

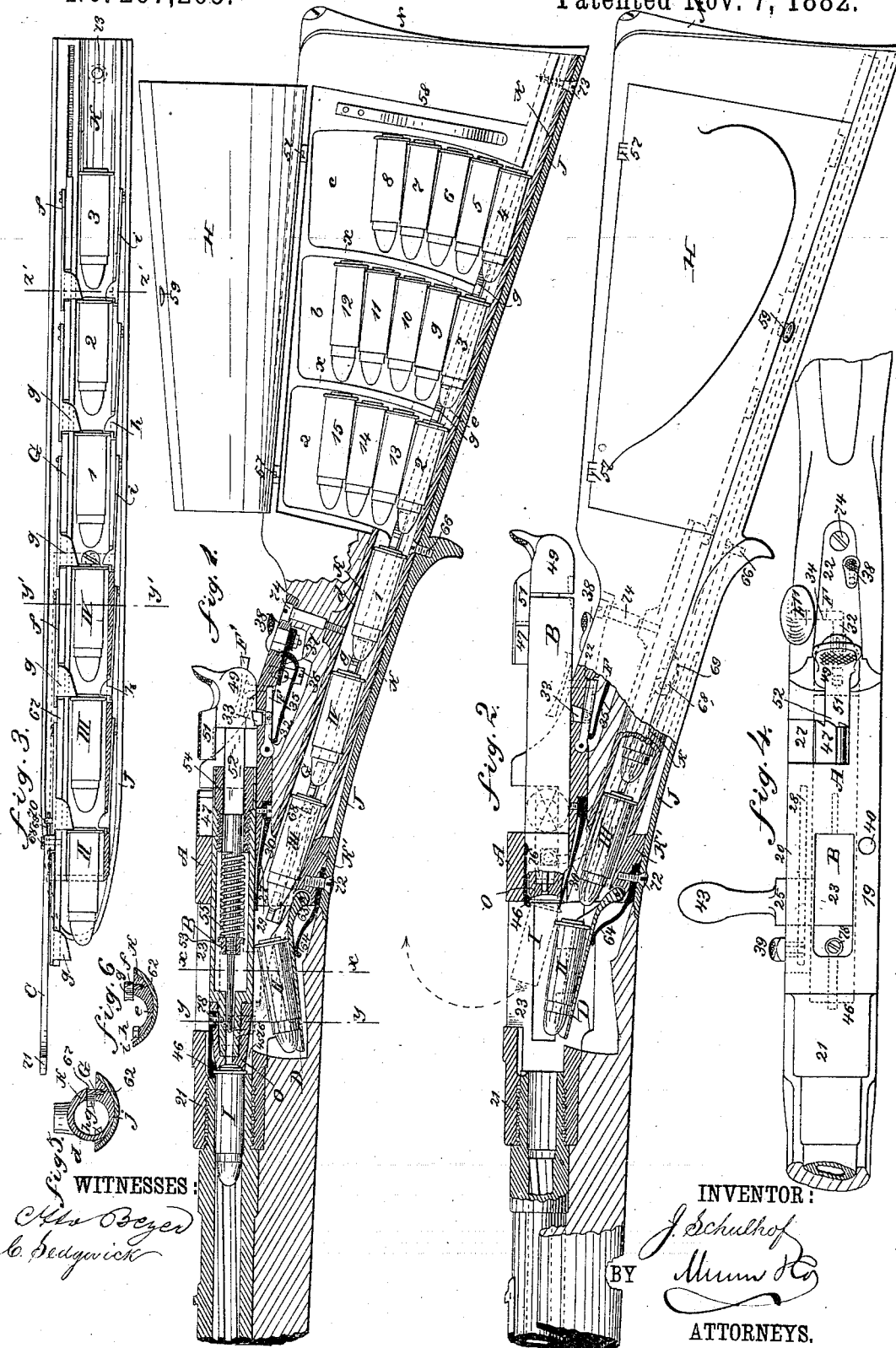
(No Model.)

3 Sheets—Sheet 1.

J. SCHULHOF.
MAGAZINE FIRE ARM.

No. 267,265.

Patented Nov. 7, 1882.



WITNESSES:
Chas. Beyer
L. Sedgwick

INVENTOR:
J. Schulhof
BY *Munn Ho*
ATTORNEYS.

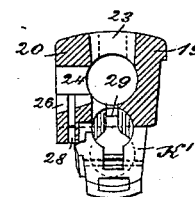
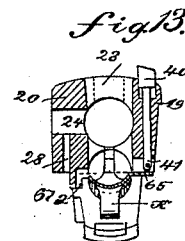
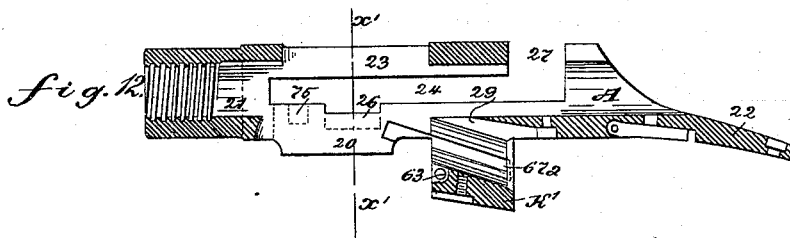
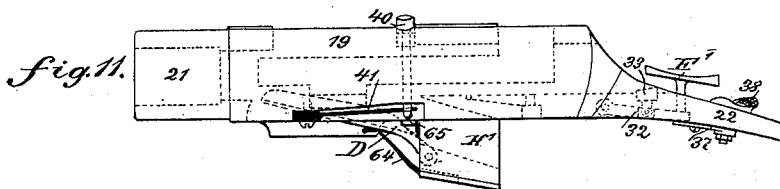
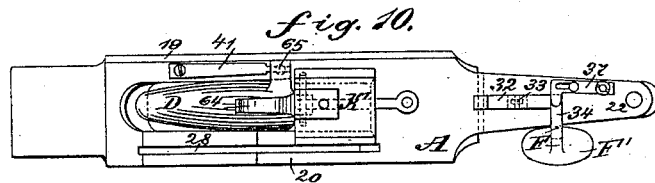
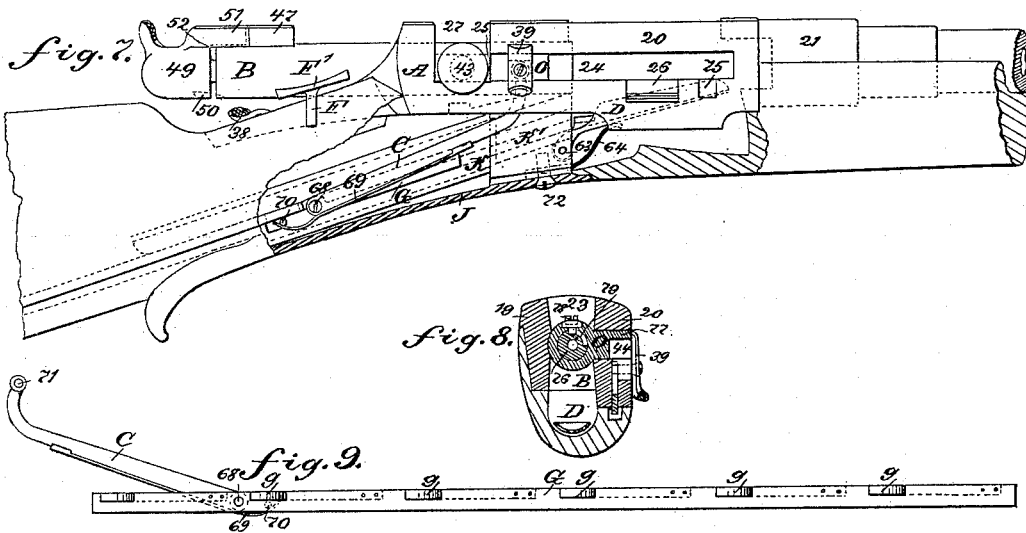
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Chas. Beyer
C. Sedgwick

INVENTOR:

J. Schulhof
BY *Munn & Co.*

ATTORNEYS.

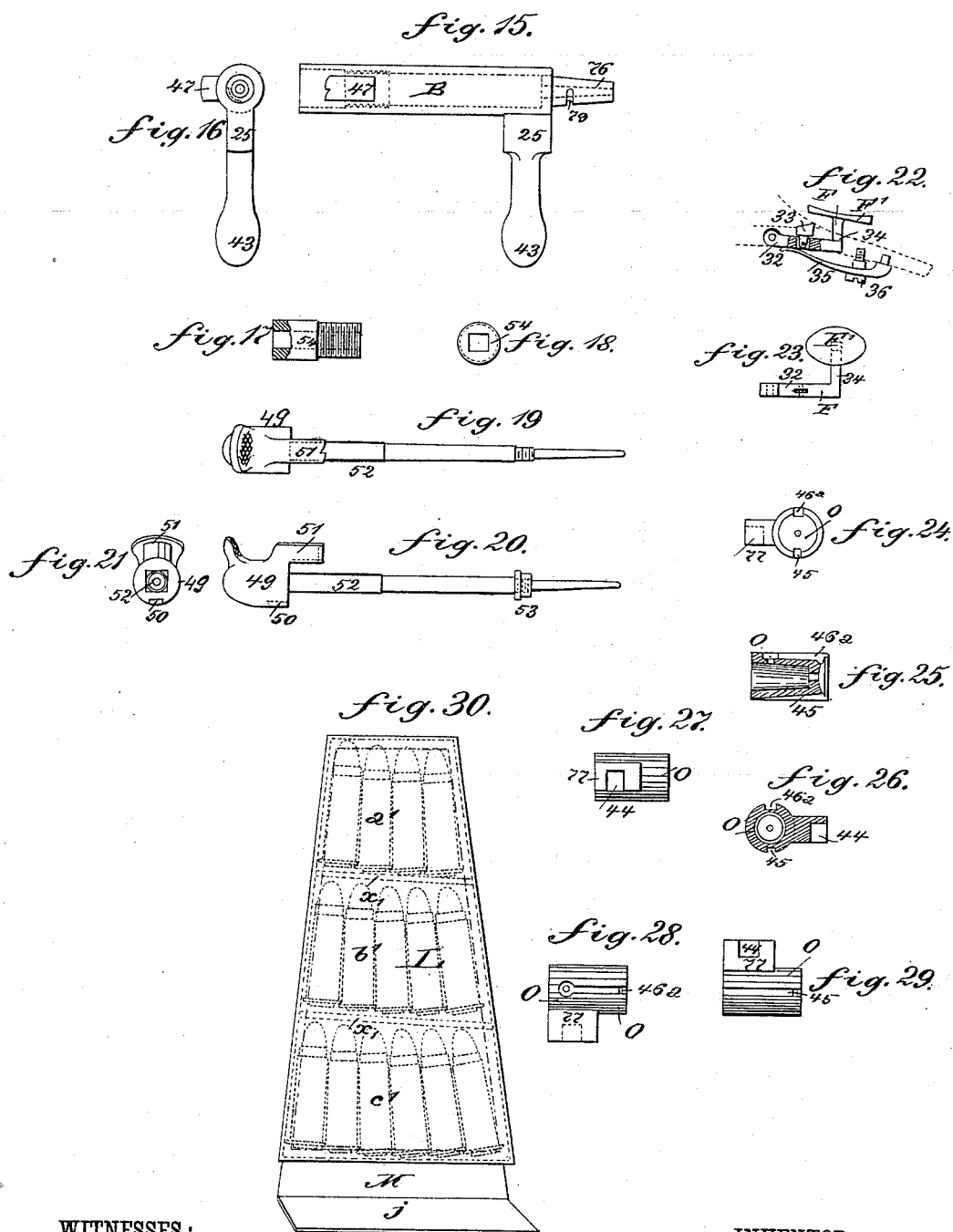
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3 Sheets—Sheet 3.

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WITNESSES:

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L. Sedgwick

INVENTOR:

J. Schulhof
BY *Munn Co*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOSEF SCHULHOF, OF VIENNA, AUSTRIA-HUNGARY.

MAGAZINE FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 267,265, dated November 7, 1882.

Application filed June 22, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOSEF SCHULHOF, a subject of the Emperor of Austria-Hungary, residing at Vienna, in the crown-land of Nether Austria, and State of Austria-Hungary, have invented certain new and useful Improvements in Magazine-Guns; 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 appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in magazine-guns; and it consists in the peculiar construction and arrangement of parts, as herein-after fully described, and pointed out in the claims.

Figure 1 is a longitudinal sectional elevation of my improved fire-arm, showing it loaded and the magazine open. Fig. 2 is a longitudinal sectional elevation of the same, showing the magazine closed and the breech-block withdrawn, and the manner in which the cartridges are raised behind the rear end of the barrel. Fig. 3 is a plan view of the cartridge-delivery tube. Fig. 4 is a plan view of the breech-chamber and mechanism, showing it closed. Fig. 5 is a cross-sectional elevation of the delivery-tube on the line $y'y'$, Fig. 3. Fig. 6 is a section through the trough-shaped part of the delivery-tube on the line $z'z'$, Fig. 3. Fig. 7 is a longitudinal elevation of the breech of the gun, showing the breech-chamber open and the mechanism for disengaging the feeding mechanism from the breech-block, the feeding mechanism being connected with the breech-block in the case shown, and parts of this longitudinal elevation being shown in section. Fig. 8 is a cross-sectional elevation of the breech-chamber on line $y y$, Fig. 1, showing devices for disengaging the cartridge-feeding mechanism from the breech-block. Fig. 9 is a longitudinal elevation of the cartridge-delivery rod. Fig. 10 is a plan view of the under side of the breech-chamber, showing the mechanism for indicating whether the magazine is empty or not. Fig. 11 is a longitudinal elevation of the breech-chamber, showing the above-mentioned device for indicating

whether the magazine is empty. Fig. 12 is a longitudinal sectional elevation of the breech-chamber. Fig. 13 is a cross-sectional elevation of Fig. 11. Fig. 14 is a cross-sectional elevation on line $x' x'$, Fig. 12. Fig. 15 is a longitudinal view of the breech-block. Fig. 16 is an end view of the same. Fig. 17 is a longitudinal elevation of the nut, with the square aperture through which the firing-pin passes, and which is screwed into the rear end of the breech block. Fig. 18 is a front end elevation of the same. Fig. 19 is a plan view of the firing-pin and its head at the rear end. Fig. 20 is a longitudinal elevation of the same. Fig. 21 is a front end elevation of the same. Fig. 22 is a longitudinal elevation of the trigger-lever, parts being shown in section. Fig. 23 is a plan view of the same. Fig. 24 is a front end elevation of the locking-block. Fig. 25 is a longitudinal sectional elevation of the same. Fig. 26 is a cross-section of the same. Fig. 27 is a side elevation of the same. Figs. 28 and 29 are plan views of the same. Fig. 30 is a longitudinal elevation of the cartridge-box.

The breech-chamber A, which is in the shape of a box, consists of two side parts, 19 and 20, and is provided with a head, 21, for receiving the rear end of the barrel. The rear end of the breech-chamber terminates in a tongue, 22, in its top. This breech-chamber is provided in its top with a rectangular slot, 23, for inserting the cartridges. The breech-chamber is provided with a longitudinal aperture for receiving the breech-block B and the firing-pin. The right-hand side piece, 20, is provided with a horizontal longitudinal slot, 24, which is to receive the locking-piece 25 of the breech-block B and the lug 77 of the locking-block O. The front end of the slot 24 is provided with a square recess, 75, which is adapted to receive the slide 39 for cutting out the repeating mechanism. The breech-chamber is provided with a recess, 26, having its lower edge formed step-shaped for receiving the locking-piece 25 when the breech-chamber is loaded. At the rear end of the slot 24 I have provided a vertical slot, 27, which is to receive and guide the connecting rod or bar C. On its under side the breech-chamber A is provided with an opening of the same shape as the cross-section of a cartridge, in which the cartridge-carrier D moves. The lower closed side of the breech-

chamber is provided with a longitudinally-perforated lug or box, K', to the front end of which the cartridge-carrier D is pivoted or hinged, which cartridge-carrier is pressed upward by a spring, 64, which is introduced into the projection or box K'. On the left side the cartridge-carrier D is provided with a lug, 65, which corresponds with the indicator-pin 40. The perforated part of the box K', into which the cartridge-delivery tube K is inserted, serves to permit the cartridge to pass, and is provided on the right side with a groove, 67^a, for guiding the cartridge-delivery rod G. This groove 67^a forms a continuation of the groove 67 in the delivery-tube K. The box K' is also provided with a recess for the reception of the cartridge-discharger 30, which recess terminates in a short slit, 29, through which the cartridge-discharger passes, in performing its functions, when the breech is open. In the lower side of the tongue 22 of the breech-chamber the rectangular trigger-lever F is pivoted by a pintle passing through the end of its horizontal arm 32, on which pin this trigger-lever can turn. This arm 32 is provided with a longitudinal slot at its middle, in which the pivoted block 33 is located in such a manner that it will oscillate on a pintle passed through it. The other arm, 34, of the trigger-lever F, is provided with a finger-plate, F', is passed upward through a slot or recess in the tongue 22 in such a manner that the finger-plate F' will be on the right side of the neck of the stock. The spring 35, attached to the tongue, always holds the trigger-lever in the position shown in Fig. 1, and this spring can be adjusted by means of the screw 36 to have greater or less tension, according as the pivoted block 33 is to be released or disengaged from the firing-pin by greater or less pressure. In order to prevent the trigger from operating, a locking-slide, 37, slides in a slot in the tongue 22 of the breech-chamber, and can be adjusted and operated by means of a small handle, 38, which is provided on the same. To lock the trigger it is only necessary to move the slide 37 forward, and then the forward part of the same will pass under the arm 32 of the trigger and will prevent depression of the finger-plate F' of the trigger—that is, it prevents the firing-pin from being released from the pivoted block 33. If the rifle is to be fired, the slide 37 is withdrawn.

On the right side, 20, on the front part of the breech-chamber, a locking-slide, 39, is provided, between the recess 75 of the breech-chamber and the recess 44 of the ridge 77 of the locking-block O, which slide 39 is connected by a screw with the eye 71 of the connecting-bar C, by which locking-slide the repeating mechanism can be adjusted to operate by passing the slide into the recess 44; or it can be thrown out of operation by passing the slide into the recess 75, as will be more fully described later in the description of the repeating mechanism. A pin, 40, is provided in the left-hand side of the breech-chamber, which pin is pressed into the breech-chamber by a

spring, 41, in such a manner that the surface of the chamber A will appear perfectly flush and smooth. This pin projects from the surface of the breech-chamber when it is in contact with the cartridge-carrier D, and thus indicates that the magazine is empty.

The breech-block B consists of a hollow cylinder, and is provided at its front end with a tapering cone, 76, which is provided with a longitudinal aperture for the reception of the firing-pin. On the right side of the same is provided the locking-piece 25, with the locking-lever 43, and besides the same a projection, 47, is provided at the rear end, on the top of the block B.

The locking-block O is placed on the cone 76, and is provided at its front end with an annular recess for the reception of the cartridge. This locking-block O is also provided with a groove, 46^a, for the cartridge-extractor 46, or device for drawing out the cartridge, and in the bottom with a groove, 45, for the device for throwing out the cartridges. On its right side the locking-block O is provided with a ridge, 77, analogous to the locking-piece 25 of the breech-block B, which ridge 77 is provided with a recess, 44, for the reception of the eye 71 of the connecting-rod C and the locking-slide 39. The locking-block is secured by means of a screw, 78, which is also used for securing the device for drawing the cartridges, and passes through the same, and then passes into the groove 79 in the cone 76 of the breech-block B. The breech-block thus passes movably through the locking-block, and the latter will not turn with the breech-block while opening and closing the latter. For this reason only a very small groove for the cartridge-drawing device need be provided in the barrel, which groove is always filled by this cartridge-drawing device when the breech is closed and locked, so that no gases can escape from the rear end of the barrel while firing.

The firing-pin 52 is provided at its end with a block, 49, which is provided in its lower edge with a notch or recess, 50, for the pivoted block 33 on the trigger-lever, and on its upper surface this head 49 is provided with a ridge, 51, which is formed in the same shape as the ridge 47 of the breech-block. The rear part of the firing-pin 52 is square in cross-section, and the front end is made tapering and is circular in cross-section. A sleeve or nut, 54, with a square longitudinal aperture, is passed on the firing-pin 52. A spiral spring, 55, is passed around the firing-pin and rests against the outer end of the sleeve 54, and its front end rests against a screw-nut, 53, screwed on the firing-pin at or near the base of the tapering part of the outer end of the same. The entire firing-pin mechanism is then passed into the breech-block and the sleeve 54 is screwed into the rear end of the opening of the breech-block, whereby the firing-pin mechanism will be held in this breech-block. This complete breech-block—that is, the breech-block containing the firing-pin mechanism—is passed

into the chamber A in such a manner that the ridge 77 and the handle-piece 43 will project upward, and the ridge 77 of the locking-block O passes the open part or recess 24. Then the ridge 77 is pressed downward ninety degrees by means of the thumb until it passes into the longitudinal slot 24. After further adjustment of the breech-block the same is turned downward ninety degrees by means of the handle 43, whereby the locking-piece 25 will be located adjoining and behind the ridge 77 in the slot 24. The locking-piece is then again pressed into the recess 26, whereby the breech-chamber will be closed perfectly tight. By reversing the above movements the breech-block can easily be removed without removing any screws or like devices.

The cartridge-magazine is contained in the stock, which in the case shown is divided into three separate compartments, *a b c*, which are separated by suitable partitions, *x*, of which compartments the first contains four, the second five, and the third six cartridges. By utilizing all available space in the stock as many as twenty-five cartridges can conveniently be stored in the stock. All the compartments for the reception of the cartridges are closed by a hinged cover, H. On one side of the stock a spring, 58, is provided, within the stock, which spring throws open the cover H as soon as the latch 59 of the same is released.

A semi-cylindrical metal track-plate, J, extends throughout the entire length of the stock, along the lower longitudinal edge of the same, which track J is adapted to receive a cartridge-delivery tube, K, which tube K is secured to the box K' and the stock by the screws 72 and 73, respectively, of which the screw 72 also serves to hold the spring 64 to the box K'. This delivery-tube K consists of a front tube-shaped part, *d*, and a rear open trough-shaped part, *e*. On the right side it is provided with a groove, 62, which is adapted to receive the delivery-rod G. The delivery-tube is secured on the track-plate J by means of a screw, 66, or can be made integral with this track-plate. The delivery-rod G is made of steel, is flat, and runs in the groove 62 of the delivery-tube. Six springs, *f*, are secured on the same, equidistant from each other, and are provided at their front ends with teeth *g g*, made integral therewith. These teeth *g g*, which move the cartridges, are pressed by the springs *f f*, through slots or notches provided for the same in the delivery-rod G, into the interior of the delivery-tube K, for which purpose the tubular front part, *d*, of the delivery-tube is provided in its right side with a longitudinal slot, 67.

By means of the screw 68 the coupling rod or bar C is pivoted to the end of the delivery-rod G, and the spring 69, attached to the lower end of this connecting-bar C, rests against the stud 70 of the delivery-rod G and always presses the connecting-rod C upward. The connecting-rod C is formed in the shape of a

sleigh-runner at its outer end, and is provided at its free end with an eye, 71, which passes into the recess 44 of the locking-block O, and is held therein by the pressure of the spring 69. On the left side of the delivery-tube K springs *i*, provided with teeth *h*, are riveted, which teeth also reach into the interior of the delivery-tube, and which serve to hold the cartridges in position when the rod G is withdrawn, and the teeth *g* slide the cartridges along. The cartridges can always move forward, but can never move back, as the teeth *h* prevent such reverse or backward movement. If the delivery-rod has been passed into the groove 62 of the delivery-tube, the entire delivery-tube K, with the closed part *d* in advance, is passed into the box K', so that the eye 71 of the connecting-rod C passes through the slot 28 into the recess 44 of the locking-block O, upon which the delivery-tube K is passed into the stock and is fastened by means of the screws 72 and 73, and the locking-slide 39 is passed into the recess 44, and it is connected with the eye 71 of the connecting-rod C. The tubular part *d* of the delivery-tube K is provided with an enlargement into which the screw 74 passes, passing through the rear end of the tongue 22 of the breech-chamber. The cartridge-boxes L have the same shape as the opening in the stock of the rifle, and are divided by partitions *x' x'* into compartments *a' b' c'*, one side of which box L is formed by a cover, M, provided with a lip, *j*, for holding it.

The operation is as follows: In order to load the fire-arm, the cover H is opened by pressing on the spring-catch 59, upon which the cover will be thrown open by the spring 58. Then four cartridges, I II III IV, which are not packed in cases, like the other cartridges, are passed into the tubular part *d* of the delivery-tube K in such a manner that the ball end will be toward the upper end of the stock. Of these cartridges the first, I, will pass upon the cartridge-carrier D, and the last, IV, will be held in the tube by the projecting teeth *g* and *h*. A filled cartridge-box, L, the cover M of which has been partially drawn off by its lip *j*, is then placed over the magazine in the stock, with the cover M facing downward, and then the cover is removed. The cartridges drop out of the cartridge-box directly into the magazine. The box is then removed and the cover H is closed. The magazine is thus provided with a suitable number of cartridges in one operation, and a considerable quantity of time is thus saved with my improved fire-arm in comparison with the other fire-arms in use heretofore, in which the cartridges had to be introduced singly. By turning the locking lever or handle 43 upward, and thereby removing the locking-piece 25, connected therewith, out of the recess 26, the breech-block will be unlocked. The ridge 47 of the breech-block, which formerly projected downward, will now be in the vertical end 27 of the slot 24. The curved surface of the ridge 47 rests against a corresponding surface of the ridge 51 of the

firing-pin and pushes the same outward, whereby the inner end of the firing-pin is passed within the breech-block, and whereby the danger of accidentally firing a cartridge by the rapid introduction of cartridges by means of a breech-block is avoided, as the fulminate of a cartridge cannot be struck. If the breech is opened by drawing back the locking lever or handle 43, then the cartridge II, which rests on the cartridge-carrier D, will be raised into the loading-space at the rear end of the barrel, and at the same time that the breech is opened the delivery-rod G, which is connected by the connecting-bar C with the locking-block O, will be pushed downward the length of one cartridge, including the distance between the ends of the two cartridges. The spring-teeth *g* slide past the cartridges in the delivery-tube K, which cartridges are held in place by the teeth *h*. The last tooth *g* of the delivery-rod passes below the lower end of the lowest cartridge in the lowest compartment, *c*. If the breech is then closed, the cartridge II, which is supported by the cartridge-carrier D, will be pushed into the rear end of the barrel. The block 33 of the trigger F snaps into the recess 50 of the head-piece 49 of the firing-pin 52, whereby the head-piece will be held by this block 33. By pushing the breech-block forward with some force the firing-spring 55 is compressed, and by pressing the locking-lever 43 downward the locking-piece 25 passes into the step-shaped recess 26, whereby the breech will be locked safely. The spring cartridge-extractor 46 passes over the annular flange at the lower end of the cartridge and grasps the same. At the same time that the breech is closed the delivery-rod G, and all the cartridges contained in the delivery-tube K, will be pushed forward; then one tooth rests against the rear of each cartridge. The teeth *h* are pressed against the cartridges as they pass, and when the cartridges have passed these teeth *h* snap back again. The distance between the cartridges—that is, between the teeth *g*—is so arranged that the front end of the projectile or ball of one cartridge cannot strike against the fulminate of the next cartridge above it. The cartridges in the stock are separated by the transverse partitions *x*, and thus each cartridge is prevented from exploding the fulminate of the cartridge above it. From whatever cause the cover or stock may receive a shock, in no case is there danger of exploding one cartridge by the point of the projectile or ball behind it.

By the above operation the cartridge III passes under the breech-block upon the cartridge-carrier D—that is, in the same place that the cartridge II occupied before the breech was opened. The cartridge I is moved out of the compartment *a* toward the upper end of the stock. The cartridge II is moved out of its compartment *b*, under the cartridges in the compartment *a*, and the cartridge III will be moved out of its compartment *c*, under the cartridge in the compartment *b*, by its own weight and that of the supporting-cartridges in compartment

c. The cartridge IV passes into the place occupied by the cartridge III, and the other cartridges slide down after it. Fig. 1 shows the fire-arm in this condition.

From the above statement it will appear that every time the breech is opened and closed one cartridge will be moved out of the magazine toward the loading-space or breech of the gun, and that the lowest compartment, *c*, of the magazine will be unloaded before the rest, and all the cartridges of this compartment *c* must pass under the cartridges in the compartments *a b*.

In Fig. 1, I have numbered all the cartridges as they successively pass into the breech, and a further explanation of the movement of each separate cartridge will not be required.

In order to fire the cartridge I, the operator presses on the finger-plate F'. The lever 32 is moved downward, and at the same time the block 33 is moved out of the notch 50, whereby the firing-pin will be released and will be thrown forward, so that the tapering end of the firing-pin strikes the fulminate in the cartridge and causes the explosion of this cartridge. At the next opening of the breech the empty cartridge-shell is extracted. The cartridge-shell, which has been seized by the cartridge-extractor 46, is drawn out of the loading-space—that is, out of the rear end of the barrel—when the breech-block is withdrawn. The cartridge thrower or discharger 30 passes into the groove 45, and its point will be behind the bottom of the cartridge. By withdrawing the breech-block B rapidly the cartridge-shell is struck at its lower edge opposite the cartridge extractor or drawer, whereby the cartridge will be thrown from the cartridge-extractor, and by the lever action of this shock or blow it is thrown through the slot or aperture 23 in the direction of the arrow, as shown in Fig. 2. The cartridge II will be brought in front of the loading-space by the cartridge-carrier D, and is pushed into the loading-space—that is, the rear end of the barrel—in the manner described before. If all the cartridges have been removed from the magazine, the cartridge-carrier D will be pressed against the breech-block by the spring 64, and the lug 65 on the cartridge-carrier D presses the indicator-pin 40 out of the breech-chamber, and the rifleman cannot fail to discover that the magazine is empty.

If the fire-arm is to be used as a single-firing gun, the locking-slide 39 is pushed forward out of the recess 44 into the opposite recess, 75, while the breech is closed, whereby the entire cartridge-feeding mechanism is cut off.

If the repeating mechanism is to operate, the slide 39, which is connected with the connecting-rod C, is passed into the recess 44 of the ridge 77 on the locking-bar O, whereby the movements in closing and opening the breech will be transmitted to the delivery-rod G.

When not in use the entire breech and firing mechanism is closed by a trough-shaped slide, which has its edges bent over and run-

ning in grooves at the sides of this breech mechanism. This slide protects the mechanism from dust and moisture, and must be removed as soon as the breech mechanism is to be used.

Instead of providing the magazine with the partitions *x x* and loading it in the manner described, a cartridge-box made of tin or other metal, or pasteboard, and having the lower edge made movable, can be passed into the stock, and then the movable lower edge is withdrawn and the cartridges can drop from the compartments formed in this cartridge-box contained in the stock into the delivery-tube, in the same manner as described above.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. In a fire-arm, the combination, with the breech-chamber A, provided with the longitudinal slot 24, the vertical slot 27, and the stepped-shaped recess 26, of the breech-block B, provided with the locking-piece 25, and the locking-block O, secured to said breech-block, and provided with the locking-ridge 77, substantially as and for the purpose set forth.

2. In a fire-arm, the combination, with the breech-chamber A, provided with the longitudinal side slot, 24, the vertical slot 27, and the stepped-shaped recess 26, of the breech-block B, provided with the locking-piece 25, the locking-block O, provided with the ridge 77, having recess 44, and the connecting-arm C of the delivery-rod, substantially as and for the purpose set forth.

3. In a fire-arm, the combination, with the breech-chamber A, provided with the longitudinal side slot, 24, the vertical slot 27, the stepped-shaped recess 26, and the recess 75, of the breech-block B, the locking-block O, provided with ridge 77, having recess 44, the connecting-bar C of the delivery rod, and the slide 39, substantially as and for the purpose set forth.

4. In a fire-arm, the combination, with the breech-chamber A, provided with the horizontal side slot, 24, the vertical slot 27, and the recess 26, of the breech-block B, provided with the ridge or projection 47, and the locking-piece 25, and the spring-pressed firing-pin 52,

provided with the ridge or projection 51, substantially as and for the purpose set forth.

5. In a fire-arm, the combination, with the firing-pin 52, provided with the recess 50, and the breech-chamber A, of the trigger-lever F, provided with finger-plate F', the arm 32, the block 33, pivoted in said arm, and the spring 35, substantially as and for the purpose set forth.

6. In a fire-arm, the combination, with the track J and the slotted delivery-tube K, provided with the spring-catches *i* and the groove 62, of the delivery-rod G, sliding in said groove, and provided with the springs *f*, having teeth *g*, and means for operating said delivery-rod, substantially as and for the purpose set forth.

7. In a fire-arm, the combination, with the breech-chamber A, the breech-block B, provided with the locking-piece 25, the locking-block O, provided with the ridge 77, having recess 44, and the track J, of the slotted delivery-tube K, provided with the spring-catches *i*, the delivery-slide G, provided with the springs *f*, having teeth *g*, and the connecting-arm C, having eye 71, substantially as and for the purpose set forth.

8. The combination, with the connecting-rod C, of the locking-slide 39, which is mounted vertically adjustable between the recess 44 of the ridge 77 of the locking-block O and the recess 75 of the breech-chamber, whereby when this slide is pushed downward the connecting-rod C is pressed out of the recess 44 in the locking-ridge, so that the entire cartridge-feeding device is cut out, and the fire-arm can be used as a single-firing gun, substantially as herein shown and described.

9. In a fire-arm, the combination, with the cartridge-feeder D, provided with the lug 65, of the pin 40 and a spring, 41, substantially as herein shown and described, for the purpose of indicating whether the cartridge-magazine is empty or not, as set forth.

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

JOSEF SCHULHOF.

Witnesses:

VICTOR KARMIN,

Engineer.

JAMES RILEY WEAVER.