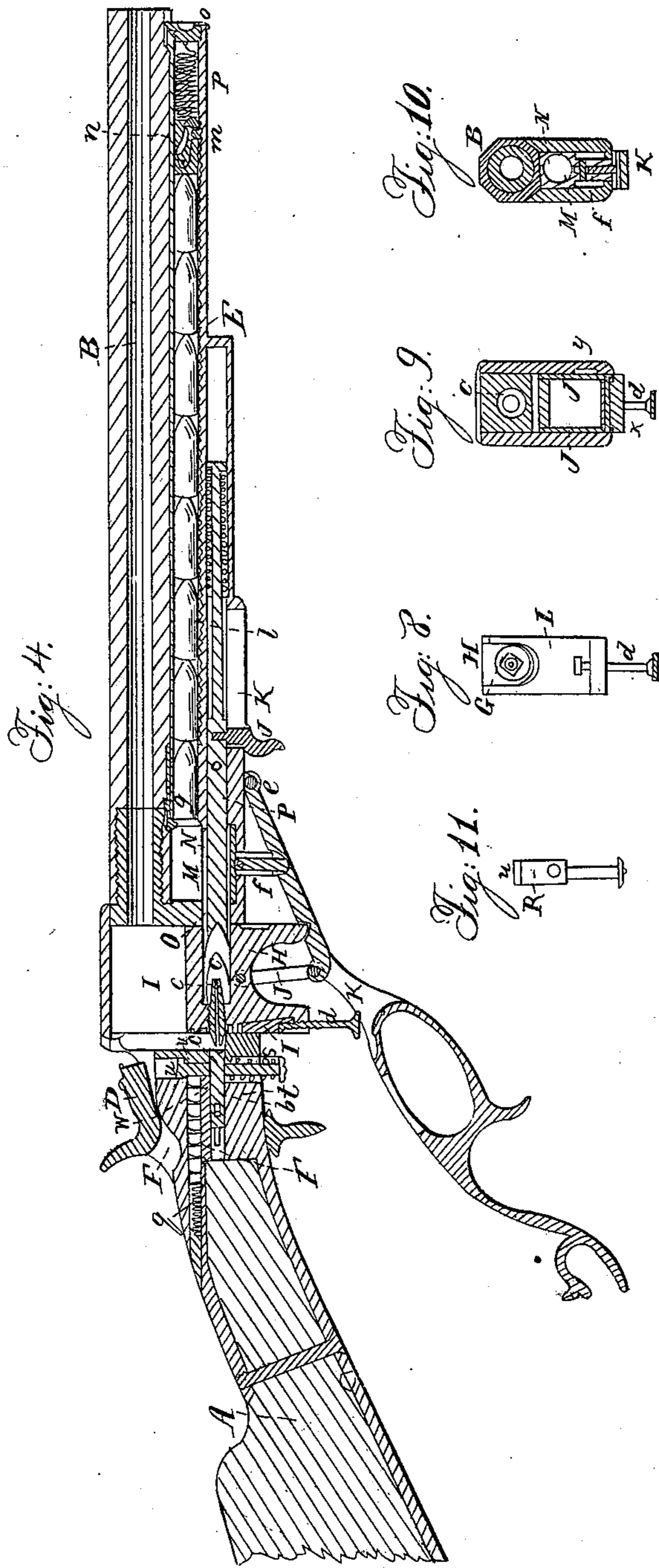


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UNITED STATES PATENT OFFICE.

JOHN SWYNEY, OF CHARLESTOWN, ASSIGNOR TO JOHN SWYNEY AND JAMES DANDRIDGE, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN BREECH-LOADING MAGAZINE FIRE-ARMS.

Specification forming part of Letters Patent No. 13,474, dated August 21, 1855.

To all whom it may concern:

Be it known that I, JOHN SWYNEY, late of Boston, but now residing in Charlestown, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Breech-Loading Fire-Arms; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, letters, figures, and references thereof.

Of the said drawings, Figure 1 represents a top view of my improved breech-loading fire-arm. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical central and longitudinal section of it. Fig. 4 is a similar section, taken so as to exhibit the relative position of the parts when in the act of loading, the charge-chamber being down, and the rammers in the position they occupy when a charge or cartridge is just driven home, and the percussion-nipple just capped, the hammer being represented on half-cock. Fig. 5 is a horizontal section taken through the axes of the rammers, exhibiting a part of the mechanism by which a cap is forced on the percussion-nipple at the same time that a charge or cartridge is forced into the charge-chamber.

Such other figures as may be necessary for a complete description and delineation of my invention will be hereinafter referred to and described.

In the said drawings, A represents the stock or handle of my improved fire-arm. B is the barrel. C is the charge-chamber; D, the hammer; E, the magazine for the cartridges or charges; F, the magazine for percussion-caps, and G is the percussion-nipple.

My improved fire-arm can be used for firing common cartridges, although it is peculiarly adapted for firing loaded slugs constructed, as shown in Figs. 6 and 7, the former of which is a side view and the latter a central and longitudinal section of one of those slugs. They are constructed somewhat similar to the well-known Minie ball; but instead of having a metallic plug inserted in them, the recess in the ball or slug is loaded or filled with powder, as shown at *a* in Fig. 7, which is kept in place by means of a piece of cloth or other suitable material being placed over the opening and fastened to the slug by tying a piece of thread round it, as seen at *b* in Figs. 6 and 7.

I shall now proceed to describe the construction of my improved fire-arm. The block H, in which the charge-chamber C is formed, is constructed as shown in Figs. 3 and 4, and a rear elevation of it is shown in Fig. 8. It is made so as to slide freely in a vertical direction in a box or chamber, I, formed at the rear end of the barrel B.

The percussion-nipple G at the rear end of the chamber C is constructed in a similar manner to the nipples in common use, with the exception that it is made so as to project into the chamber C far enough to reach about half-way in the powder when the chamber is loaded, the part of the nipple which projects into the chamber C being made tapering, as shown at *c* in Figs. 3 and 4, for the purpose of punching or forcing its way through the covering of the loaded slug or cartridge into the center of the powder, so that when a cap is exploded on the nipple the fire will be communicated to the center of the powder first, thereby insuring a more effective or powerful discharge from the same quantity of powder than would be obtained by communicating the fire in the first place to the external surface of the powder.

The chamber C, as in most breech-loading fire-arms, may be made some larger in diameter than the bore of the barrel.

The block H is connected to the guard K (which is also a lever, having its fulcrum at *e*) by means of two connecting-rods, J J, as seen in Figs. 3 and 4, also in Fig. 9, which is a vertical and transverse section taken through the block H and the connecting-rods J J. At the rear or nipple end of the block H, I place a wedge, L, for the purpose of pressing it (the said block) against the rear part of the barrel when the chamber C is in line therewith, such wedge being moved up or down by turning a small male screw, *d*, which works through a female screw formed in the lower part of the block H, and is connected to the wedge L, as shown in the drawings.

Beneath the barrel I place the magazine E, which is a round tube with a bore sufficiently large to allow the loaded slugs or cartridges to slide freely within it. At the rear end of the magazine E, I place a carrier, M, which is connected to the guard K by means of a rod or link, *f*. (See Figs. 3 and 4, and also 10, which

is a vertical and transverse section taken through said carrier and its link *f*.) This carrier has a hole, *N*, made through it, about equal in diameter with the bore of the magazine *E*, and when the guard *K* is up, or in the position as shown in Figs. 2 and 3, the hole *N* will be in line with the bore of the said magazine.

In Figs. 3 and 4 I show the position of loaded slugs in the magazine *E* in red. In Fig. 3 the rearmost slug is shown as having entered the hole *N* in the carrier *M*, which carrier should be some shorter than the slug or cartridge, so as to have the end of said slug or cartridge project a little beyond the forward part of the carrier *M* and into the magazine, so as to keep the next slug or cartridge a short distance off from the said carrier. Now, when the guard or lever *K* is moved downward, or into the position as seen in Fig. 4, it will simultaneously move (by means of the rods or links *J J* and *f*) both the block *H* and the carrier *M* downward into the position as shown in Fig. 4, so that the chamber *C* and the hole *N*, with its cartridge or loaded slug, will be in line with a hole, *O*, formed in the front part of the box or chamber *I*, and with each other, so that, by forcing the rammer *P* toward the block *H*, I drive or force a cartridge or loaded slug into the chamber *C*. When the carrier *M* is drawn down a spring, *g*, with a catch or bend on its end, (see Figs. 3 and 4,) springs down so as to prevent the next slug or cartridge from falling into the place which was occupied by the carrier *M* until said carrier is again pushed up into place, when it pushes the spring-catch from off the next slug or cartridge and allows said slug or cartridge to drop into the hole *N*. There is a small recess, *h*, made in the lower part of the magazine, to permit the projecting end of the slug or cartridge to pass down as the carrier *M* is being moved.

The rammer *P* is placed in line with the hole *O*, and is kept in position, as shown in Fig. 3, by means of a spiral spring, *i*, which, after the rammer has forced a slug or cartridge into the chamber *C*, will retract it (the rammer) into its former position. In forcing a cartridge or slug into the chamber *C* the rammer is moved by pressing the operator's hand on the handle *j*, which is screwed into or fastened to the rammer, and moves in a slot, *k*, as seen in the drawings.

In the lower part of the magazine or tube *E* there is formed a ratchet or rack, *l*, and in said magazine, and on top of the slugs or cartridges, is placed a sliding block, *Q*. Said block consists of a round or other proper shaped block of metal, made so as to slide freely in the bore of the magazine, and is provided with a catch or pawl, *m*, which is pressed against the teeth of the ratchet or rack *l* by means of a spring, *n*, as seen in the drawings. Now, as the cartridges or slugs are successively taken from the magazine *E* and fired off, the remainder fall into their places by the action of gravity, the barrel of the fire-arm being vertical, or

nearly so, in the act of loading, so the sliding block *Q* will follow on the top of the slugs or cartridges as they lower in the magazine, and the spring-catch *m* catches in the teeth of the rack or ratchet, so as to prevent it from sliding backward if the fire-arm is held muzzle down.

When the cartridges or slugs are all fired off, and it is required to renew the supply in the magazine, by unscrewing a cap, *o*, and pulling a string, *p*, (one end of which is attached to said cap and the other passing through a hole in the center of the block *Q*, and then attached to the spring catch or pawl *m*,) the pawl or catch *m* will be drawn out of contact with the rack or ratchet *l*, and the block *Q* will be easily withdrawn.

I shall now proceed to describe the mechanism by which I convey a cap from the magazine or tube *F* and force it on the percussion-nipple *G* at the same time that I drive a charge home in the chamber *C*. The magazine *F* is merely a simple hole or tube, of a diameter sufficient to permit the caps to slide or be forced through it freely. The caps are to be placed in this magazine with their open ends forward or toward the nipple *G*; and at the back of them is placed a spiral spring, *q*, for the purpose of pressing them forward. At the forward end of the magazine or tube *F*, I place a carrier, *R*, the object of which is simply to receive a cap from the magazine *F* and move it downward into line with a small rammer, *t*, the axis of said rammer being placed in line with the axis of the rammer *P*. The rammer *t* is for forcing a cap on the percussion-nipple when the forward rammer *P* forces a charge into the chamber *C*.

The carrier *R* is constructed as seen in Figs. 3 and 4, and also in Fig. 11, which is a front or rear elevation of it. There is a hole, *r*, made in the carrier, and of the same diameter as the bore of the magazine *F*, and is so placed that when the carrier is up, or in its highest position, said hole will be in line with the said magazine, and when in such position a cap will slide or be forced from the magazine *F* into the hole *r* in the carrier. The lower end of the carrier rests on the guard *K*, and when the guard *K* is up, or in the position shown in Fig. 3, the hole *r* in the carrier will be in line with the magazine *F*; but when the guard is pulled downward, or into position as shown in Fig. 4, the carrier is immediately forced downward by means of a spiral spring, *s*, until the hole *r* is in line with the rammer *t*, when it is prevented from moving any farther in a downward direction by the head or projection *u* on its upper end, which brings up on the shoulder *v*. Thus it brings a cap from the magazine *F* downward and into line with the rammer *t*, and also in line with the percussion-nipple *G*, when the block *H* is in its lowest position, or as shown in Fig. 4. The thickness of the carrier *R* is somewhat less than the length of a cap, so that when a cap is forced into the hole *r* from the maga-

zine it will project a little beyond the back face of the carrier, so as to keep the next cap in the magazine a little off the carrier until it (the carrier) is forced down. There is a small recess or passage, *w*, made downward between the end of the magazine and the bearing, in which the rammer *t* works, to permit the projecting end of the cap to move downward without obstruction when the carrier is forced down.

The next part of the mechanism to be described is that by which the rammer *t* is forced or driven forward so as to press the cap which is in the bearer or carrier *R* through the hole or passage *x* and onto the percussion-nipple *G* at the same time that the rammer *P* is forcing a cartridge or slug into the chamber *C*. To the forward rammer *P*, I attach a rod, *y*, as seen in Fig. 5, by means of a screw, or in any other suitable manner. Said rod passes backward through a passage, *z*, made to receive it. In the back end of this rod there is a long slot, *a'*, in which one end of a lever, *b'*, is placed, which lever works on a fulcrum at *e'*, the other end of said lever entering a slot or hole in the small rammer *t*, as seen in the drawings. The length of the slot *a'* in the rod *y* should be such that, as the said rod is moved backward with the rammer *P* in loading, it will not move the lever *b'* until the cartridge or charge is almost driven home in the chamber *C*; then, striking the lever *b'*, it will force the rammer *t* forward through the hole *r* in the carrier, and thereby force the cap on the percussion-nipple *G* by the time the charge or cartridge is driven fully home in the chamber *C*. Then, by withdrawing the hand from the handle *j* of the rammer *P*, said rammer will be drawn back to its original position by means of the spiral spring *i*, and with it the rod *y* will be also drawn back, when the end *d'* of the slot *a'* will hit the lever *b'*, and thereby move the rammer *t* back from the nipple and into the position it previously occupied. I insert a piece of rubber or other suitable elastic material, *e'*, in the forward end of the rammer *t*, so as to do away with any danger of exploding a cap in the act of forcing it on the nipple.

From the above it will be seen that the only motions necessary to load my improved fire-arm (the magazines being supplied) are as follows: first, pulling the guard *K* down; second, forcing the rammer *P* back; third, pushing the guard *K* up again. The screw *d* may then be turned, if desired, so as to press the block *H* forward against the barrel. It would be well to have the hammer *D* on half-

cock before forcing the block *H*, when capped and loaded, up or into its highest position, so as to obviate any danger of the caps exploding by striking against the hammer *D*.

A rifle constructed with my improvements and of a medium length of barrel—say thirty inches long—and having a magazine extending under the barrel about its whole length, might carry twenty-five loaded slugs, so that it could be fired twenty-five times in quick succession, if required, (it requiring but a few seconds to load between each fire;) and when the charges or cartridges which were in the magazine were all fired off, it would take but little time to fill the magazine again.

I am aware that there was a breech-loading fire-arm patented in the year 1849 by A. D. Perry, in which he uses a piercing-cone in connection with the exploding-nipple, the exploding-nipple opening into a chamber formed in the cone, and the fire passing from the nipple along the chamber and communicating with the powder through a hole in the end of the cone. Now, in my improved fire-arm I accomplish the same ends in a far more simple and direct manner, for without using a cone or chamber, as he does, to guide the fire from the nipple to the center of the charge of powder, I extend the nipple itself into the chamber, as hereinbefore described.

What I claim as my invention, and desire to secure by Letters Patent, is as follows:

1. The carrier *R*, with the spring *s*, in combination with the magazine or tube *F*, constructed substantially as hereinbefore described, for the purpose of bringing a cap from the magazine *E* downward or into line with the rammer *t*.

2. I also claim the rammer *t*, in combination with the rammer *P* and the mechanism by which they are connected, so as to operate together, as hereinbefore described, such mechanism consisting in part of the rod *y* and the lever *b'*.

3. I claim combining with the charge-chamber *C* and the magazine *E* the intermediate chamber or carrier *M*, said charge-chamber and carrier being connected with and operated simultaneously by the guard *K*.

In testimony whereof I have hereunto set my signature this 25th day of April, A. D. 1855.

JOHN SWYNEY.

Witnesses:

W. F. A. KELLY,
ARTHUR NEILL.