J. REBMAN.

MAGAZINE FIREARM.

APPLICATION FILED JUNE 12, 1909.

940,191.

Patented Nov. 16, 1909.

2 SHEETS—SHEET 1.

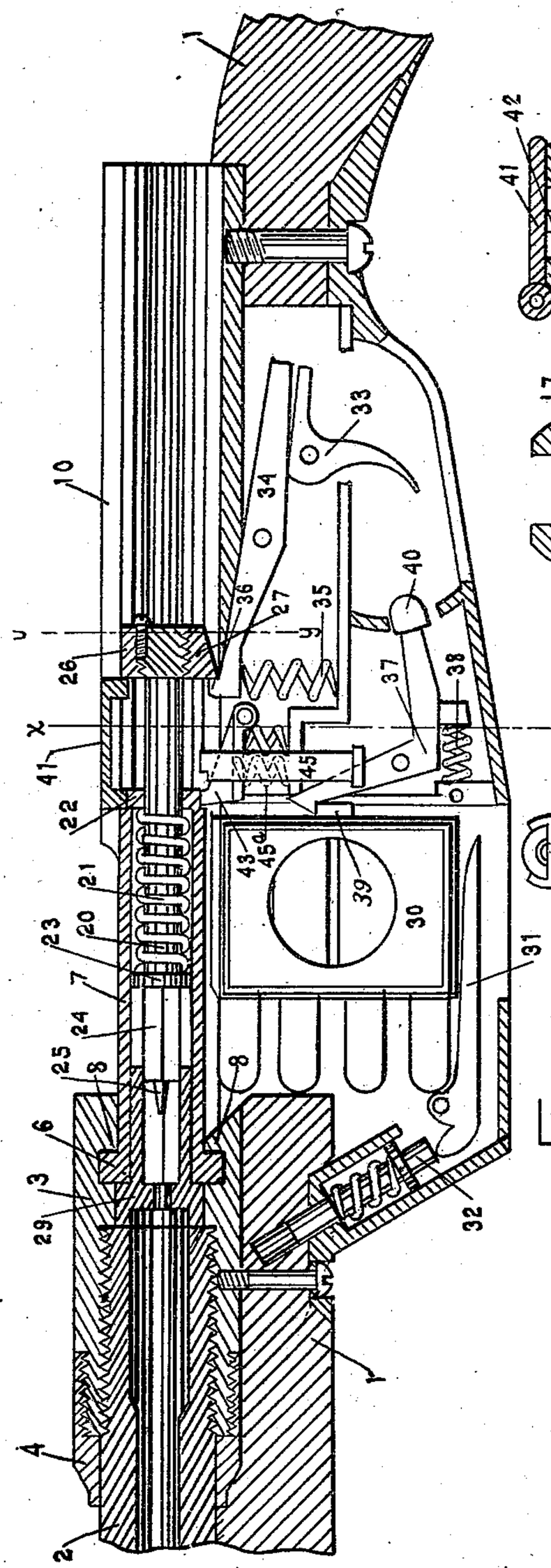

Fig. 1.

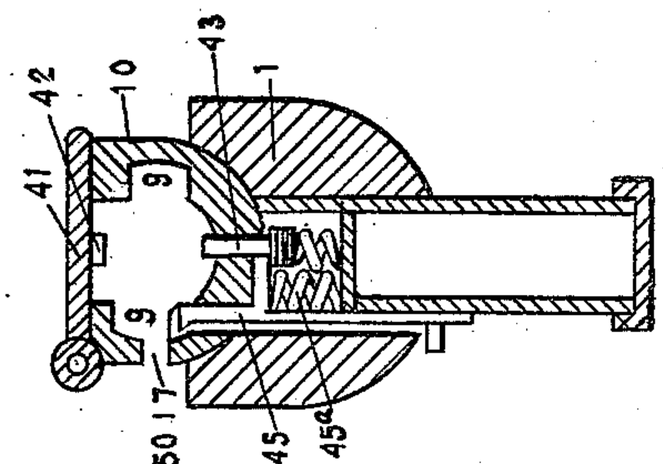

Fig. 2.

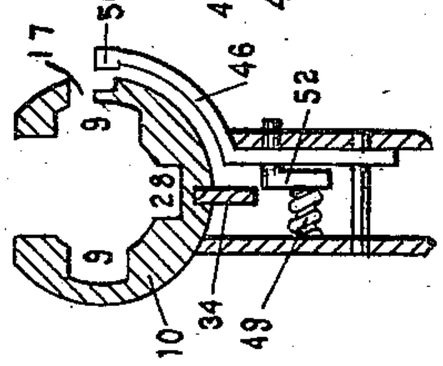

Fig. 3.

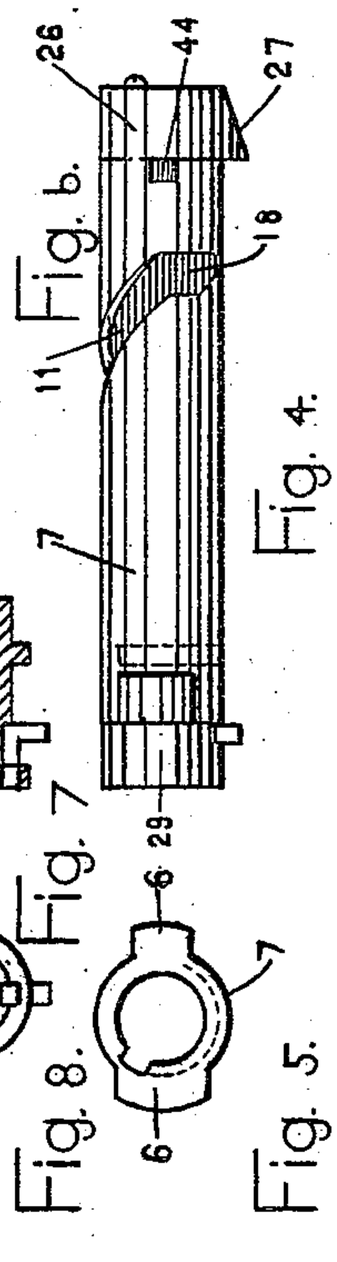

Fig. 4.

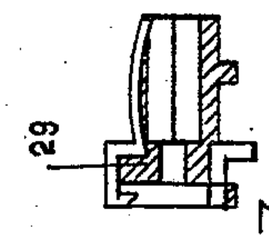

Fig. 7

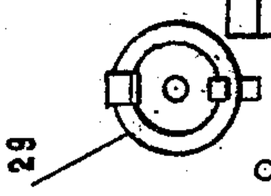

Fig. 8.

Fig. 5.

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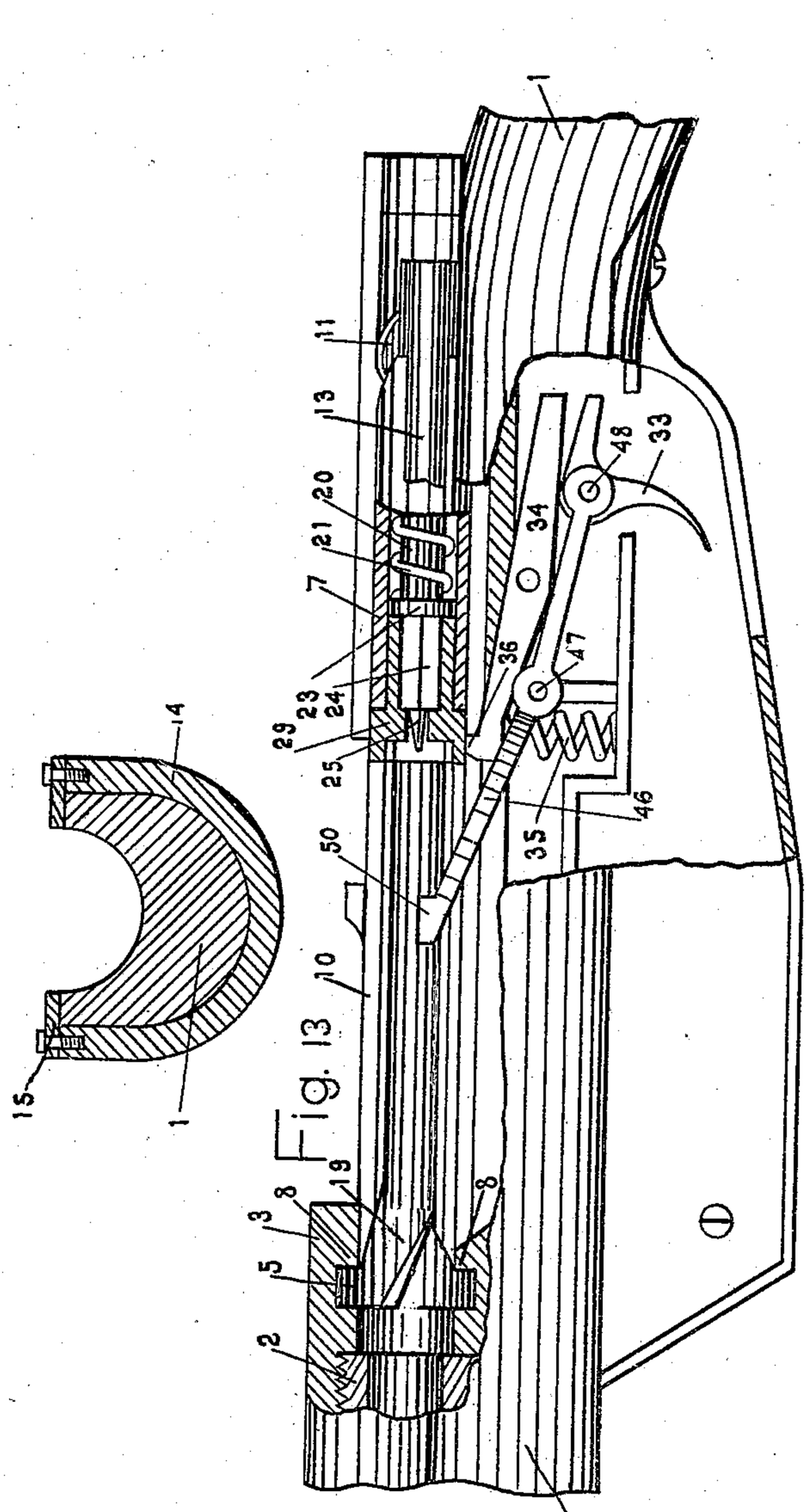

Fig. 13

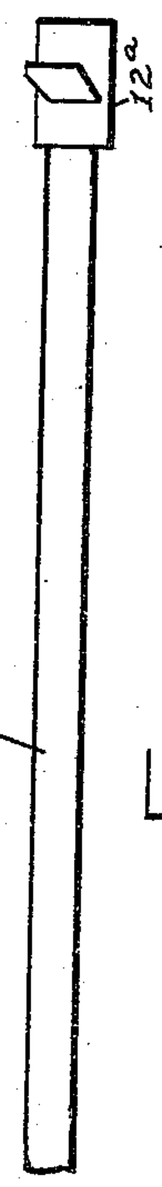

Fig. 9.

Fig. 12

Fig. 11.

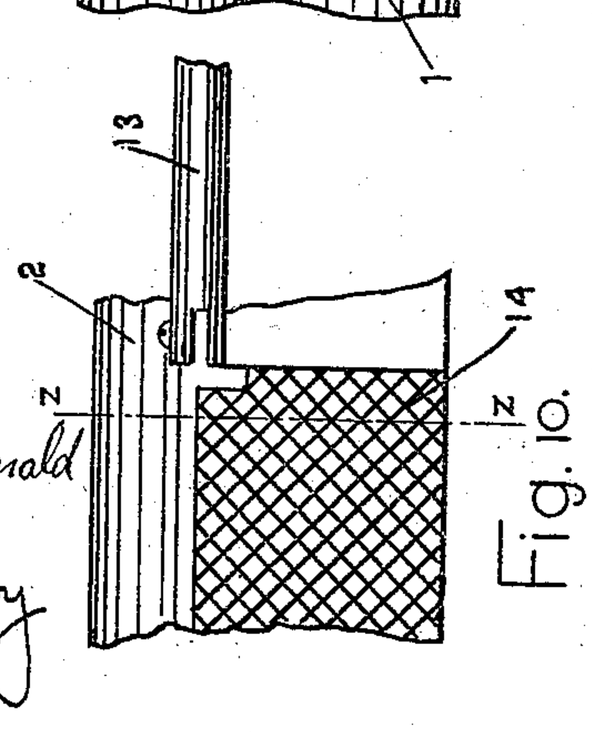

Fig. 10.

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UNITED STATES PATENT OFFICE.

JOSEPH REBMAN, OF DALLAS, TEXAS.

MAGAZINE-FIREARM.

940,191. Specification of Letters Patent. Patented Nov. 16, 1909.

Application filed June 12, 1909. Serial No. 501,686.

To all whom it may concern:

Be it known that I, JOSEPH REBMAN, a citizen of the United States, residing at 123 Polk street, Dallas, in the county of Dallas and State of Texas, have invented certain new and useful Improvements in Magazine-Firearms, of which the following is a specification.

My invention relates to new and useful improvements in magazine fire arms.

It more particularly relates to that class of fire-arms in which a loader containing the charge, ordinarily consisting of fine cartridges is introduced into the breech of the gun from above, the cartridges subsequently being elevated singly into the breech by automatic means.

The object of the invention is to provide a magazine fire-arm, the breech-bolt of which will be operated by the left hand, through the agency of a rod connected to the bolt and to a sliding hand-piece beneath the barrel, thus allowing the right hand to be used solely for operating the trigger and enabling the gun to be fired in more rapid succession.

A further object is to provide a magazine fire-arm, the breech-bolt of which will be automatically safety locked against the recoil of the discharge, and which will be provided with improved means for preventing repetition.

Finally, the object of my invention is to provide a device of the character described that will be strong, durable, simple and efficient, and comparatively easy to produce, also one in which the various parts will not be likely to get out of working order.

With these and various other objects in view, my invention has relation to certain novel features of construction and operation, an example of which is described in the following specification and illustrated in the accompanying drawings, wherein:

Figure 1 is a vertical, longitudinal, sectional elevation of that portion of a magazine gun of the "bolt" type, to which my invention relates, the bolt being shown closed. Fig. 2 is a cross-section on the line *x*—*x* of Fig. 1. Fig. 3 is a broken cross section on the line *y*—*y* of Fig. 1. Fig. 4 is a separate view of the breech-bolt, showing the ejector therein at one extremity and the head carried by the firing pin, at the other. Fig. 5 is an end view of the breech bolt. Fig. 6 is an end view of the loader which holds the cartridges in the magazine. Fig. 7 is a vertical, longitudinal section through the ejector, and Fig. 8 is an end view of the same. Fig. 9 is a vertical, longitudinal elevation of the operating mechanism of the gun in partial section. Fig. 10 is a partial elevation of the sliding hand-piece showing the connection of the rod thereto, whereby the breech-bolt is actuated. Fig. 11 is a longitudinal elevation of the half-round rod connecting the sliding hand piece to the breech-bolt and Fig. 12 is an end view of the same. Fig. 13 is a cross section through the sliding hand piece, on the line *z*—*z*, showing the means of its support.

Referring now more particularly to the drawings, wherein like numerals of reference designate similar parts in all the figures, the numeral 1 denotes a portion of the gun stock, and 2 a portion of the barrel of the gun, the greater portion of these parts being omitted as non-essential to the invention. The barrel is screw threaded into the receiver 3 and secured by the lock-nut 4. The usual recesses 5, common in bolt guns, are positioned at top and bottom upon the interior of the receiver, just at the rear of the barrel, being adapted to receive the locking lugs 6, carried by the breech-bolt 7. The shoulders 8 prevent the recoil of the breech-bolt when the lugs 6 are turned into the recesses 3 and the gun is discharged. Longitudinal grooves 9 are provided in the interior of the bolt-housing 10 at each side thereof, to receive the lugs 6, thus permitting the bolt to be actuated back and forth, and at the same time preventing the bolt from turning. Upon the rear extremity of the breech-bolt, is provided a helical groove 11, extending partially around the bolt upon the exterior surface. This groove is adapted to receive a lug 12 carried at one extremity of the rod 13. The other extremity of the rod 13 is attached to the sliding hand-piece 14, which is provided with inwardly projecting plates upon its upper edge, adapted to slide upon the gun stock in a manner common to the art. The lug 12 is connected to the rod 13 by a neck 16, which slides in a longitudinal slot 17 upon one side of the bolt-housing 10. The lug 12 is carried by a curved head 12ª which slides in one of the grooves 9, preventing the lug being displaced outwardly through the slot 17.

A recess 18 is provided at the extremity of the helical groove, near the rear end of the bolt, its sides being transverse to the bolt. When the lug 12 is in this recess and

the hand-piece is operated forward or back, the lug 12, bearing upon the transverse sides of the recess, actuates the breech-bolt longitudinally without exerting the torsional strain which would result were such recess not provided. When the hand-piece slides forward, the breech-bolt has forward motion only, until the locking lugs 6 contact with the inclined approaches 19 to the recesses 5. The lugs are now deflected, one upward and the other down, causing the breech-bolt to rotate, while still advancing longitudinally, and thus freeing the lug 12 from the recess 18. Further longitudinal advancement is prevented when the lugs 6 enter the recesses 5, but a further rotation is produced as the hand piece continues to slide forward, by the pressure of the lug 12 against the helical side of its groove. The locking lugs are thus securely recessed in the receiver 3 before the gun may be fired, and bearing against the shoulders 8, they prevent any possible recoil of the breech-bolt. The reverse of the process just described occurs when the hand-piece is slid back after a discharge. At first the breech-bolt is simply rotated, due to the rearward pressure of lug 12 against the rear side of the helical groove. When lug 12 enters recess 18, and the lugs 6 are freed from the recesses 5, a rearward motion is combined with the rotation; the motion becomes entirely rearward when the lugs 6 leave the inclined approaches 19. The breech-bolt carries a firing pin 20, and a coiled spring 21, surrounding the pin. The spring has its rear abutment against the head 22, integral with the rear end of the bolt. The forward end of the spring abuts against the shoulder 23 upon the forward part of the pin. In front of this shoulder, the pin has a portion 24, of square cross section, terminating in the usual tapering portion 25, adapted to strike the cartridge cap. Upon the rear extremity of the firing pin, is screw-threaded a head 26, a small screw being tapped into threads to prevent any possibility of the head working loose. A lug 27 projecting from the lower extremity of this head, is adapted to slide in a longitudinal groove 28 in the bottom of the bolt-housing, serving to prevent the pin from being rotated by the breech-bolt. Into the front extremity of the breech-bolt, there fits the usual form of ejector 29, which is provided with an aperture of square cross-section adapted to receive the square, forward part of the firing pin, rotation of the ejector being thus prevented.

The usual form of loader 30, is employed, having the common device of a pivoted lever 31 underneath it to elevate the cartridges, and a spring actuated plunger 32, acting upon the lever.

The trigger 33 has the shape of a bell crank lever, and is adapted when drawn back, to raise the rear extremity of the lever 34 and thereby lower the upper extremity which extends through a slot in the bottom of the bolt-housing and is normally restrained in that position by a coiled spring 35 bearing upon the under surface of said upper extremity. A slight vertically extending projection 36 on the upper extremity of the lever 34 is adapted to catch the lug 27, when the breech-bolt is moving forward and hold the same, preventing further advance of the firing pin and compressing the spring 21. When the trigger is drawn back, the firing pin is released and thrown forward by the spring 21, thus firing the cartridge. The pivotally mounted bell crank lever 37 normally prevents upward displacement of the loader 30, the spring 38 holding the hooked upper extremity of the lever in engagement with the projection 39 upon the end of the loader. Pressure of the finger upon the extremity 40 of the lever compresses the spring 38 and permits the loader to be removed from the top if desired.

The hinged door 41 in the top of the bolt-housing is provided with a projection 42 upon its under surface, which when the door is down, acts as a safety-lock, preventing the gun from being fired. The gun may thus be carried loaded, when desired, without risk of an accidental discharge.

The pivotally mounted lever 43 is provided at its upper extremity with a slight projection adapted to enter the recess 44 in the rear extremity of the breech-bolt, when the same is in its forward position, and the gun ready to be fired. This prevents any possible rotation of the breech-bolt, when the same is in its closed position. Without this safe-guard, the breech-bolt might be accidentally turned so as to free the locking lugs 6 from their recesses, and permit the spring 21 to force the bolt back. The numeral 45 denotes an unlocking device for lever 43, consisting of a strip of metal vertically slidable in a slot in the gun stock, and provided with an inwardly projecting arm near its upper extremity, bearing upon a flange on the lower edge of the lever 43. A spring 45[a] normally holds this arm upraised so as to exert no pressure upon lever 43. A slight projection is provided upon the lower extremity of the strip 45 which may be pressed downward by the finger, thus depressing the lever 43 and allowing the breech bolt to be slid back and the cartridge to be removed without discharging the same.

The lever 46 is transversely slidable upon the pins 47 and 48 and is acted upon by a coiled spring 49 in such a manner that the curved arm of the lever is normally held outward from the gun and in the line of travel of the rod 13. The enlarged portion 50 upon the upper extremity of the lever 46 is

beveled on its outer surface, and a beveled edge 51 is provided at the end of rod 13, so that whenever the hand-piece is slid rearwardly, displacing the breech-bolt from its operating position, the rod 13 displaces the lever 46 inwardly, causing the arm 52 carried by said lever to pass beneath the upper extremity of lever 34 preventing the same from being lowered and thus making it impossible to pull the trigger. Thus the trigger may be operated only when the rod 13 has moved sufficiently forward to free the lever 46 from its rear extremity,—this is to say, when the breech-bolt is safety locked in the proper position.

I am aware that changes may be made in the form and proportion of parts and details of the device herein described as a preferable embodiment of my invention, without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve the right to make such changes and alterations in said device as fairly come within its scope.

What I claim is:

1. In a magazine fire-arm, the combination with the rotary bolt 7, provided with the locking lugs 6, and with the helical groove 11, terminating in the recess 18, of the bolt housing 10, provided with the lateral grooves 9, and the recesses 5, having inclined approaches 19 communicating with said groove, the sliding hand-piece 14, the connecting rod 13 and the lug 12 upon the latter operating in said helical groove.

2. In a magazine fire-arm, the combination with the breech bolt 7, and the bolt housing 10, of the trigger 33, the lever 34 operated by said trigger, the upper extremity of which is adapted to obstruct the forward progress of the firing pin, the hinged door 41 in the bolt housing adapted to prevent forward movement of the breech-bolt when lowered, the pivotally mounted lever 43, having a projection adapted to enter the recess in the breech-bolt to prevent rearward motion of the same, and the metal strip 45 adapted to unlock lever 43 to permit the breech-bolt to be rearwardly moved.

3. In a magazine fire-arm, the combination with a breech bolt, having a helical groove partially encircling its outer surface, said groove terminating at its rear extremity in a transverse recess, of locking lugs on either side of the forward portion of the bolt, a firing pin within said bolt, a head rigid upon the rear extremity of the pin exterior to the bolt, a lug projecting from said head, a bolt housing provided with lateral longitudinal grooves to guide the locking lugs, and with a groove receiving the lug on said head, a pivoted lever one of whose extremities is adapted to block the passage of the lug on the head of the firing pin, when the bolt is in its operating position, a spring normally holding said extremity of the lever raised, and a trigger adapted to raise the other end of said lever, thereby discharging the gun.

4. In a magazine fire-arm, the combination with a breech bolt having a helical groove in its outer surface, and provided with oppositely positioned locking lugs, of a spring pressed firing-pin within said bolt, having a square, forward portion, and projecting from the rear extremity of the bolt, a lug having rigid connection with the rear extremity of the pin, a housing in which said bolt is slidably mounted, having longitudinal grooves receiving separately the locking lugs and the lug rigid with the firing pin, an ejector in the forward portion of the bolt having a square central aperture, receiving the square forward portion of the firing pin, a centrally pivoted lever, one extremity of which blocks said lug upon the rear end of the firing pin, when the gun is ready to discharge, a spring normally preventing said extremity of the lever from being displaced, a trigger adapted to raise the lower extremity of the lever, to discharge the gun, a sliding hand-piece on the forward portion of the gun stock, and a rod attached to the sliding hand piece, having a lug upon its rear extremity projecting into said helical groove of the breech bolt.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH REBMAN.

Witnesses:
JOHN S. MURRAY,
JESSIE KIRK.