

(Model.)

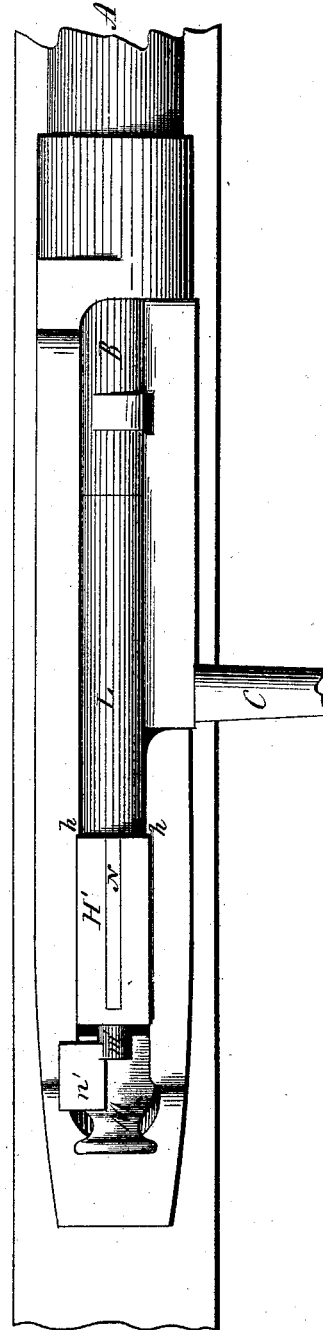
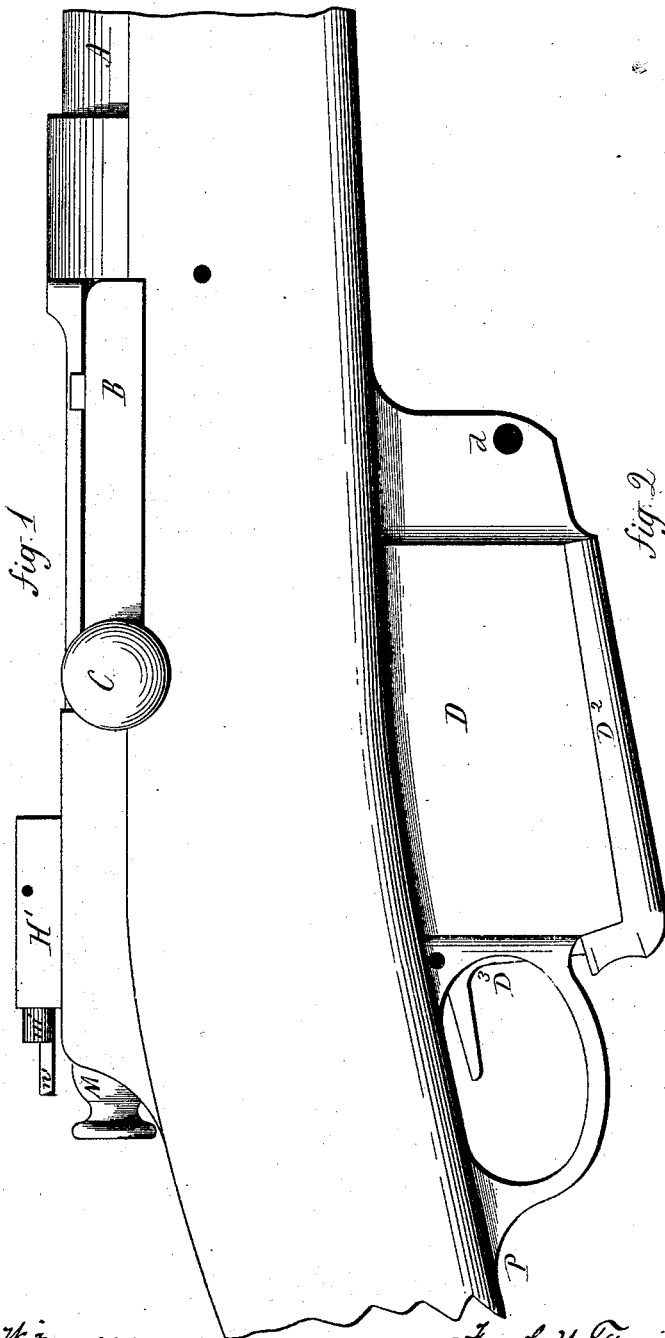
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F. W. TIESING & S. V. KENNEDY.

Magazine Fire Arm.

No. 235,829.

Patented Dec. 21, 1880.



Witnesses.  
*J. A. Chumurray.*  
*Jos. C. Earle*

*Frank W. Tiesing & Sam<sup>r</sup> V. Kennedy*  
 Inventors.  
 By atty.  
*Wm. C. Earle*

(Model.)

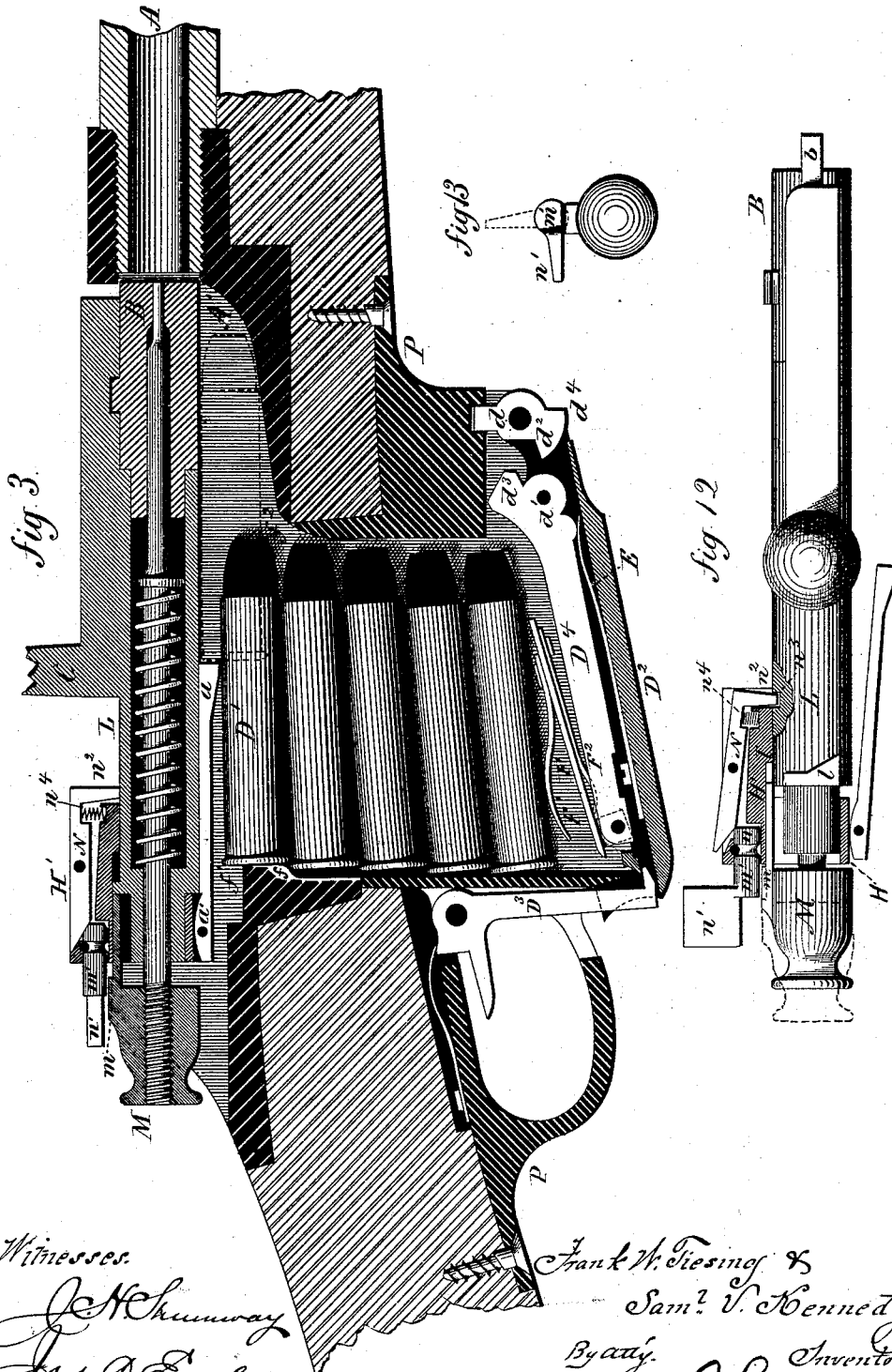
4 Sheets—Sheet 2.

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Witnesses  
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(Model.)

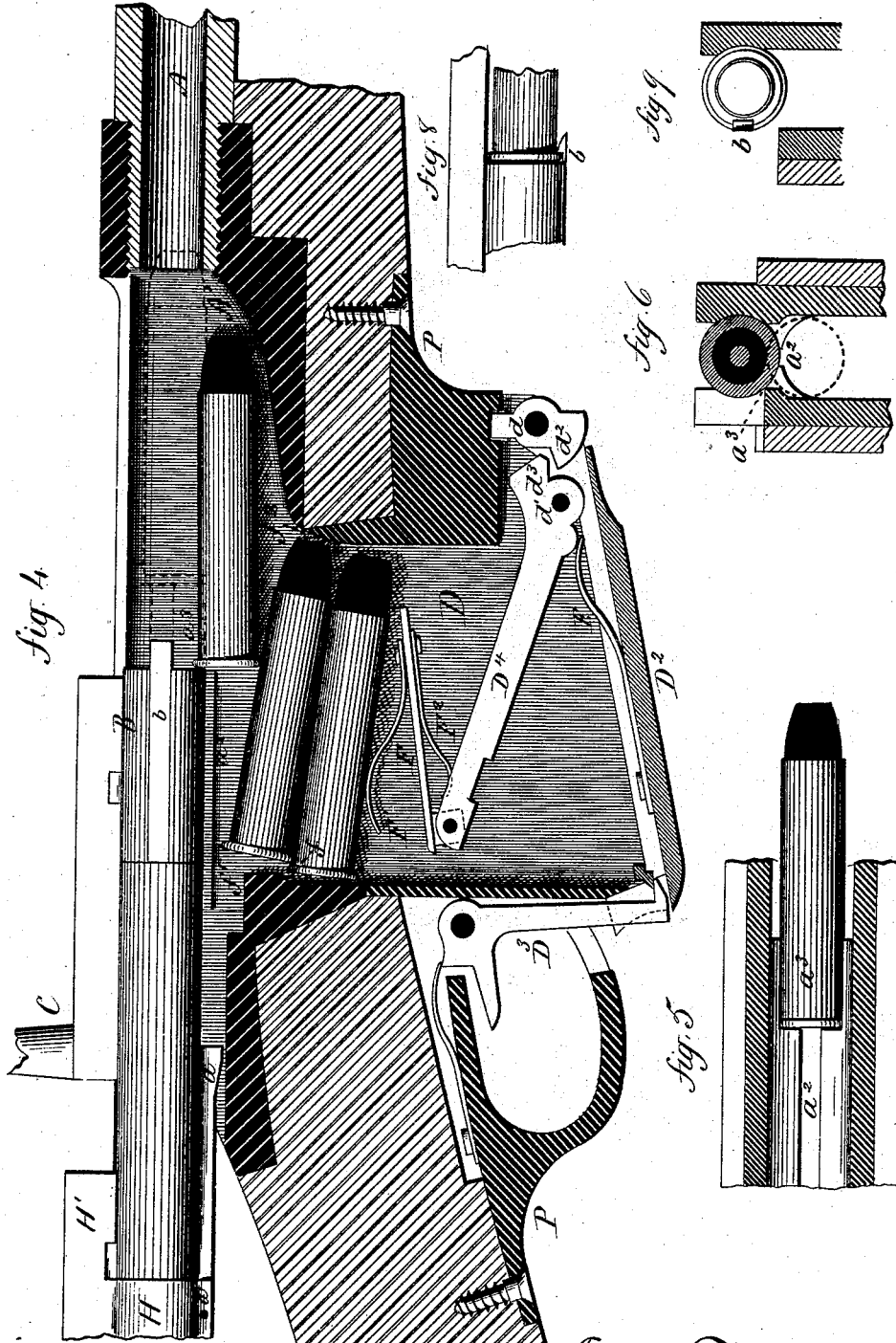
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Witnesses.  
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(Model.)

F. W. TIESING & S. V. KENNEDY.

4 Sheets—Sheet 4.

Magazine Fire Arm.

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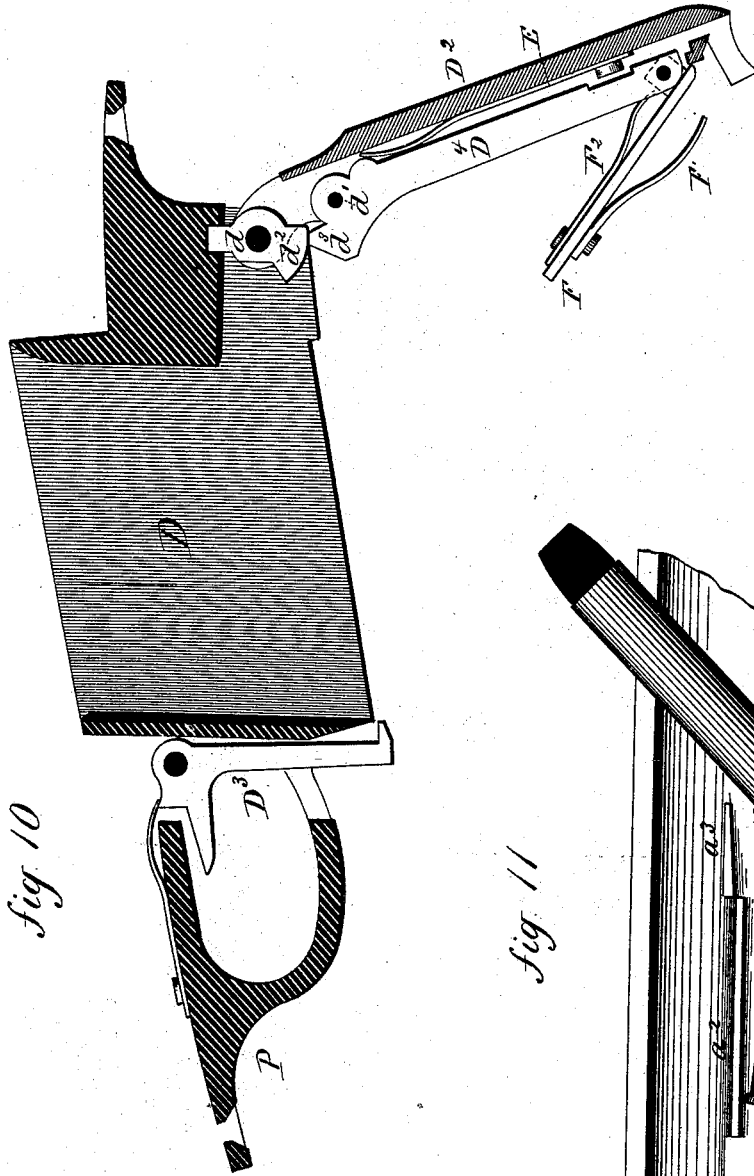


Fig 10

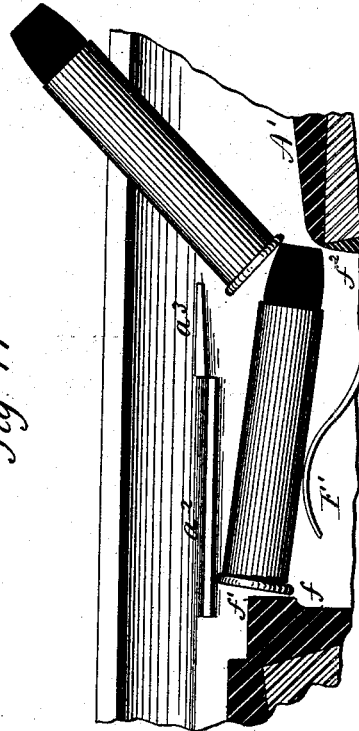


Fig 11

Witnesses.  
*J. H. Shumway.*  
*Jos. D. Carle*

*Frank W. Tiesing & Sam. V. Kennedy*  
 By atty *Inventors*  
*Jos. D. Carle*

# UNITED STATES PATENT OFFICE.

FRANK W. TIESING AND SAMUEL V. KENNEDY, OF NEW HAVEN, CONN.

## MAGAZINE FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 235,829, dated December 21, 1880.

Application filed March 17, 1880. (Model.)

*To all whom it may concern:*

Be it known that we, FRANK W. TIESING and SAM. V. KENNEDY, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Magazine Fire-Arms; and we do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, side view; Fig. 2, top view; Fig. 3, longitudinal section, the parts closed; Fig. 4, longitudinal section, the parts open; Figs. 5, 6, 8, 9, 10, 11, 12, 13, detached views.

This invention relates to an improvement in that class of breech-loading fire-arms in which the breech-piece consists of a longitudinally-sliding bolt, and commonly called "bolt-guns," and particularly to those which are provided with a magazine for containing several cartridges to be successively introduced in front of the open breech-piece and carried into the chamber of the barrel by the forward movement of the breech-piece; and the invention consists in the construction, as hereinafter described, and particularly recited in the claims.

A represents the barrel; B, the bolt or breech-piece, arranged to be moved longitudinally by means of a lever, C, and locked in substantially the usual manner for this class of breech-loaders.

D is the magazine, which is arranged vertically below the breech-piece and through the receiver, and so that the cartridges are arranged therein one above another in a vertical column, as seen in Fig. 3. On the under side of the breech-piece a latch, *a*, is hinged, as at *a'*, and so as to move back and forth with the breech-piece. When drawn back, as seen in Fig. 4, the latch falls in rear of the upper cartridge, *D'*, and so that when the breech-piece is moved forward the latch will strike the head of the upper cartridge and carry it forward into the space beneath the breech-piece, as seen in broken lines, Fig. 3. A spring is arranged beneath the cartridges to raise the column when one has been removed. This movement of the first cartridge places it in position for transfer to the chamber in the bar-

rel, and so that when the breech-piece is again withdrawn, as seen in Fig. 4, the head of the cartridge will be forced up so as to lie in front of the forward face of the breech-piece, as seen in Fig. 4, its head resting upon the cartridge next below and so as to hold back the column, spring of the magazine holding the advanced cartridge up into the position in front of the breech-piece, and so that when the breech-piece is next moved forward it will strike the head of the advanced cartridge, force it forward, its point riding up the incline *A'* and entering the barrel, and so soon as the head has passed off from the cartridge below, that cartridge will rise so as to be engaged with the latch *a* and carried forward to the space beneath the breech-piece, while the previously-advanced cartridge is being carried into the barrel. The latch *a* works through a slot, *a<sup>2</sup>*, in the top of the magazine, to engage the head of the upper cartridge, the cartridges being held up against the top of the magazine by a spring, as before mentioned, and when the cartridge is moved forward into the recess the slot *a<sup>2</sup>* expands, as at *a<sup>3</sup>*, (see Figs. 5 and 6,) so as to allow the head of the cartridge to rise in front of the breech-piece, as before described, but yet so as to retain the cartridge and prevent its escape entirely from control of the magazine-spring.

In Fig. 5 is shown a longitudinal section, just above the magazine, with the advanced cartridge held in the enlarged slot *a<sup>3</sup>*. The slot *a<sup>3</sup>* continues for a short distance, its sides controlling or guiding the cartridge-head, as before described; but as soon as the advanced cartridge has been moved forward beyond the end of the enlarged slot *a<sup>3</sup>* its head is then permitted to rise, forced so to do by the spring in the magazine below it, until it passes into engagement with the extractor *b*, as seen in Figs. 8 and 9, the side of the frame opposite the extractor serving to hold the head of the cartridge in the extractor, and this engagement of the head and extractor, after the end of the cartridge has been introduced into the chamber of the barrel, as seen in broken lines, Fig. 4, and this final upward movement of the advanced cartridge permits the next cartridge to come into position to be transferred in like manner.

The spring device for raising the cartridges best adapted to this peculiar magazine and movement of the cartridges is shown in Figs. 3 and 4, and it consists of a lever-like cover,  $D^2$ , hinged forward of the magazine on a pivot,  $d$ , and so as to close the bottom of the magazine, and locked by a latch,  $D^3$ , or otherwise.

To the lever  $D^2$  a second lever,  $D^4$ , is hinged, as at  $d'$ , near the pivot  $d$  of the lever  $D^2$ . At the pivot  $d$  is a stationary shoulder,  $d^2$ , and on the lever  $D^4$  is a corresponding shoulder,  $d^3$ , operating so that when the lever  $D^2$  is opened, as seen in Fig. 10, the shoulder  $d^3$  on the lever  $D^4$  will strike the stationary shoulder  $d^2$ , and draw the lever  $D^4$  toward the lever  $D^2$ , as seen in Fig. 10, so as to leave the lower side or bottom of the magazine open for the introduction of cartridges, and when the lever  $D^4$  has been turned down upon the lever  $D^2$  by means of the shoulders  $d^2$   $d^3$  the shoulder  $d^3$  will pass off from the shoulder  $d^2$  and turn around upon the concentric surface  $d^4$  from the stationary shoulder.

$E$  is the magazine-spring proper, which is attached to the lever  $D^2$  and bears the lever  $D^4$  upward. When the magazine is closed, as in Figs. 3 and 4, the shoulder  $d^3$  rises above and away from the shoulder  $d^2$ , so as to leave the lever  $D^4$  free to be pressed upward by the magazine-spring  $E$ .

To the end of the longer arm of the lever  $D^4$  another lever,  $F$ , is hinged, extending forward or toward the pivot of the lever  $D^4$ , and on this lever  $F$  is a spring,  $F'$ , curved so as to bear upon the lower cartridge at a little distance forward of the head.

When the magazine is open, as seen in Fig. 10, the cartridges are introduced one upon another, their heads rearward, as seen in Fig. 3. Then the magazine is closed by bringing the cover-lever  $D^2$  back to its position, the spring  $F'$  striking the lower cartridge and compressing or forcing the levers  $F$  and  $D^4$  down toward the bottom, as seen in Fig. 3, and so that as each successive cartridge is removed the column is raised. The levers  $D^4$  and  $F$  rise by the force of the spring  $E$  and of the spring  $F^2$  between the levers  $D^4$  and  $F$ . The spring  $F'$  maintains substantially a constant point of bearing upon the lower cartridge, which permits a rocking motion of the cartridge, as hereinafter described.

The magazine may be fitted with some other arrangement of spring and loaded from the top, or it may be loaded from the top with the same spring mechanism last described; but as so described it may be charged when the breech-piece is in its closed position. In charging from the top, however, it is necessary, first, to open or draw back the breech-piece or bolt which opens to the magazine through the slot  $a^2$ . (See Fig. 11.) The cartridges are introduced by placing the flange or head below the slot, and so that the head will strike the spring  $F'$ , or any other follower that there may be in the

magazine, and pass in below the top of the recess under the slot  $a^2$ , and as seen in Fig. 4. Then another cartridge is inserted in like manner. It striking the forward end of the last-inserted cartridge tips that end down over the curved spring  $F'$ , as seen in Fig. 11, permitting the cartridge which is being introduced to pass between the last cartridge and the top of the magazine.

In order to always bring the flange of the cartridge below in rear of the flange of the cartridge next above it, an offset,  $f$ , is made at the rear end of the magazine, directly below where the upper cartridge abuts, as at  $f'$ , and the forward end of the magazine is curved or inclined at the top, as at  $f^2$ , so that as the top cartridge is pressed down its forward end will strike the incline  $f^2$  and be forced back beneath the offset  $f$  before the next cartridge introduced will have reached its extreme rear position, and will therefore bring its flange or head forward of the head of the cartridge below, and so on, each succeeding cartridge standing forward of the flange of the cartridge below it. When loading from the bottom this same result will be attained by the pressing of one cartridge against another. The upper one will be forced forward by the offset  $f$ , causing its flange to jump over the flange of the cartridge below, should it have assumed a position in rear of the head when charging the magazine.

The abutment  $f'$  prevents the rear movement of the upper cartridge when the breech-piece draws back over it, and but for which the rear movement of the breech-piece, dragging over the cartridge, might cause the head of that cartridge to jump to the rear of the cartridge below.

The magazine is best constructed as a part of the trigger-guard  $P$ , and so as to extend up into an opening in the stock or receiver, and be attached to the under side in the usual manner of attaching the trigger-guard, and, as shown in Figs. 1, 3, and 4, this simplifies the construction of the arm.

The lever  $F$  in the magazine may be dispensed with, and the lever  $D^4$  serve to raise the cartridges; but the best results are attained by using the hinged lever  $F$ .

At the rear end of the bolt a sleeve,  $H$ , is arranged with an extension,  $H'$ , which, when the breech-piece is closed, rests against shoulders  $h$   $h$  at each side of the slot in the top of the receiver, (see Fig. 2,) through which the handle  $C$  works to open and close the breech. This extension  $H'$  is longer than the sleeve  $H$ , and extends forward over the sleeve  $L$ , to which the handle  $C$  is attached. The said sleeve  $L$  is rotated by the movement of the handle  $C$  in turning from the locked to the unlocked position, and vice versa.

In order to start the cartridge-shell from the barrel by the rotating movement of the handle  $C$  a cam,  $l$ , is arranged on the rear end of

the sleeve L, which, in turning the handle and sleeve L from the locking to the unlocking position, strikes a shoulder,  $l'$ , in the stationary extension  $H'$  of the sleeve H, and because the shoulder  $l'$  is stationary the rotating movement of the cam  $l$  forces the sleeve L to the rear, and with it the breech-piece B, with which the sleeve L is engaged. This slight longitudinal movement of the breech-piece starts the cartridge-shell from the chamber, so that its complete withdrawal is made easy when the breech-piece is drawn back after having been completely unlocked, and in the unlocking gives the start to the cartridge-shell.

In order to lock the breech-piece in its closed position and prevent the handle C from being accidentally turned, a latch, N, is hung in the extension  $H'$  of the sleeve H, and at the rear of the sleeve is a cam,  $n$ , having a handle,  $n'$ , at the rear, the said cam  $n$  working under the rear end of the latch N, so that by turning the said cam from the position shown in Fig. 13 to broken lines, same figure, the rear end of the latch N is raised, and the nose or forward end,  $n^2$ , is forced down into a notch,  $n^3$ , in the sleeve L, and so the sleeve cannot be turned until the latch is withdrawn. Returning, the cam permits a spring,  $n^4$ , to throw up the nose of the latch and leave the sleeve free. At the same time the firing-pin may be locked away from contact with the cartridge by forming a shoulder,  $m$ , on the head M of the firing-pin and an extension,  $m'$ , of the cam  $n$ , so that when the firing-pin is drawn back, as in broken lines, Fig. 12, and the cam turned over, as in broken lines, Fig. 13, the cam  $m'$  will come in front of the shoulder  $m$  on the firing-pin and prevent it from going forward. One side of the cam  $m'$  is made flat, as seen in Fig. 13, and which is the under side when the firing-pin is free, as also seen in Fig. 13, the remainder of the cam being cylindrical. The cylindrical portion, when the cam is turned, comes down in front of the shoulder  $m$ . With the firing-pin thus locked it is impossible to accidentally discharge the cartridge or to permit the firing-pin to strike the primer even if the firing-pin be drawn back to full cock and discharged.

It will be understood that the firing-pin forms the hammer and is cocked and discharged in the usual manner for bolt-guns.

The mechanism of the breech-piece is applicable to bolt-guns not provided with the magazine.

We claim—

1. The combination, in a fire-arm, of a barrel open at the breech, a longitudinally-movable breech-piece, with a vertical magazine below the breech-piece, the rear end of the magazine in rear of the forward face of the breech-piece when the breech-piece is fully opened, and said magazine opened by the rear movement of the breech-piece, so as to be charged through

the top beneath the breech-piece, and a recess forward of the magazine beneath the breech-piece to receive the uppermost cartridge as the breech-piece is moved forward to close the barrel, substantially as described.

2. The combination, in a fire-arm, of a barrel open at the breech, a longitudinally-movable breech-piece, with a vertical magazine below the breech-piece opened by the rear movement of the breech-piece, but so that the forward portion of the breech-piece will extend over the rear end of the magazine, and also open at the bottom and provided with a cover, so as to be charged through the bottom when the breech-piece is closed, substantially as described.

3. The combination, in a fire-arm, of a barrel open at the breech, a longitudinally-movable breech-piece, a vertical magazine beneath the breech-piece provided with a hinged cover,  $D^2$ , the spring-lever  $D^4$ , hinged to the said cover, the stationary shoulder  $d^2$ , and the shoulder  $d^3$  on the lever  $D^4$ , substantially as and for the purpose described.

4. The combination, in a fire-arm, of the barrel open at the breech, a longitudinally-movable breech-piece, a vertical magazine beneath the breech-piece provided with a hinged cover,  $D^2$ , the spring-lever  $D^4$ , hinged to said cover, the stationary shoulder  $d^2$ , and shoulder  $d^3$  on the lever  $D^4$ , with the lever F hinged to said lever  $D^4$ , and the spring  $F'$   $F^2$ , substantially as described.

5. The combination, in a fire-arm, of a barrel open at the breech, a longitudinally-movable breech-piece, a vertical magazine below the breech-piece, and the rear end of the magazine in rear of the forward end of the breech-piece when said breech-piece is at its extreme rear position, and so as in that condition the magazine is partially covered by the breech-piece, the offset  $f$  at the rear end and near the top of the magazine forming an abutment,  $f'$ , above said offset and in rear of the upper cartridge in the magazine, substantially as described.

6. The combination of a barrel open at the breech, a longitudinally-movable breech-piece, a vertical magazine below the breech-piece, a spring in the magazine below the breech-piece to force the cartridge therein upward, and the latch  $a$ , hinged to the breech-piece, working through the slot  $a^2$  in the top of the magazine to force the upper cartridge from the magazine, substantially as described.

7. The combination of a barrel open at the breech, a longitudinally-movable breech-piece, vertical magazine below said breech-piece, and the latch  $a$ , on the breech-piece, working through a slot,  $a^2$ , in the top of the magazine, to force the upper cartridge from the magazine, with the enlarged slot,  $a^3$ , to bring the head of the cartridge into a position forward of the face of the breech-piece when open, substantially as described.

8. The combination of a barrel open at the

breech, longitudinally-movable breech-piece, vertical magazine below the breech-piece, and the latch *a* on the breech-piece working through the slot *a*<sup>2</sup> at the top of the magazine, to force the upper cartridge forward from the magazine, the extractor *b* on the breech-piece and curved side of the receiver, whereby the flange of the cartridge rises into engagement with the extractor as it advances toward the barrel, substantially as described.

9. The combination, in a breech-loading fire-arm, of the longitudinally-movable breech-piece, the rotating sleeve *L* thereon, and the sleeve *H*, with a latch, *N*, and cam *n* on said sleeve *H*, substantially as described.

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