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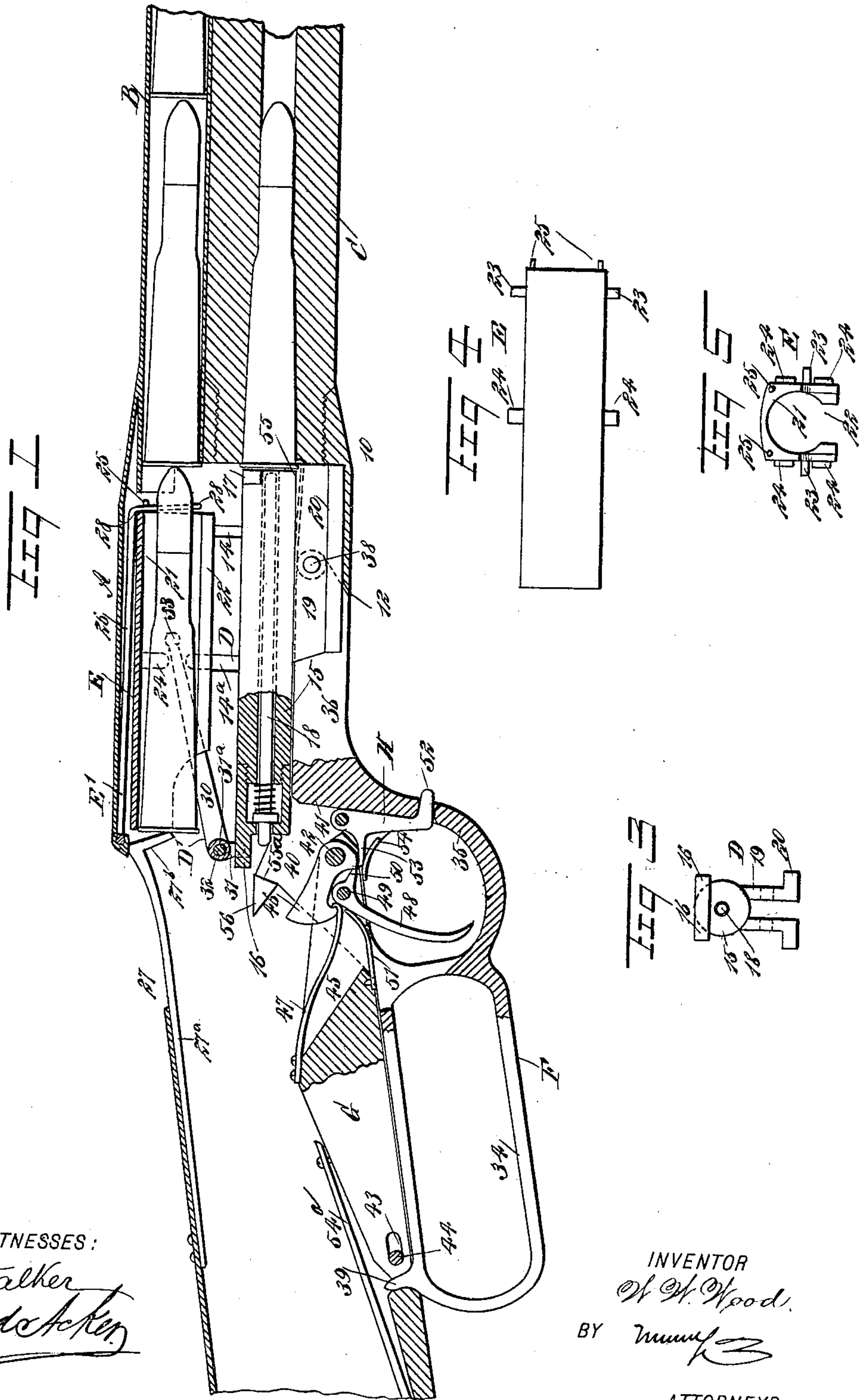
Patented Feb. 28, 1899.

W. W. WOOD.
MAGAZINE FIREARM.

(Application filed June 30, 1898.)

(No Model.)

2 Sheets—Sheet 1.



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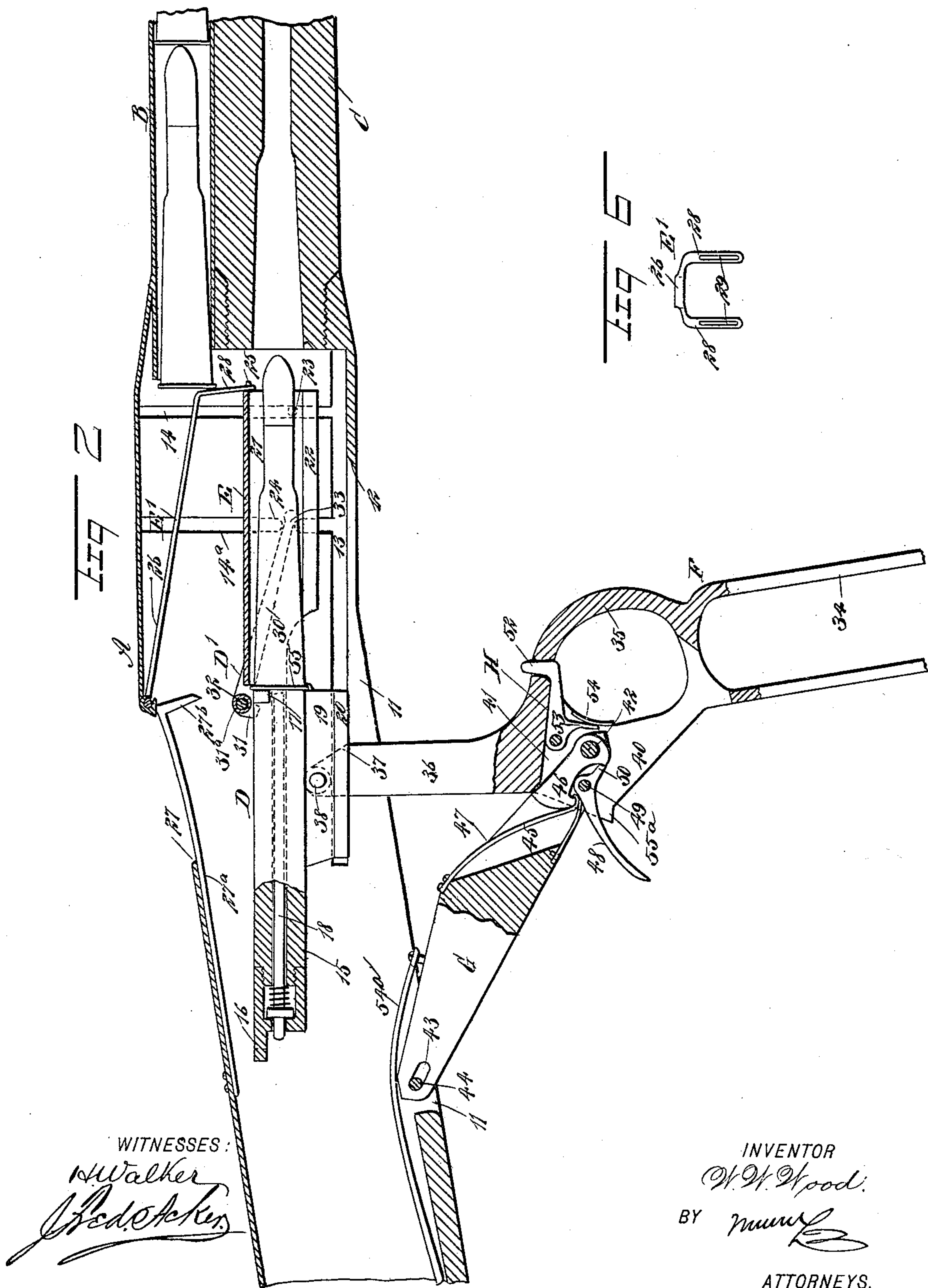
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UNITED STATES PATENT OFFICE.

WALTER W. WOOD, OF WASHINGTON, DISTRICT OF COLUMBIA.

MAGAZINE-FIREARM.

SPECIFICATION forming part of Letters Patent No. 620,524, dated February 28, 1899.

Application filed June 30, 1898. Serial No. 684,820. (No model.)

To all whom it may concern:

Be it known that I, WALTER W. WOOD, of the city of Washington, in the District of Columbia, have invented a new and Improved Repeating Rifle, of which the following is a full, clear, and exact description.

My invention relates to firearms, especially repeating rifles adapted for hunting purposes.

The object of the invention is to provide a hammerless firearm, one having no projections upon the frame and wherein the frame will be entirely closed and solid at the upper surface, thus preventing the entrance of rain, snow, dirt, or any objectionable matter.

Another object of the invention is to provide a firearm of such construction that the spent shell is ejected below or downward and dropped near the feet of the marksman instead of being thrown in the air in front of him.

A further object of the invention is to provide a simple and durable action and to so construct the entire lock and repeating mechanism that they will comprise but few parts and will be durable, economic, and very compact, occupying less space than the corresponding parts of the repeating rifles in general use.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal vertical section through the frame and improved lock mechanism of a gun and through a portion of the magazine and barrel, the hammer being in position for firing. Fig. 2 is a view similar to Fig. 1, the finger-lever being shown as carried downward and the carrier-block as in front of the barrel, showing a cartridge in the carrier-block in position to be carried into the barrel. Fig. 3 is an end view of the breech-bolt. Fig. 4 is a plan view of the carrier-block. Fig. 5 is an end view of the carrier-block, and Fig. 6 is an end view of the magazine-stop.

A represents the frame of the gun, into the forward end of which frame a magazine B and a barrel C are introduced, the magazine being

by preference on top of the barrel, and the magazine extends within the frame farther than the barrel; but the lower portion of the magazine at its rear end is cut away. In the bottom of the frame a longitudinal slot or opening 11 is made, commencing a short distance from the front and stopping at a point about where the rear stock connects with the frame. The forward wall 12 of the slot 11 is beveled upwardly and forwardly, as shown in Figs. 1 and 2. In the inner face of each side of the frame, near the bottom of said frame, a horizontal groove 13 is made, the two grooves 13 being in transverse alinement, and likewise in the inner face of each side of the frame two vertical grooves 14 and 14^a are made, the grooves at each side being the same distance apart, and the vertical grooves 14 intersect the horizontal grooves 13, as is best shown in Fig. 2.

The breech-bolt D consists of a body 15, usually circular in cross-section, provided at its rear end with shoulders 16, extending beyond its sides, while similar shoulders 17 are provided for the body of the breech-bolt at its forward end. A firing-pin 18 of any improved construction is carried by the breech-bolt, the rear end of the firing-pin extending beyond the rear end of the body of the bolt, and at the forward portion of the body of the breech-bolt at each side a downwardly-extending plate 19 is formed, each plate being provided with a horizontal flange 20, the flanges 20 of the plates being adapted to travel in the horizontal grooves 13 of the frame. The breech-bolt is used in connection with a carrier-block E, the carrier-block being provided to receive the cartridges from the magazine and conduct said cartridges to a position where they may be forced into the barrel. The carrier-block E may be of any desired cross-sectional shape; but it is provided with a segmental chamber 21, extending through from end to end, which segmental chamber meets a longitudinal slot or opening 22, made in the bottom of the block. The chamber 21 and opening 22 are of such cross-sectional dimensions that the body of the breech-bolt and a portion of its supporting sides 19 may pass freely through the carrier-block and the carrier-block be moved from off the breech-bolt.

The carrier-block is provided at each side near one end with pins 23, these pins being arranged to enter the vertical grooves 14 in the frame. The carrier-block is further provided upon each side at its center with two vertically-aligning yet spaced lugs 24, and at the forward upper end portion of the carrier-block two horizontal pins 25 are located. The spaced lugs 24 are sufficiently long to enter grooves 14^a, parallel with the grooves 14. In connection with the carrier-block a magazine-stop E' is used. This magazine-stop consists of a body bar or rod 26, made of spring metal, and a fork 28, which is secured to the forward end of the body-rod, the fork being provided, as shown in Fig. 6, with slots 29 in its members. The body-rod 26 of the magazine-stop is hinged at its rear end in suitable bearings formed in the frame, located, preferably, adjacent to the opening 27 in the top of the frame, through which opening the cartridges are to be introduced to be loaded into the magazine; but this opening 27 is normally closed by a loading-gate 27^a of a spring material, secured at its rear end to the frame and provided at its forward end with a downwardly-extending lug 27^b. The lug is opposite the rear end of the carrier-block when the carrier-block is in its upper position and serves to prevent the cartridge forced into the carrier-block from the magazine from passing beyond the rear end of the block, the cartridges in the magazine being fed by the usual spring or like device.

One of the pins 25 in the forward end of the carrier-block is made to pass through one of the slots 29 in the members of the fork 28 of the magazine-stop. Thus when the carrier-block is forced downward to bring a cartridge in position to enter the barrel, as shown in Fig. 2, the fork of the magazine-stop will be brought in engagement with the rearmost cartridge in the magazine, preventing the cartridge from entering the frame; but when the carrier-block is in its upper position the fork of the magazine-stop offers no resistance to the cartridge in its passage to the block.

In connection with the breech-bolt and carrier-block two levers D' are employed. Each of these levers consists of a long arm 30 and a short arm or member 31, the arms being connected by a sleeve 31^a, and both levers are pivoted upon a rod 32, passed through the connecting-sleeve 31^a and into the side pieces of the frame. One of the carrier-block levers is located adjacent to each side of the frame, and the longer members are made to pass through the spaces between the lugs 24 on the sides of the carrier-block, as shown in Figs. 1 and 2, and preferably the forward ends of the carrier-block levers are made to terminate in a knob 33 or are otherwise enlarged. The shorter members 31 of the levers are adapted to be engaged by the forward and rearward shoulders 17 and 16 of the breech-bolt. When the breech-bolt is moved rearward, it will travel rearward until the forward

shoulders 17 on the said bolt engage with the shorter members of the carrier-block levers, whereupon the longer members of the levers will be forced downward and will carry the carrier-block to its lower position, (shown in Fig. 2,) the block having been held in its upper position by frictional engagement of the cartridge contained in the block with the lug of the loading-gate and the rearmost cartridge in the magazine after the carrier-block has been brought to its lower position, while the breech-bolt is carried forward into the carrier-block, forcing the cartridge from the carrier-block into the barrel. When the breech-bolt has properly placed the cartridge in the barrel, the rear shoulders 16 of the bolt will engage with the shorter members of the carrier-block levers and will cause the long members to move upward, taking with them the carrier-block, which slips from over the breech-bolt, and as soon as the carrier-block is in its upper position the rearmost cartridge in the magazine will immediately be forced into the said block.

The breech-bolt is operated through the medium of a finger-lever F, which lever, as shown in Figs. 1 and 2, consists of a loop 34, a trigger-guard 35 adjacent to the loop, and an arm 36, which is at right angles to the trigger-guard, extending forwardly therefrom and over the upper portion of the said guard. The forward end of the arm 36 of the finger-lever is beveled, so that when the finger-lever is closed on the frame the beveled portion of the arm 36 will engage with the beveled wall 12 of the slot 11 in the bottom of the frame. The arm 36 of the finger-lever is passed up through the slot 11 in the bottom of the frame, between the plates 19 of the breech-bolt, being pivotally connected with said plates by the pivot-pin 38, as shown in Figs. 1 and 2.

At the rear upper portion of the loop 34 of the finger-lever a projection 39 is formed, adapted for engagement with the rear wall of the slot 11 in the frame, as shown in Fig. 1. That portion of the arm 36 which extends over the trigger-guard is provided with a vertical slot 40, extending through the rear and top edge of the said portion of the arm, and the said slot or opening extends through the upper portion of the trigger-guard and preferably likewise through a portion of the partition separating the loop 34 from the trigger-guard 35. The forward wall 41 of the slot or opening 40 in the arm 36 is preferably made more or less straight. The forward end of a link G is made to enter the slot or opening 40 in the finger-lever and is pivoted in the said slot by a pin 42, passed, preferably, through the arm 36 slightly above the trigger-guard. At the rear end of the link G a longitudinal slot 43 is produced, and the rear portion of the link is pivoted by a pin 44, passed through the frame and through the slot 43. When the finger-lever F is carried to an engagement with the frame, the projection 39 at the rear of the said lever will enter the space between

the rear end of the slot 11 and the rear end of the link G, engaging with both.

A longitudinal opening or a slot 45 is made in the forward end of the link G. The hammer 46 is located within this slot and is loosely mounted on the pivot-pin 42, the head of the hammer being engaged by the mainspring 47, secured to the link G at one end and engaging at its opposite end with the rear portion of the hammer, the spring having a tendency to force the hammer against the rear end of the firing-pin. The trigger 48 is pivoted by a pivot-pin 49 below the hammer, the pivot-pin being carried by the link G, and the trigger is provided with a sear 50, arranged for locking engagement with the hammer, as shown in Figs. 1 and 2.

A safety-catch H is employed, which is adapted to be worked mainly by hand. This safety-catch consists of a body 51, located in the opening 40 of the arm 36 of the finger-lever, and the said body is provided with feet 52, arranged to extend forwardly at each side of the trigger-guard. The safety-catch further consists, preferably, of a thin spring-arm 53, which extends rearwardly from its upper portion, the said arm resting upon guides 54, formed at the lower forward portion of the opening 40. When the safety-catch is in the position shown in Fig. 1, the hammer is free to be fired; but when the safety-catch is forced inward and its locking-arm 53 is brought between the guides 54 and the sear 50 of the trigger the trigger cannot be moved, and consequently the gun cannot be accidentally discharged. A spring 54^a is attached to the upper rear portion of the link G and to any point within the rear portion of the frame or within the stock, the spring 54^a exerting upward tension on the link, and it serves to assist in restoring the finger-lever to its upper position after it has been carried to its lower position, and the spring 54^a likewise serves to prevent the finger-lever from becoming accidentally moved.

When the finger-lever F is thrown down, the forward end of the link G engages the safety-catch and presses it forward, so that the arm is always ready to fire as soon as the finger-lever is closed and is not "safe" until the catch has been pressed back with the fingers. I desire it to be understood that the magazine-stop E' may be made in two pieces, pivotally connected where the fork-section 55 joins the body-section, in order to avoid strain upon the stop when the carrier E is thrown down.

It will be observed that the finger-lever is attached to the breech-bolt by a pin 38, to the link by a pin 42, which serves as a fulcrum for the finger-lever, and that the link is pivoted to the frame by a pin 44. These pivots are so arranged that when the gun is closed the central pivot 42 is slightly above the central line of the pivots 38 and 44. This arrangement of the pivots serves to lock the fin-

ger-lever in its closed position, and the recoil will only tend to lock the finger-lever the more firmly in place. This action is brought about by allowing the pivot-pin 44 play in the link, and this play is taken up when the gun is closed by the projection 39 entering the space between the rear end of the slot 11 and the rear end of the link.

In operation when the finger-lever is carried downward it will move upon its pivot 42 and cause the breech-bolt to be carried rearward, as shown in Fig. 2, and, as above stated, the forward shoulders 17 of the breech-bolt will then act upon the carrier-block to bring said carrier-block in position to deliver a cartridge to the barrel. As the finger-lever is dropped to its vertical position the wall 41 of the opening 40 in the said finger-lever will engage with the hammer and gradually force the hammer back until it is engaged by the sear of the trigger 48. The hammer is now in firing position, and as the finger-lever is restored to its normal position the breech-bolt is carried into and through the carrier-block, forcing the cartridge into the barrel, and when the cartridge has been placed in the barrel the rear shoulders of the breech-bolt will act to take the carrier-block upward to receive another cartridge, as has been heretofore described.

With reference to the finger-lever F, that portion which is above the trigger-guard terminates on each side of the slot in a shoulder 55^a, which when the lever is closed engages corresponding offsets 56, formed upon the inner sides of the frame, thus strengthening the locking device. The lower rear portion of the carrier E is cut away in order to prevent the carrier interfering with the arm 36 of the finger-lever when said lever is closed.

The extractor 55, which is attached to the breech-bolt, may be of any desired construction. In its operation when the breech-bolt is carried rearward the extractor will withdraw the empty shell from the barrel, and about the time the breech-bolt has reached its full rearward position the shell will be released from the extractor and will fall through the bottom opening in the frame.

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

1. In a firearm, the combination, with a frame, a breech-bolt having end movement in the frame, a carrier-block normally located above the breech-bolt, the carrier-block being provided with a cartridge-chamber and an open bottom, and an actuating device connecting the carrier-block with the frame, the said actuating device being operated upon by the forward and rearward movement of the breech-bolt, of a finger-lever adapted for engagement with the frame of the firearm and to be carried at an angle to the frame, a link connection between the frame and the finger-lever, a hammer, and a safety device carried

by the finger-lever, and means for cocking the hammer through the downward movement of the finger-lever, as set forth.

2. In a firearm, the combination, with a frame, a breech-bolt having end movement in the frame, a carrier-block normally located above the breech-bolt, the carrier-block being provided with a cartridge-chamber and an open bottom, and an actuating device connecting the carrier-block with the frame, the said actuating device being operated upon by the forward and rearward movement of the breech-bolt, of a finger-lever pivotally attached to the breech-bolt, the said lever being provided with a trigger-guard, a hammer pivoted in said lever, the lever being provided with a surface adapted to engage with the hammer and cock the same when said lever is dropped, a link pivotally attached to the finger-lever and to the frame, the link being provided with a spring for controlling the hammer, and a trigger carried by the said link, as and for the purpose specified.

3. The combination, with the frame of a firearm, and a breech-bolt mounted to slide therein, of a finger-lever connected with said bolt, said lever being provided with a trigger-guard and an opening above said trigger-guard, the forward wall of which opening is straight, a hammer pivoted in the opening of the finger-lever facing the straight wall thereof, a link also pivoted at one end in said opening of the finger-lever and at its opposite end to the frame, the said link having slight sliding movement at its pivotal connection with the frame, a spring carried by the link and engaging with the said hammer, a trigger likewise carried by the link, and a second spring carried by the frame and connected with said link, as and for the purpose specified.

4. A carrier-block arranged for vertical movement and having an opening extending from end to end, and a similar bottom opening, a breech-bolt arranged to pass through the body-opening of the carrier-block, said breech-bolt having end movement, the said breech-bolt being adapted to remove a cartridge from the carrier-block, vertical guides for the carrier-block formed in the inner side faces of the said frame, arms pivotally attached to the frame, the arms being provided with angular extensions at their pivot ends, said arms having likewise sliding connection with the sides of the carrier-block, the arms serving to raise and lower the carrier-block according as the breech-bolt is carried forward or rearward, trip devices carried by the breech-bolt at its ends, the said trip devices being adapted for engagement with the extensions of the arms controlling the move-

ment of the carrier-block, and a finger-lever arranged to impart movement to the said breech-bolt, as described.

5. In firearms, the combination, with a frame, a breech-bolt having longitudinal movement in the frame, and a lever for operating the breech-bolt, a carrier-block having guided movement in the frame and capable of movement to and from the breech-bolt, said carrier-block having connecting body and bottom openings of sufficient size to receive the breech-bolt and to admit of the carrier-block being readily withdrawn from the breech-bolt, and means, substantially as described, for raising and lowering the carrier-block by the movement of the breech-bolt, of a magazine-stop attached to the said frame and to the forward end of the carrier-block, the stop in one position of the carrier-block preventing a cartridge from passing into the frame, and in the second position of the carrier-block offering no obstruction to the passage of a cartridge, as described.

6. In a breech-loading firearm, the combination, with a frame, a breech-bolt having end movement in the frame, and a finger-lever arranged to operate the said bolt, the frame being provided with vertical guideways, of a carrier-block having a body-opening extending from end to end and a similar bottom opening, arms pivotally attached to the frame and having sliding connection with the sides of the carrier-block, and projections upon the end portions of the breech-bolt, arranged to raise and lower said arms, as described.

7. In a breech-loading firearm, the combination, with a frame, a breech-bolt having end movement in the frame, and a finger-lever arranged to operate the said breech-bolt, the frame being provided with vertical slideways, of a carrier-block having a body-opening extending from end to end and a similar and connecting bottom opening, arms pivotally attached to the frame, being provided with downwardly-projecting members at their pivot-points, the said arms being provided with sliding connection with the sides of the carrier-block, extensions from the carrier-block, adapted to enter the slideways in the said frame, and projections from the end portions of the breech-bolt, the said projections being adapted for engagement with the extensions from the pivot-point of the arms connected with the carrier-block, as and for the purpose specified.

WALTER W. WOOD.

Witnesses:

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