

F. D'UBALDO.
MAGAZINE GUN.

APPLICATION FILED DEC. 29, 1911.

Patented July 2, 1912.

3 SHEETS-SHEET 1.

1,031,428.

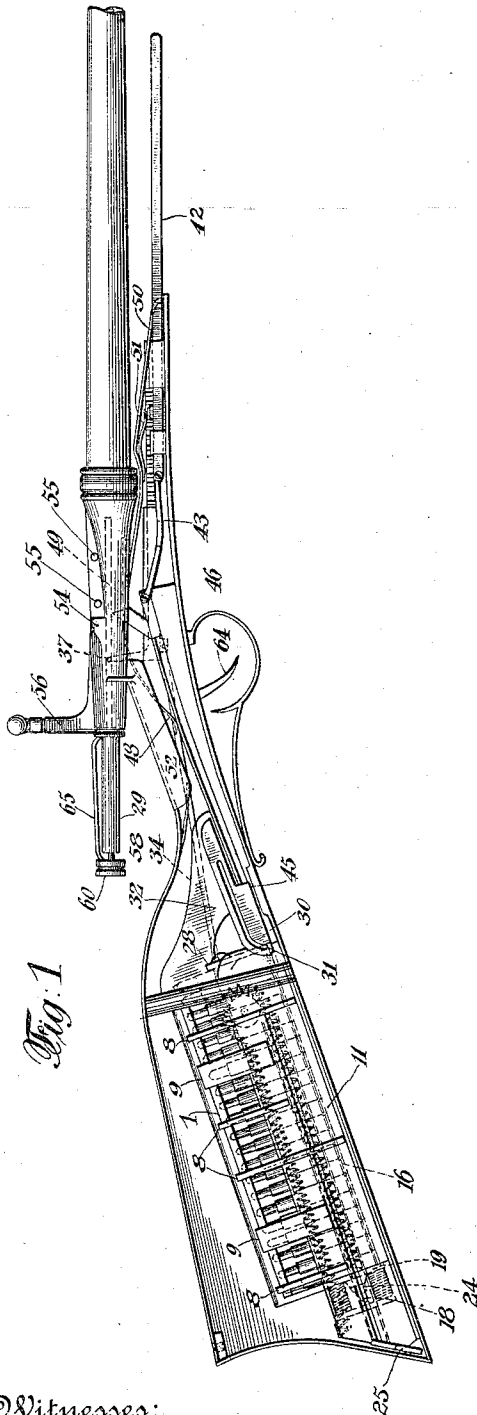


Fig. 1

Witnesses:
Wm. Ashley Kelly
Victor D. Borel

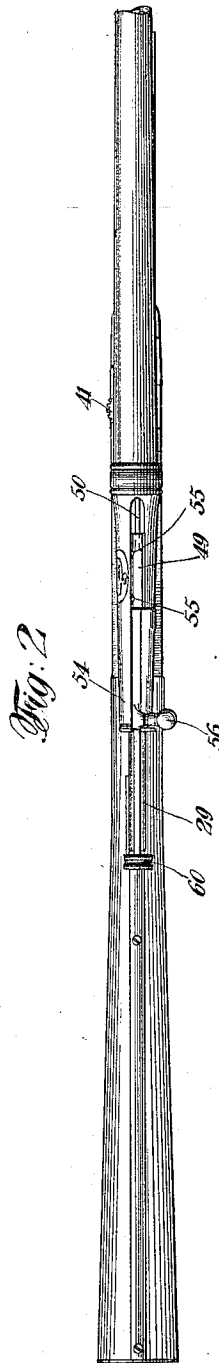


Fig. 2

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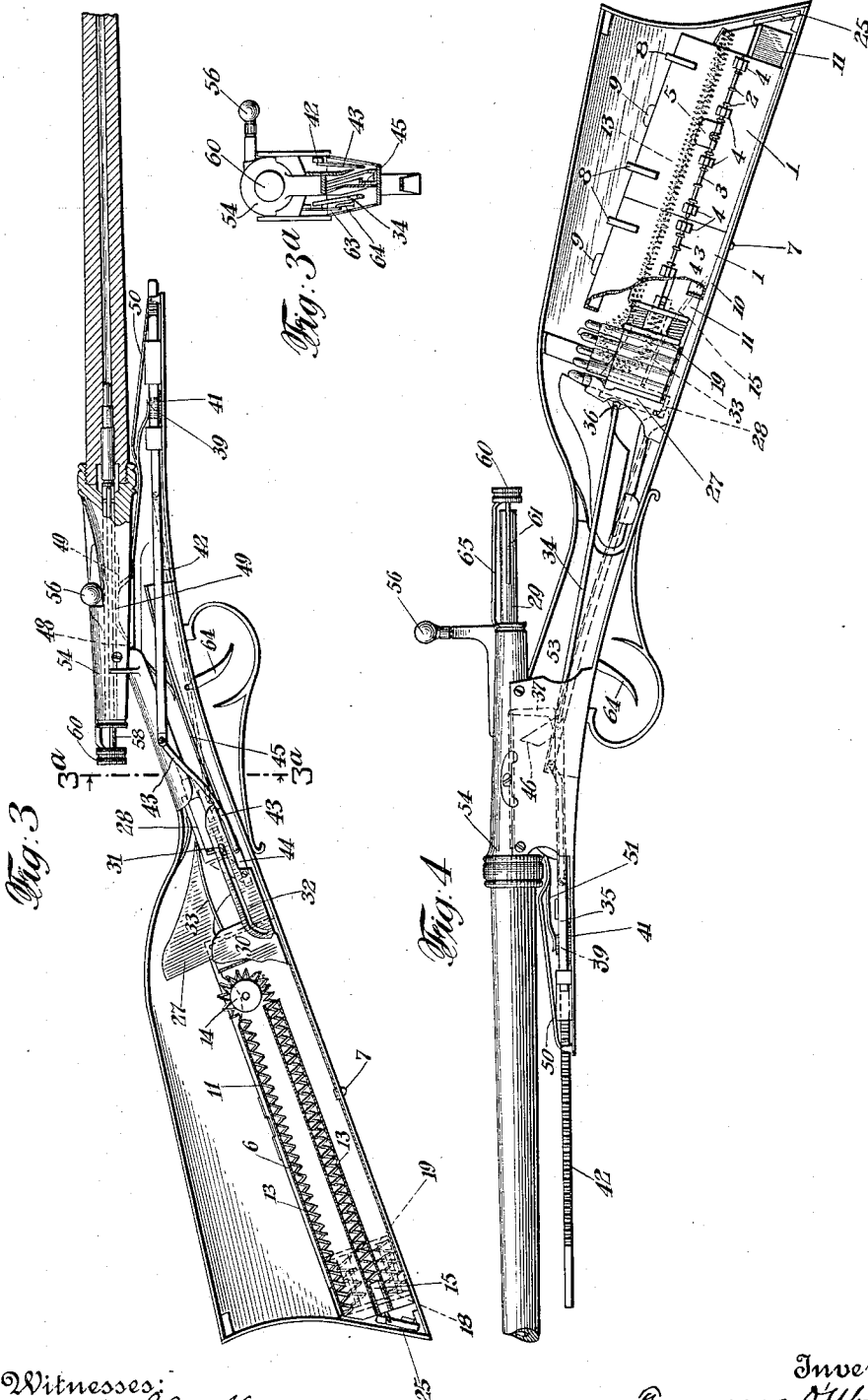
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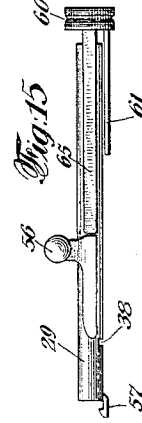
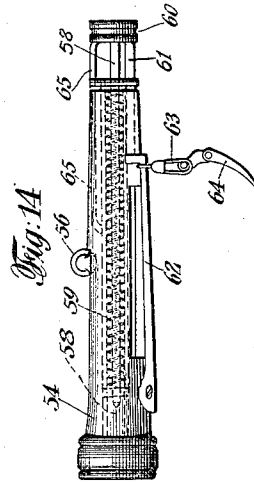
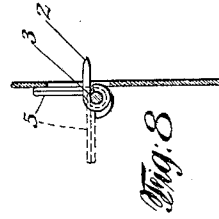
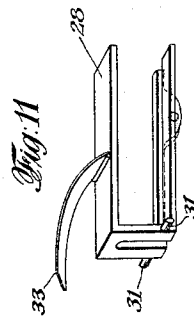
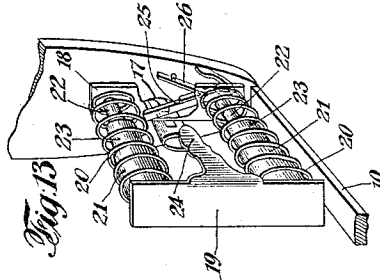
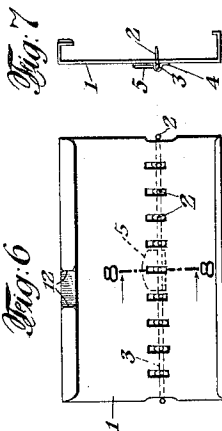
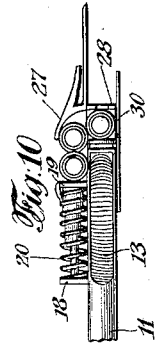
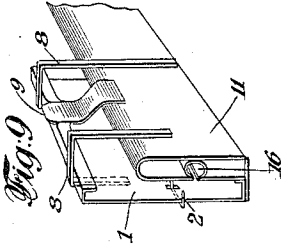
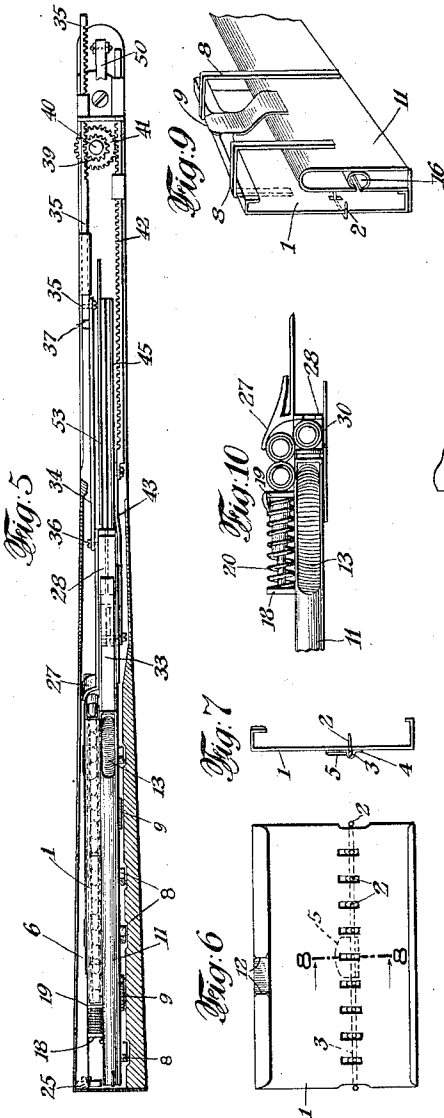
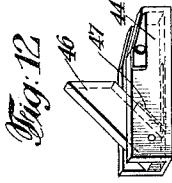
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Witnesses:
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UNITED STATES PATENT OFFICE.

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MAGAZINE-GUN.

1,031,428.

Specification of Letters Patent.

Patented July 2, 1912.

Application filed December 29, 1911. Serial No. 668,492.

To all whom it may concern:

Be it known that I, FRANCESCO D'UBALDO, a subject of the King of Italy, residing in the borough of Manhattan, in the county of New York and State of New York, have invented certain new and useful Improvements in Magazine-Guns, of which the following is a specification, reference being had therein to the accompanying drawings, forming part thereof.

My invention relates to magazine guns and more particularly relates to military rifles.

An object of my invention is to produce a gun of the magazine type of practical construction and of large magazine capacity and of larger capacity than the practical guns of this type commonly in use.

Other more particular objects are positiveness and certainty of action, convenience of operation including quickness and facility in recharging the magazine, and other objects and advantages which will hereinafter appear.

In carrying out my invention, the cartridges are stored in a substantially erect position in a magazine in the stock of the gun and are fed forward, successively tilted, and conveyed forward bullet-foremost through a throat in the hand-hold of the stock to the loading mechanism at the breech of the gun. The cartridges are supported in the magazine in removable holders, and a reserve supply of cartridges may be carried in extra or additional similar cartridge holders.

My invention includes improvements in the magazine, including improved removable cartridge-containing holders forming part of the magazine, improved feeding means for feeding the cartridges from the magazine, improved conveying mechanism for bringing the cartridges forward to the loading mechanism, and also includes transfer mechanism for transferring the cartridges from the magazine to the conveying mechanism.

More in detail, my invention includes a reciprocative conveyer actuated by a rack and pinion.

My invention also includes in combination a cartridge transfer receptacle mounted for tilting movement.

My invention also includes a retractile

spring (more particularly an extensible coiled spring) passing around a sheave and attached to a follower for feeding the cartridges through and from the magazine.

My invention also includes other features of construction and combinations of parts as will appear from the following description.

I shall now describe the magazine rifle illustrated in the accompanying drawings and embodying my invention and shall thereafter point out my invention in claims.

Figure 1 is a side elevation of the rifle with the bolt in retracted position and having the outer portion of the barrel broken away and parts of the stock and one of the breech-plates removed. Fig. 2 is a plan view of what is shown in Fig. 1 but with both rearward side parts of the stock in position. Fig. 3 is a view similar to Fig. 1 but with the bolt at firing position, the barrel and the spring case in section, the left side of the stock in place, and having the cartridge holders of the magazine and other parts omitted. Fig. 3^a is a section on a plane indicated by the line 3^a—3^a of Fig. 3 as viewed from the left. Fig. 4 is a view similar to Fig. 1 from the other side of the gun and having parts of one of the cartridge holders broken away. Fig. 5 is a plan view of the lower part of the stock frame and the mechanisms carried thereby, a part of the stock being in longitudinal section. Fig. 6 is an enlarged face view of one of the cartridge holders which form removable parts of the magazine. Fig. 7 is an end view of the holder shown in Fig. 6 as seen from the left. Fig. 8 is a further enlarged partial central vertical section on a plane indicated by the line 8—8 of Fig. 6 as viewed from the left. Fig. 9 is a perspective view of parts of the magazine and its adjuncts, drawn to the scale of Figs. 6 and 7. Fig. 10 is a partial plan illustrating the feeding of the cartridges from the magazine to the transfer receptacle, the scale being that of Figs. 6, 7 and 9. Fig. 11 is a further enlarged perspective view of the cartridge transfer receptacle and a portion of the magazine guard carried thereby. Fig. 12 is a perspective view of the cartridge conveyer, drawn substantially to the scale of Fig. 11. Fig. 13 is a perspective view of the cartridge feeding follower and the catch

for holding it at retracted position together with adjacent portions of the butt of the gun, the scale being slightly greater than in Fig. 11. Fig. 14 is a side view from the left side of the breech frame and its adjuncts, the scale of drawing being substantially that of Figs. 6 and 7. Fig. 15 is a plan view of the bolt to the same scale as Fig. 14.

In the magazine rifle illustrated in the drawings, the magazine in the stock will contain twenty cartridges, which with one in the barrel and another on the way from the magazine to the barrel, gives twenty-two shots as the maximum capacity of the gun. The cartridges are supported in holders or containers 1, constituting removable parts of the magazine. Two of the holders 1 may be placed at the same time in the gun, there being ten cartridges in each holder, and any additional convenient number of charged holders may be carried on the person. The holders 1 may be of sheet metal and are provided with top and bottom cartridge-retaining flanges, as shown in the drawings. In charging the holders the cartridges are slipped into the ends of the holders and are retained by the top and bottom flanges. After the cartridges have been placed in the holder and until such time as the holder may be inserted in the gun as a part of the magazine, the cartridges, whether a full charge or a less number, are prevented from slipping out at the ends of the holder and are properly spaced in the holder by pivoted prongs 2 carried by a common rock shaft 3 at the back of the holder and projecting at the respective ends of and through slots in the back of the holder, and properly spaced so that with a full charge of cartridges they will project between the cartridges and at each side of each cartridge. The rock shaft has bearings in small clips 4 secured to the back of the holder. The rock shaft and prongs are actuatable to project or retract the prongs 2 by a small handle 5 which has some lost motion on the rock shaft 3 so that it will lie flat against the back of the holder in either position of the prongs. The rotary movement of the handle 5 on the shaft 3 is limited by the projecting part of the middle prong 2 in one direction and in the other direction by a stop shoulder at the back of the same prong (Fig. 8).

In Figs. 6, 7 and 8 the cartridge-holding prongs 2 are shown in their projected cartridge-holding position. When these prongs are retracted they will fold back into the slots through which they project, so as to leave the inner surface of the holder unobstructed. In Fig. 8 the handle 5 is shown in broken lines as moved downward to the extent of taking up its lost motion, if moved farther down it would retract the prongs.

After the holders are placed in the gun the prongs 2 are retracted to permit the feeding of the cartridges along and from the holders as the gun is successively fired and reloaded. The rock shaft 3 has sufficient friction in its bearings to remain in either of its positions; and when the prongs 2 have been retracted with the holders in the gun they must remain in this position because of the fact that the handles 5 will be prevented from swinging out by a hinged door 6 provided in the left side of the stock (Fig. 3) for the insertion and removal of the holders 1, this door being held closed by a suitable catch 7. When the holders 1 are inserted in the gun, as parts of the magazine, they are slipped upward under rigid hooks 8 and against bent leaf springs 9 and rest upon a guideway 10 at the bottom and fit with their faces close up to the longitudinally slotted wall of a flattened tubular spring case 11, to the other or unslotted side of which the hooks 8 and leaf springs 9 are secured. Two holders are arranged in tandem, one behind the other, and longitudinal slipping of the holders is prevented by shoulders 12 forming between them a notch which receives one of the springs 9. It will be noted that the springs 9, by reason of their pressure upon the holders 1 above the points of contact therewith of the downwardly extending end portions of the hooks 8, will act to retain the holders in place.

The cartridges are under constant spring pressure tending to feed them forward through and out of the holders as fast as they are used. The mechanism for thus feeding the cartridges forward includes a long coiled feed spring 13 contained in the spring case 11. The upper end of this spring, as perhaps best seen in Fig. 4, is hooked over the rear end of the spring case, whence the spring extends forward and passes around a small sheave or pulley 14 pivoted in the spring case, and then extends rearward toward the butt of the gun. The rearwardly extending end of the spring 13 is attached to a plug 15 loosely slidable in a slotted guide tube 16 fixed in the spring case 11 with the slot therein registering with the slot of the spring case. The slidable plug 15 has a lug 17 projecting through the slot in the side of the spring case 11 and rigidly secured to the rear plate 18 of a follower. The follower has a front plate 19 which is at the rear of and pushes against the rearmost cartridge. The front plate 19 and the rear plate 18 are connected by coiled thrust springs 20 and these springs are guided by telescopic studs 21 and 22 carried by the front and rear plates respectively, and coöperative with intermediary telescopic members 23 (Fig. 13). The front plate 19 is provided with a rearwardly extending steadying tongue 24. The follower

springs 20 are supplemental to the main feed spring 13 and coöperate therewith in forcing out the last cartridges.

A spring-pressed catch 25 is pivoted inside the stock at the butt of the gun and is adapted to engage a notch shown in the exposed edge of the lug 17 for holding the follower at the retracted position while the cartridge holders 1 are being inserted or removed, and the catch 25 is pressed to the engaging position by a small bent leaf spring 26.

A plate 27 has a substantially vertical inclined cam face closing the forward end of the magazine, which has a lateral mouth or cartridge exit opening just forwardly of the spring case, the forward end of the latter being closed (Fig. 10). When the foremost cartridge is pushed from the forward holder 1, by the pressure of the follower upon the rearmost cartridge, it is pushed against the vertical inclined face of the cam plate 27. The transfer mechanism for receiving the cartridges from the magazine and delivering them to the conveying mechanism, will now be described.

The vertical cam face of the plate 27 forces the cartridge to the right out of alinement with the holders 1 and to a position in front of the sheave 14 and in alinement with the spring case 11. At this point the cartridge is received into a pivoted and sliding carriage or transfer receptacle 28, which is brought into the rearward and vertical position (Figs. 1 and 4) by the backward movement of the bolt 29 in the loading operation, but normally this carriage occupies a reclining and forward position (Figs. 3 and 5). There is a plate 30 at the right of the carriage 28 and this plate, which is shown as an extension of the right wall of the spring case 11, acts as a lateral stop for the cartridge and prevents it from being pushed through the carriage, which is of U-shape, the forward or lower leg of the U being split, the split or bifurcation extending into the bottom of the carriage (see Fig. 11). The carriage 28 is mounted for tilting and reciprocative movements and is provided with combined pivot pins and guide pins 31. The carriage 28 is guided between a forward extension of the cam plate 27 on the left and a guide plate 32 on the right and extending forward from the stop plate 30. The forward and rearward movements of the carriage 28 are limited by a slot in the guide plate 32, as seen in Figs. 1 and 3, the slot being curved downward at the rear end to facilitate the tilting of the carriage 28. When the carriage 28 is at its normal or forward position, the vertical opening or mouth through which the cartridges are fed when pressed against the cam plate 27 is closed to the passage of cartridges by the edge of

a leaf spring 33 extending into the lower part of the spring case 11 and hinged at its forward end to the rear side of the carriage 28 (Figs. 3, 5 and 11) so as to be pulled forward by the carriage 28 to form a guard across the cartridge exit.

The carriage 28 is actuated in its sliding movement by a pivoted link 34, (Figs. 4 and 5) by which it is connected to a sliding bar 35 sliding through guide loops on the forward part of the gun stock frame, as shown in the drawings. The rearward end of the link 34 is pivotally connected to the transfer carriage 28 by a screw stud 36 which rigidly projects from a lug on the carriage 28 to the left beyond the forward extension of the cam plate 27 (Figs. 4 and 5), the plate 27 at this point being cut on an arc and also forwardly slotted (Fig. 4) to guide the stud 36 and thus assist in guiding the carriage 28 in its tilting and sliding movements. The bar 35 has an upward projection 37, the end of which is received in a notch 38 (Fig. 15) in the bolt 29 so that the bar 35 is directly reciprocated by the bolt 29. When the bolt 29 is pulled back, the carriage 28 is brought to the rear and upright or cartridge-receiving position (Figs. 1 and 4) and when the bolt is moved forward the carriage 28 containing the cartridge is tilted to a nearly horizontal position and carried forward (Figs. 3 and 5). During the next complete movement backward and forward of the bolt 29, the cartridge in the carriage 28 will have been replaced by another and the former cartridge will have been carried farther forward by the conveying mechanism and inserted into the barrel by the loading mechanism including the bolt 29.

The conveying mechanism will now be described.

The mechanism for taking the cartridge from the carriage 28 and bringing it forward to the loading mechanism is actuated from the bar 35, which is a rack bar having teeth meshing with those of a spur pinion 39 pivoted on a vertical stud 40 carried by the frame of the stock under the breech of the gun barrel and on which is also pivoted a spur gear 41 which is mounted to rotate with the pinion 39. The gear 41 meshes with the teeth of a rack bar 42 located at the right side of the gun and sliding through guide loops as shown, the other rack bar 35 being at the left (Fig. 5), the movements of the two rack bars being in opposite directions and the rack bar 42 moving farther and faster than the rack bar 35 to the extent of the difference in diameter of the gear and the pinion.

The rack bar 42 is connected by a pivoted link 43 to a sliding conveyer block 44 traveling in a guideway 45 which partly surrounds the conveyer block, leaving exposed

only the upper part of the right side and the adjacent portion of the top. The conveyer block 44 is of U-shape transversely, providing a slot or deep groove in its top in which is pivoted a finger or catch 46 which normally projects upwardly and forwardly at an inclination and is yieldingly pressed to this position by a small bent leaf spring 47 and has a shoulder coming in contact with the bottom of the groove in the conveyer block to limit its outward movement (Fig. 12). The path of the conveyer block 44 overlaps that of the transfer carriage 28, the conveyer passing under the carriage (Fig. 3), and the spring-pressed finger or catch 46 is adapted to engage the base of the cartridge in the carriage 28 through the slot in the carriage. As the bolt 29 is again moved backward the transfer carriage 28 is retracted and the conveyer block 44 travels forward, the finger 46 pulling with it the cartridge from the carriage, the cartridge at first sliding along the top of the guideway 45 and then riding upward on an inclined bowed leaf spring 48 resting at its rear end upon the top of the guideway 45 and at its forward end merging into a cartridge lifter or cartridge shifter 49 having a supporting lever arm 50 extending forward and hinged to the extreme forward end of the gun stock frame. The shifter-supporting arm 50 carries a short leaf spring 51 whose free end engages the pinion stud 40 to assist in pressing the cartridge shifter upward. As the cartridge moves forward it is guided by lateral walls 52 and 53 at the right and left, respectively, which, together with the upper strap of the stock frame, the top of the guideway 45 and the bowed spring 48, form a cartridge guiding throat through which the cartridges are conveyed bullet-foremost. As the conveyer block 44 travels forward the advancing cartridge will bend the springs 48 and 51 until the cartridge arrives upon the lifter 49 just forwardly of the retracted bolt 29 and opposite a vertically slotted breech opening (Fig. 2) in a breech frame 54 in which the bolt 29 slides. At this point the lifter springs 48 and 51 elevate the lifter 49 and raise the cartridge into the open breech in front of the retracted bolt 29. The cartridge is prevented from passing upward entirely through the breech frame by the rounded ends of spring-pressed studs 55 which project slightly into the breech opening (Fig. 2). When the bolt 29 is again pushed forward the carriage 28 will bring forward another cartridge, and the conveyer block 44 is brought back with its finger 46 at the base of this other cartridge. This forward movement of the bolt 29 also pushes the first cartridge into the gun barrel (Fig. 3), closes the breech of the barrel and cocks the gun ready for firing, the

breech bolt 29 being locked in closed position by rotating its projecting handle 56 to the right to engage it with a shoulder on the breech frame 54 (Fig. 3).

The empty shell is withdrawn from the barrel by a hook 57 at the forward end of the bolt 29 (Fig. 15). The withdrawn shell is then ejected from the breech opening by the pressure of the next advancing loaded cartridge which forces the empty shell upward past the yieldable studs 55.

The firing mechanism will now be described.

A firing pin 58 within the breech bolt 29 and spring-pressed to a forward position by a coiled spring 59 (Fig. 14), has an external head 60 which is provided with an eccentrically-located forwardly-projecting trigger bar 61 lying at the outside of the bolt 29. The bar 61 in the final forward movement of the bolt 29 comes into contact with the upwardly bent end of a rearwardly-extending spring arm 62, which pushes back the firing pin 58. In firing, the spring arm 62 is drawn down by a loop or stirrup 63 forming a connection to the trigger 64 (Fig. 14). The head 60 of the firing pin 58 is also provided with a guide bar 65 which is longer than the trigger bar 61 and engages in the same slot in the top of the breech frame 54 that provides for the sliding movement of the bolt handle 56 to prevent rotation of the firing pin and consequent displacement of the trigger bar 61 when the bolt 29 is fully retracted (see Fig. 4 particularly).

From what has been said hereinbefore it will be understood that each backward and forward movement of the breech bolt 29 extracts the empty shell and reloads the gun, the cartridges being brought forward one by one from the magazine whose supply may be conveniently replenished from time to time. The details of the complete operation have been hereinbefore described in connection with the description of the construction involved and illustrated in the drawings.

It is obvious that various modifications may be made in the construction shown in the drawings and hereinbefore particularly described within the principle and scope of my invention.

I claim:

1. In a magazine gun, the combination of a cartridge magazine adapted to contain cartridges in a substantially erect position, means for delivering a cartridge in its erect position from the magazine to transfer mechanism, transfer mechanism for receiving the cartridge from the magazine and tilting it to a reclining position, conveying mechanism for taking the cartridge from the transfer mechanism and conveying it end foremost to loading mechanism, the con-

veying mechanism including means for shifting the cartridge to a position in which it is engageable by the loading mechanism, and loading mechanism for receiving the
 5 cartridge from the conveying mechanism and bringing it to firing position.

2. In a magazine gun, the combination of a cartridge magazine, transfer mechanism for receiving a cartridge from the magazine
 10 and delivering it to conveying mechanism, conveying mechanism including a rack, the conveying mechanism being for taking the cartridge from the transfer mechanism and delivering it to loading mechanism, rack and
 15 pinion connections between the transfer mechanism and the rack of the conveying mechanism, and loading mechanism for receiving the cartridge from the conveying mechanism and bringing it to firing position.
 20 tion.

3. In a magazine gun, the combination of a cartridge magazine adapted to contain cartridges in a substantially erect position, a cartridge receptacle having an open side
 25 adapted to register with the mouth of the magazine, means for pushing a cartridge from the magazine into the receptacle, means for tilting the cartridge containing receptacle from the erect to a reclining position, conveying mechanism for removing
 30 the reclining cartridge from the receptacle and conveying it end foremost to loading mechanism, and loading mechanism for receiving the cartridge from the conveying mechanism and bringing it to firing position.
 35 tion.

4. In a magazine gun, the combination of a cartridge magazine adapted to contain cartridges in a substantially erect position, a cartridge receptacle having an open side
 40 adapted to register with the mouth of the magazine and also having a bifurcated wall the bifurcation of which extends into the bottom of the receptacle, means for pushing a cartridge from the magazine into the receptacle, means for tilting the cartridge containing
 45 receptacle from the erect to a reclining position, a reciprocative conveyer, a pawl pivoted on the conveyer and in the retracted position of the conveyer engageable with the base of the cartridge through the slot formed by the bifurcation of the receptacle, means for reciprocating the conveyer
 50 to convey the cartridge from the cartridge receptacle to loading mechanism, and loading mechanism for receiving the cartridge from the conveyer and bringing it to firing position.
 55 tion.

5. In a magazine gun, the combination of a cartridge magazine adapted to contain cartridges in a substantially erect position, a cartridge receptacle having an open side
 60 adapted to register with the mouth of the magazine and also having a bifurcated wall the bifurcation of which extends into the
 65

bottom of the receptacle, means for pushing a cartridge from the magazine into the receptacle, means for tilting the cartridge containing receptacle from the erect to a reclining position, a reciprocative conveyer, a
 70 pawl pivoted on the conveyer and in the retracted position of the conveyer engageable with the base of the cartridge through the slot formed by the bifurcation of the receptacle, means for reciprocating the conveyer
 75 to convey the cartridge from the cartridge receptacle to loading mechanism, loading mechanism including a reciprocative bolt, a guide throat for the cartridge coöperative with the conveyer and having an opening at
 80 the front of the retracted bolt, and a spring-pressed cartridge-shifter forming a wall of the throat opposite to said opening for shifting the cartridge into the path of the retracted bolt when the cartridge is brought
 85 to forward position by the conveyer.

6. In a magazine gun, the combination of a cartridge magazine adapted to contain cartridges in a substantially erect position, a tilting and reciprocative cartridge receptacle having an open side adapted to register
 90 with the mouth of the magazine, means for pushing a cartridge from the magazine into the receptacle, means for imparting to the receptacle its tilting and reciprocating
 95 movements, a reciprocative conveyer whose path of movement overlaps that of the receptacle, connections between the conveyer and the receptacle for effecting their concerted reciprocation in opposite directions,
 100 the conveyer having a part engageable with the base of the cartridge in the receptacle, and loading mechanism connected for concerted action with the conveyer for receiving the cartridge from the conveyer and
 105 bringing it to firing position.

7. In a magazine gun, the combination of a manually reciprocative breech bolt, a reciprocative rack bar movable with the breech bolt, a cartridge transfer receptacle
 110 mounted for reciprocative and tilting movements for receiving cartridges one by one from a magazine, a pivoted link connecting the rack bar to the transfer receptacle, a pinion engaged by the rack bar, a gear rotatable
 115 with the pinion, a reciprocative conveyer rack engaged by the gear, a reciprocative cartridge conveyer for taking the cartridges successively from the transfer receptacle and conveying them to a position
 120 forwardly of the breech bolt, a pivoted link connecting the conveyer rack with the conveyer, and a magazine from which the cartridges are supplied to the transfer receptacle.
 125

8. In a magazine gun, the combination of loading mechanism, conveying mechanism for conveying cartridges to the loading mechanism, a cartridge transfer receptacle
 130 mounted for reciprocative and tilting move-

ments having an open side for the reception of a cartridge, a magazine having a mouth registering with the open side of the cartridge receptacle in the erect position of the latter, means for pushing the successive cartridges from the magazine into the transfer receptacle, means for imparting the reciprocative and tilting movements to the transfer receptacle, and a guard carried by the transfer receptacle for closing the mouth of the magazine when the transfer receptacle is moved away therefrom.

9. In a magazine gun the combination of a magazine adapted to contain cartridges in a substantially erect position, the magazine having a lateral mouth and a laterally inclined cam-guide for directing the cartridges through the mouth, a spring-pressed follower pushing the cartridges toward the mouth of the magazine, a movable guard normally closing the mouth of the magazine, a cartridge transfer receptacle carrying the magazine guard and mounted for reciprocative and tilting movements, the transfer receptacle having an open side adapted to register with the mouth of the magazine in the erect position of such receptacle, loading mechanism, connections between the loading mechanism and the transfer receptacle for imparting the reciprocative and tilting movements to the latter, and conveying mechanism actuated by the loading mechanism for taking cartridges from the transfer receptacle and delivering them to the loading mechanism.

10. In a magazine gun, the combination of a magazine adapted to contain cartridges in a substantially erect position, the magazine having a lateral mouth and a laterally inclined cam guide for directing the cartridges through the mouth, a follower for pushing the cartridges toward the mouth of the magazine, a pulley adjacent to the mouth of the magazine, a follower-actuating retractile spring passing over the pulley and having one end attached to the follower and having its other end stationarily anchored, a movable guard normally closing the mouth of the magazine, a cartridge transfer receptacle carrying the magazine guard and mounted for reciprocative and tilting movements, the transfer receptacle having an open side adapted to register with the mouth of the magazine in the erect position of such receptacle, loading mechanism, connections between the loading mechanism and the transfer receptacle for imparting the reciprocative and tilting movements to the latter, and conveying mechanism actuated by the loading mechanism for taking cartridges from the transfer receptacle and delivering them to the loading mechanism.

11. In a magazine gun, the combination of a magazine adapted to contain cartridges in a substantially erect position, the magazine

having a lateral mouth and a laterally inclined cam guide for directing the cartridges through the mouth, a follower for pushing the cartridges toward the mouth of the magazine, a pulley adjacent to the mouth of the magazine, and a follower-actuating retractile spring passing over the pulley and having one end attached to the follower and having its other end stationarily anchored.

12. In a magazine gun, the combination of a magazine adapted to contain cartridges in a substantially erect position, the magazine having a lateral mouth and a laterally inclined cam guide for directing the cartridges through the mouth, a follower for pushing the cartridges toward the mouth of the magazine, a pulley adjacent to the mouth of the magazine, a follower-actuating retractile spring passing over the pulley and having one end attached to the follower and having its other end stationarily anchored, and a catch for holding the follower at retracted position to permit charging the magazine.

13. In a magazine gun, the combination of a magazine adapted to contain cartridges in a substantially erect position and having a mouth from which the cartridges are fed, a forward follower plate at the rear of the cartridges for pushing them toward the magazine mouth, a rear follower plate, a thrust spring pushing apart the follower plates, a pulley adjacent to the mouth of the magazine, and an extensible coiled spring passing over the pulley and having one end attached to the rear follower plate and having its other end stationarily anchored.

14. In a magazine gun, the combination of a magazine adapted to contain cartridges in a substantially erect position and having a mouth from which the cartridges are fed, a follower for pushing the cartridges toward the mouth of the magazine, the magazine including removable cartridge holders, retaining hooks beneath which the holders are received, and a retaining spring coöperative with the hooks to removably retain the holders in place as parts of the magazine.

15. In a magazine gun, the combination of a magazine adapted to contain cartridges side by side and having a mouth from which the cartridges may be fed laterally, and a follower for pushing the cartridges toward the mouth of the magazine; the magazine including a removable cartridge holder and means for removably retaining the holder in place, such holder comprising an open-ended casing and retractile cartridge-retaining projections which may be retracted to permit the feeding of the cartridges from the magazine.

16. In a magazine gun, the combination of a magazine adapted to contain cartridges in a substantially erect position and having a mouth from which the cartridges are fed and means for feeding the cartridges from

the magazine, the magazine including a removable cartridge holder and means for removably retaining the holder in place in the gun, such holder comprising a casing open at the ends and open at one side excepting top and bottom cartridge-retaining flanges, transverse slots being provided in the closed side of the casing, a rock-shaft extending longitudinally of the casing at the outside thereof adjacent to the slots, cartridge retaining prongs carried by the rock-shaft

and projecting through the slots and adapted to be retracted by a partial rotation of the rock-shaft, and an actuating handle having a rotative lost motion connection with the rock-shaft.

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

FRANCESCO D'UBALDO.

Witnesses:

WM. ASHLEY KELLY,
BERNARD COWEN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
