

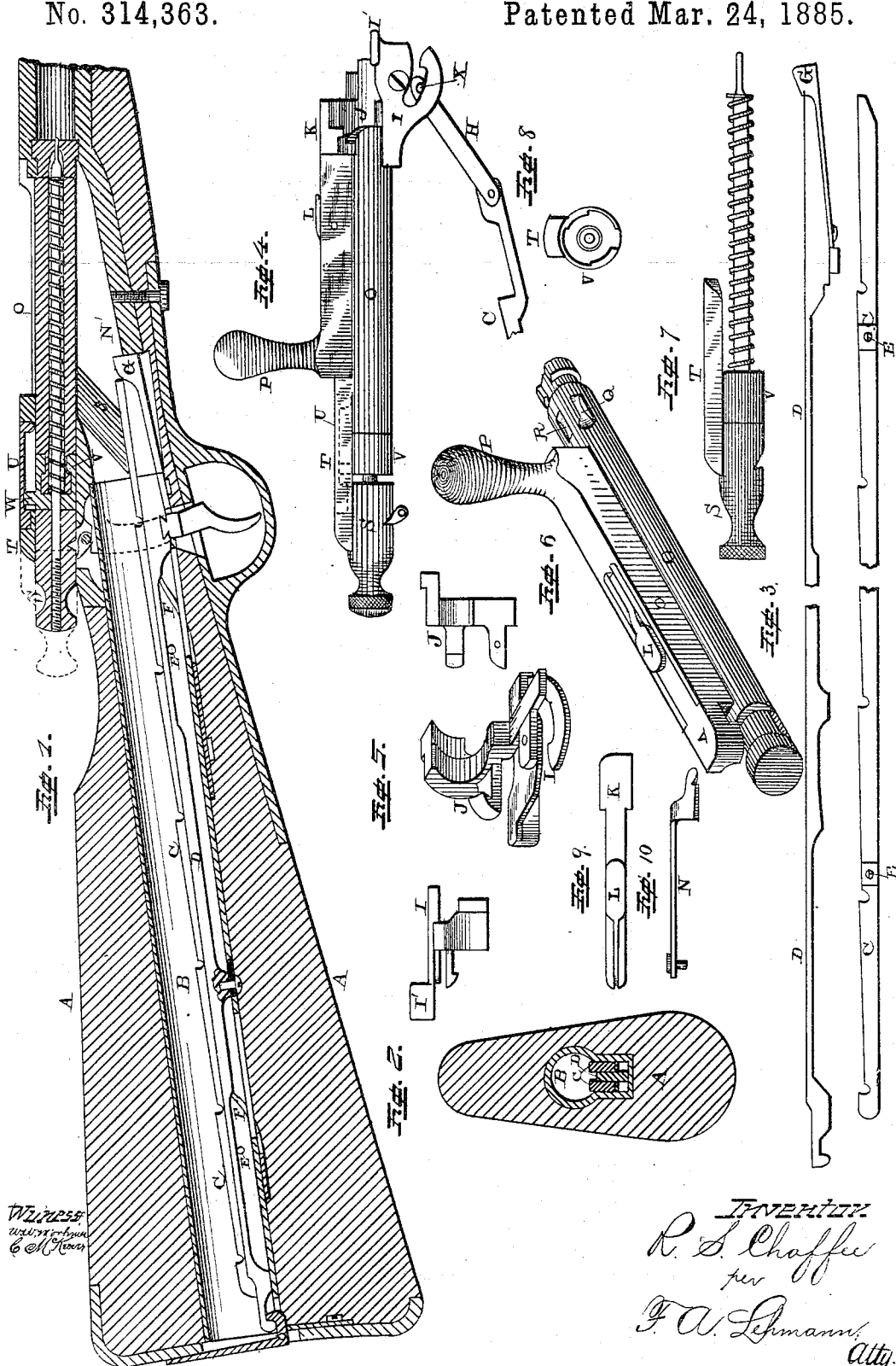
(No Model.)

3 Sheets—Sheet 1.

R. S. CHAFFEE.
MAGAZINE FIRE ARM.

No. 314,363.

Patented Mar. 24, 1885.



(No Model.)

3 Sheets—Sheet 2.

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Fig. 11

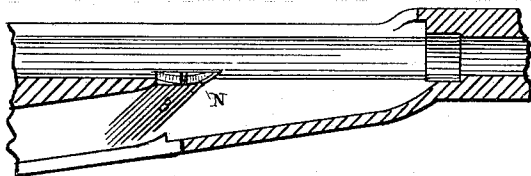


Fig. 12

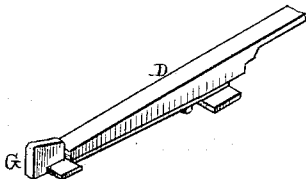
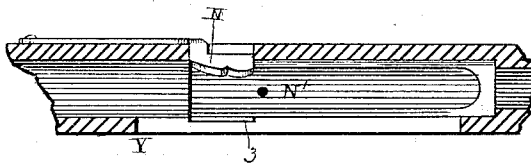


Fig. 13



Witnesses.

H. W. Holman
W. F. Kern

Inventor.

R. S. Chaffee
per
F. A. Lehmann,
att'y.

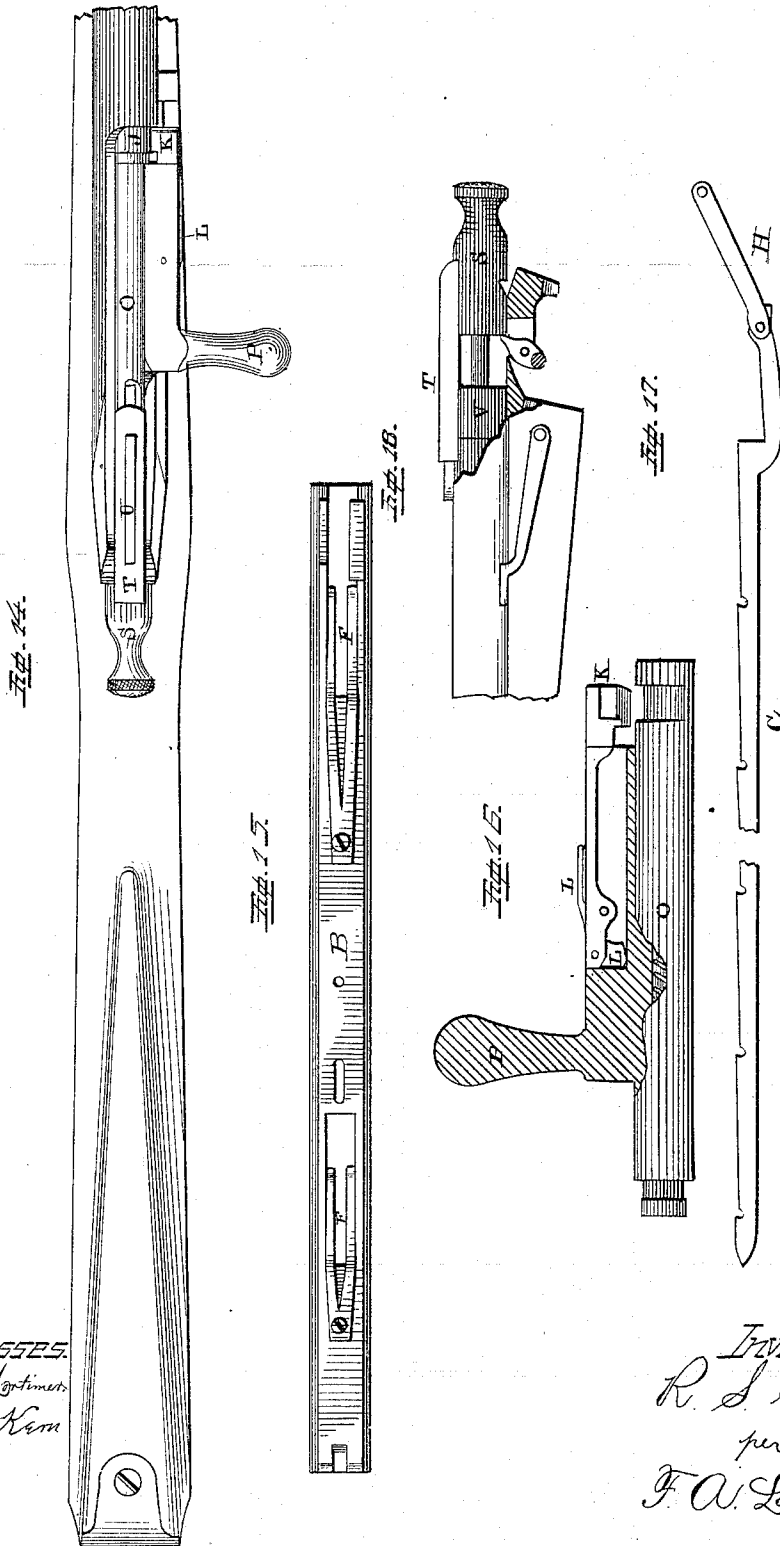
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3 Sheets—Sheet 3.

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Witnesses.
W. W. Mortimer,
W. H. Kern

Inventor.
R. S. Chaffee,
per
F. A. Lehmann,
att'y

UNITED STATES PATENT OFFICE.

REUBEN S. CHAFFEE, OF SPRINGFIELD, ILLINOIS, ASSIGNOR OF ONE-HALF
TO JASPER N. REECE, OF SAME PLACE.

MAGAZINE FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 314,363, dated March 24, 1885.

Application filed December 5, 1881. Renewed April 22, 1884. (No model.)

To all whom it may concern:

Be it known that I, REUBEN S. CHAFFEE, of Springfield, in the county of Sangamon and State of Illinois, have invented certain new and useful Improvements in Breech-Loading Fire-Arms; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in breech-loading fire-arms; and it consists, first, in placing the endwise-moving bar, which lowers the two loading-bars, between the two loading-bars, and cutting away the lower edge of the endwise moving bar so that the pins, which project inwardly from each of the loading bars, catch under the lower edge of the bar, whereby when the rod or bar is moved endwise the two loading-bars will be depressed, so as to leave the magazine-tube free to have the cartridges poured in; second, in securing the spring which operate the two loading-bars to the under side of the magazine-tube, whereby all necessity for cutting away the under sides of the loading-bars is avoided, and the bar is made correspondingly stronger; third, in operating the loading-bars by means of the cartridge-extractor, or an arm which is made in one solid piece with the extractor, and which projects down over the outside of the receiver, whereby each time that the bolt is drawn backward for the purpose of extracting the shell the loading-bar is moved after another cartridge; fourth, in attaching the cartridge-extractor to the front end of the bolt, and holding it in position in a groove made in the front end of the bolt by means of a pivoted lever which bears down upon it, the extractor being so held that the bolt can be revolved without in any way affecting the extractor; fifth, in making in the rear end of the bolt two notches, one of which locks the thumb-piece in position at half-cock as the thumb-piece is turned upward and the handle of the bolt forces the thumb-pieces backward, and the other one serves to lock the bolt rigidly in position so that it cannot be turned when the

thumb-piece is at half-cock and on the safety-notch; sixth, in a spring which projects through a slot in the rear end of the receiver, and which holds the cartridge down in the bottom of the receiver until the bolt has been pushed forward, and which also acts as an ejector when the bolt is withdrawn; seventh, in the arrangement and combination of parts, which will be more fully described hereinafter, whereby a cheap, simple, and effective breech-loader is produced.

Figure 1 represents a vertical section of my invention complete. Fig. 2 is a vertical cross-section taken through the magazine-tube and the loading-bars. Fig. 3 is a detailed view of the central bar and one of the loading-bars. Fig. 4 is a side elevation of the bolt, cartridge-extractor, and the front end of one of the loading-bars. Fig. 5 is a perspective of the cartridge-extractor and its attachment. Figs. 6, 7, and 8 are detail views of the bolt and the thumb-piece. Fig. 9 is a plan view of the spring which secures the extractor to the bolt. Fig. 10 is a side view of the spring which throws out the shells. Figs. 11, 12, and 13 are detail views of the springs G N. Fig. 14 is a plan view of a gun embodying my invention. Fig. 15 is an inverted view of the magazine-tube. Fig. 16 is a side elevation of the bolt, partly in section. Fig. 17 is a detached view of the loading-bar, which has the connecting-arm fastened to it. Fig. 18 is a detached view of the rear end of the barrel and firing-bolt, showing the bolt drawn back to full-cock.

A represents the stock of the gun, through which is passed a magazine-tube, B, in the usual manner. This tube, as shown in my Patent of February 4, 1879, No. 211,887, consists of a round upper portion, into which the cartridges are placed, and a rectangular lower portion, into which the loading-bars C and the endwise-moving bar D are placed. This endwise-moving bar D, which has a hook formed upon its lower end, and which is operated by a corresponding hook which is formed on the door or covering which closes the entrance to the magazine-tube, is placed between the two loading-bars, and has suitable inclined recesses or depressions formed in its lower edge,

as may be preferred, for the purpose of catching over suitable pins or studs, E, which project from the inner side of each of the loading-bars. These loading-bars being in close contact with each side of this endwise-moving bar, and being held pressed upward by means of the springs F, which are secured to the under side of the lower portion of the magazine-tube, forces the two loading-bars downward sufficiently far to prevent their notched upper edges from projecting into the round portion of the tube, and thus interfering with the free filling of the tube with cartridges. When these two loading-bars are not depressed, but have their upper edges projecting up into the tube, the cartridges can only be fed into the tube one at a time; but when both of the bars are depressed, so as to leave the interior of the tube perfectly clear, the cartridges can be fed all at once into the tube from any suitable feeder. The springs which force these two loading-bars upward are secured to the under side of the magazine-tube at one end, and bear upward against the loading-bars at their other ends, which are pronged or divided, as shown in Fig. 15, so as to straddle over the central bar, D. By having these springs secured to the under side of this magazine-tube, instead of having them secured to the holding-bars themselves, as was shown in my former patent, the construction is greatly cheapened, and the lower edges of the holding-bars need not be cut away, and consequently are not correspondingly weakened.

Secured to the front and upper end of the central endwise-moving bar D is a suitable spring, G, which is shaped as shown, and which has an ear projecting from one side, so as to limit its upward movement by catching against the under side of the beveled end of one of the loading-bars. This spring serves to catch under the rear end of the cartridge which has just entered the empty portion of the receiver, and serves to raise the cartridge up sufficiently to allow the bolt to catch behind it for the purpose of forcing the cartridge into the rear end of the chamber. Were this spring not used the rear end of the cartridge would not be raised up high enough for the bolt to catch it as the bolt is moved forward into position. One of the loading-bars C has pivoted to its front end an arm, H, which has a suitable projection, X, upon its outer side, at its front end, to engage with the notched plate I, that is pivoted upon the cartridge-extractor J. This cartridge-extractor and the arm are formed in one solid piece, as shown in Fig. 5, and this arm projects over the side of the receiver, so as to have the plate which engages the arm on the front end of the loading-bar pivoted upon it, as shown, so as to move the loading-bar back and forth with the bolt, for the purpose of feeding fresh cartridges into the receiver. This plate I is made heaviest at its rear end, and is provided with a flange, I'. Being heaviest at its rear end,

the front end is kept tilted upward, so that the outer end of the notch will be kept closed, and thus prevent the projection X from coming out of the notch. When it is desired to disconnect the loading-bar from this plate, so that the bolt will no longer cause the loading-bars to feed from the magazine, it is only necessary to bear upon the flange I' with the thumb, when the plate I will be moved into a horizontal position, so as to open the notch in its front edge, when any backward movement of the bolt will cause the arm H to become disconnected, and then the gun can be used as a single breech-loader. The arm can only be again connected to the plate by moving the plate into a horizontal position, and then raising the front end of the arm H upward, so that the projection will again catch in the notch. In the front end of the bolt is made a suitable recess in which the cartridge-extractor is placed, and this extractor is secured to the bolt by means of the spring-latch K, which is pivoted in a recess made in one side of the bolt, as shown. This latch K has its pivot passed through it to the rear of its center, and pivoted in its rear end is a cam-lever, L, by means of which the forward end of the lever can be locked down upon the extractor. When the cam is raised upward, the spring-latch allows the extractor to be removed. By means of this latch the extractor is secured to the forward end of the bolt in such a manner that while the extractor is carried back and forth with the bolt the extractor does not turn with it. By means of this construction a solid extractor is produced, and the latch which holds the extractor in place acts as a spring to allow the extractor to give sufficiently to catch over the flanges of the cartridges when used as a single loader. When the gun is loaded from the magazine, the cartridges are raised at their rear ends by means of the spring G, on the front end of the bar D, and as the bolt is pushed forward the extractor passes over the flanges on their rear ends as the cartridge is being pushed into position.

Secured to the outer side of the rear end of the receiver, on the opposite side from the arm of the extractor, is a spring, N, the front end of which projects through a slot made in the side of the receiver, as shown. On the inner edge of this spring, where it extends over the top of the lower portion of the receiver, is made a suitable shoulder against which the rear end of the cartridge strikes as it is being drawn backward by the extractor. This spring serves a double function by projecting out over the top of the cartridge, so as to prevent it from rising upward in the lower part of the receiver until the bolt is pushed forward, and to snap inward as the bolt is being drawn backward for the purpose of throwing the shell out clear of the receiver. This spring projects just sufficiently in the way of the travel of the bolt to be pushed back and

forth as the bolt is moved past it. In the bottom of the receiver is formed a chamber, N', into which the cartridges are forced as they first come from the magazine, and the front end of this chamber is inclined inward, so that as the rear end of the cartridge is being pushed forward by the bolt the front end of the cartridge rises upward, so as to be pushed directly into the chamber. The bolt O has a firing-pin passed through the center in the usual manner, and is provided with the handle P, for moving the bolt back and forth. In the rear end of the bolt are made two recesses, Q R, the one R being just in the rear of the handle P and the other slightly to one side of it. The thumb-piece S, which is secured to the rear end of the firing-pin, has an arm, T, projecting forward, and which is provided with a spring, U, for catching in these recesses and uniting the bolt and the thumb-piece together. Between this thumb-piece and the rear end of the bolt is placed a sleeve, V, which has a stud or projection, W, extending outward from its upper side, so as to catch in the slot that is made in the arm T, and thus prevent the sleeve from turning around with the bolt. The sleeve and the thumb-piece turn together at all times. This sleeve V fits over the rear end of the bolt, which is shaped as shown in Fig. 6. While the sleeve is fitted upon the end of this bolt the spring in the arm, which projects forward from the thumb-piece over the rear end of the bolt, catches in one of the two recesses, and thus binds the thumb-piece and the sleeve to the bolt. By turning this thumb-piece so that its arm catches just behind the end of the handle, as already described, the thumb-piece is pushed backward, so as to leave a space between the inner end of the thumb-piece and the end of the sleeve V, and in this space the trigger catches at half-cock. When the thumb-piece is turned so that its spring catches in the other notch, the thumb-piece, sleeve, and bolt are all in close connection with each other. When it is desired to remove this thumb-piece for the purpose of getting access to the firing-bolt, which is screwed directly to this thumb-piece and projects forward directly through the sleeve and the bolt, it is only necessary to pull backward upon the thumb-piece until the front end of its spring is drawn out of the notch in which it is caught, and then turning the thumb-piece around just sufficiently to uncouple it from the rear end of the bolt, and then the thumb-piece, the sleeve, the firing-pin, and its spring can all be removed at once. By means of this construction access can be had to the firing-pin at any time without removing anything more than the thumb-piece, thus making the construction much cheaper and simpler, and enabling the firing-pin to be taken out without having to remove or take apart a considerable portion of the gun. In the under side of the thumb-piece is formed a notch in which the trigger catches, and this

notch forms a safety-catch. While the trigger is caught in this notch, the thumb-piece is held back out of contact with the sleeve, as shown in Fig. 4, and the firing-pin is drawn back, so that its end does not project beyond the front end of the bolt so as to come in contact with the cartridge. When the bolt is drawn back to full-cock, as shown in Fig. 18, the trigger catches against the front edge of the thumb-piece S, in which position the spring around the firing-bolt is compressed, so that as soon as the trigger is pulled the gun is fired. When the bolt has been pushed forward, and the handle turned down behind the shoulder, and the thumb-piece is drawn back to the safety-notch or half-cock, the front end of the spring in the arm, which projects forward from the thumb-piece, catches in the notch in the rear end of the bolt, slightly to one side of the handle, and as this arm, when the trigger is pulled, flies forward it forces the firing-pin against the cartridge.

It will be noticed that as the rear end of the cartridge is raised upward by the spring G and the inclined shoulders 3, the cartridge will be held in or almost in a horizontal position. The rear end of the cartridge then projects upward just far enough to be caught by the front end of the bolt. As the cartridge is moved forward the inclined front end of the receiver and the shoulders 3 cause the cartridge to rise upward on a level with the bore of the gun. Where the cartridge is presented to the bore at an oblique line the gun is more or less inclined to clog; but where it is presented on a straight line to the bore, as here shown, clogging is impossible.

Having thus described my invention, I claim—

1. The combination of the endwise-moving bar having its lower edge cut away to leave shoulders or inclines with the loading-bars provided with pins or projections which ride under the depressed portion of the endwise-moving bar, substantially as shown.

2. The combination of the endwise-moving bar, the two loading-bars, the magazine-tube having two or more openings through its bottom, and the double-pronged springs F, each prong of the spring being made to bear against the under side of a loading-bar, substantially as described.

3. The combination of the firing-bolt, the cartridge-extractor J, the pivoted arm or lever K, and the cam L, which is pivoted to the arm or lever for locking it down in place, substantially as set forth.

4. The combination of the firing-bolt, a cartridge-extractor loosely attached thereto, a holding device or lever pivoted in the bolt, and a means of locking the lever or holding device down in place, substantially as specified.

5. The combination of a firing-bolt, a cartridge-extractor, a plate, I, secured to the extractor, a connecting-rod, and a loading-bar,

the rod being provided with a projection for catching in the plate, substantially as shown.

6. The combination of the firing-bolt, the extractor J, loosely connected thereto, the plate I, pivoted to the extractor, and having a notch in its edge, and a projection, I', with the rod H, having projection X and loading-bar C, substantially as described.

7. The combination of the thumb-piece S, having the firing-bolt secured to it, and provided with the arm or extension T, the spring U, the sleeve V, having the projection W, and the firing-bolt having its rear end fitted in the sleeve V, and provided with the notches Q R, substantially as specified.

8. In a breech-loader, the receiver having a slot cut through its rear end, with a spring having a shoulder formed upon it to project through the slot and act both to hold the cartridge back and to eject the shell after the gun has been fired, in combination with the firing-bolt and a mechanism for feeding the cartridges forward from the magazine, substantially as shown.

9. In a breech-loading fire-arm, the receiver provided with an incline at its front end and shoulders 3 at its rear end, in combination with the spring G and the firing-bolt, whereby the cartridge is presented horizontally to the bore of the gun, substantially as set forth.

10. In a breech-loading fire-arm the combination of the firing-bolt, a detachable cartridge-extractor which is connected thereto, a plate connected to the cartridge-extractor, and which is provided with a recess in its

front edge, a rod which is pivoted to one of the loading-bars, and provided with means for engaging with the pivoted plate, whereby the magazine is thrown in and out of action, substantially as shown.

11. In a breech-loading fire-arm, the combination of the firing-bolt, a removable cartridge-extractor which is applied to its front end, and which is provided with an arm or projection which extends downward outside of the barrel, a movable plate which is connected to this downwardly-projecting arm, the loading-bars, and the connecting-rod H, which is connected to one of the bars, which rod is provided with means upon its outer end for connection with the movable plate or device attached to the cartridge-extractor, substantially as shown.

12. The combination of the firing-bolt, the removable cartridge-extractor which is attached to its front end, the holding-bars, one of which is provided with the connecting-rod H, and a suitable movable device which is attached to the cartridge-extractor and moved back and forth with the firing-bolt, and which is adapted to be connected to and disconnected from the connecting-rod H, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

REUBEN S. CHAFFEE.

Witnesses:

PETER BERRIMAN,
J. F. CADWALLADER.