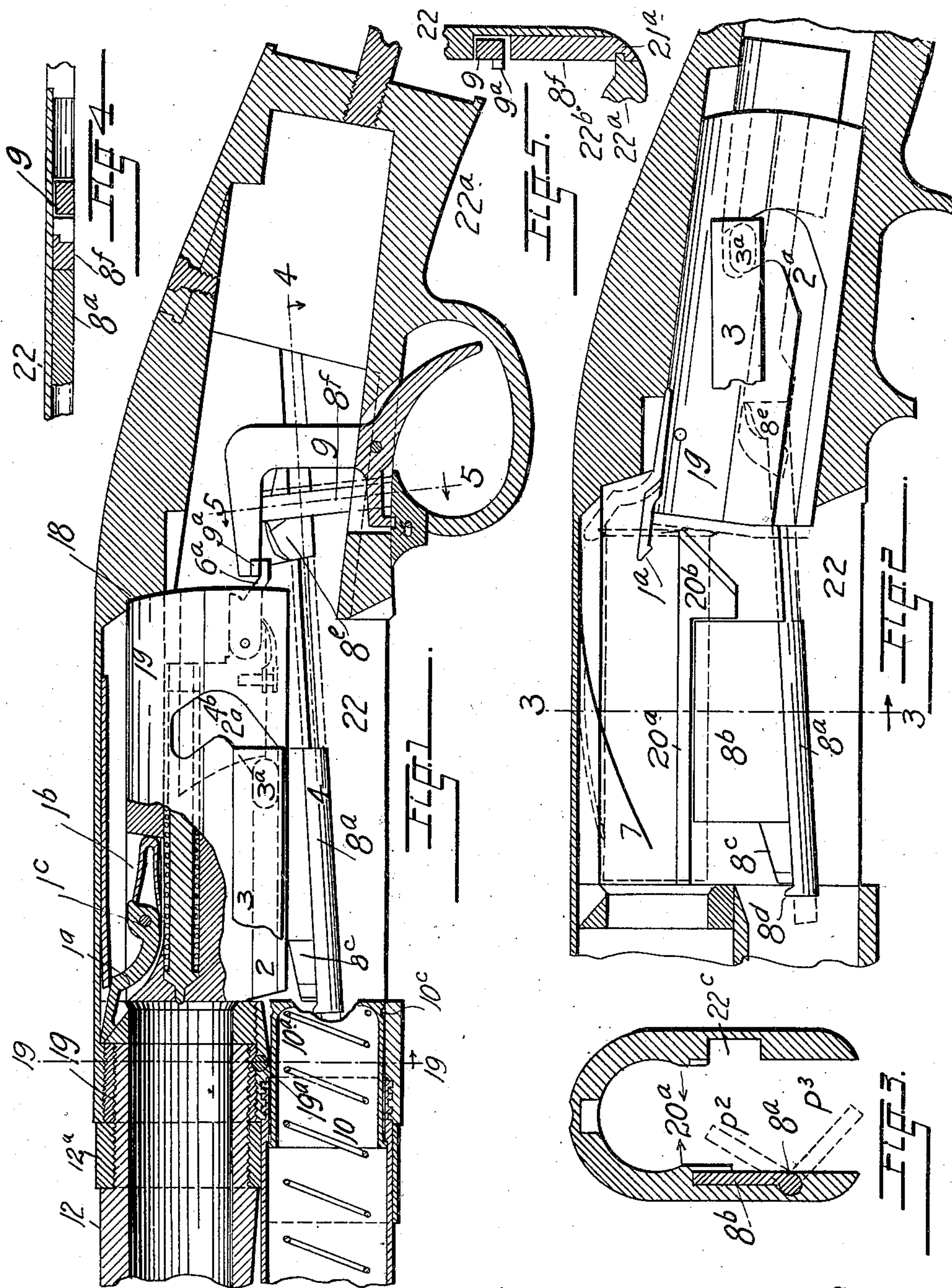


No. 789,932.

PATENTED MAY 16, 1905.

J. D. PEDERSON.  
MAGAZINE FIREARM.  
APPLICATION FILED FEB. 11, 1903.

2 SHEETS—SHEET 1.



Witnesses  
Dena Nelson.  
Mande Marshall.

Inventor  
J. D. Pederson

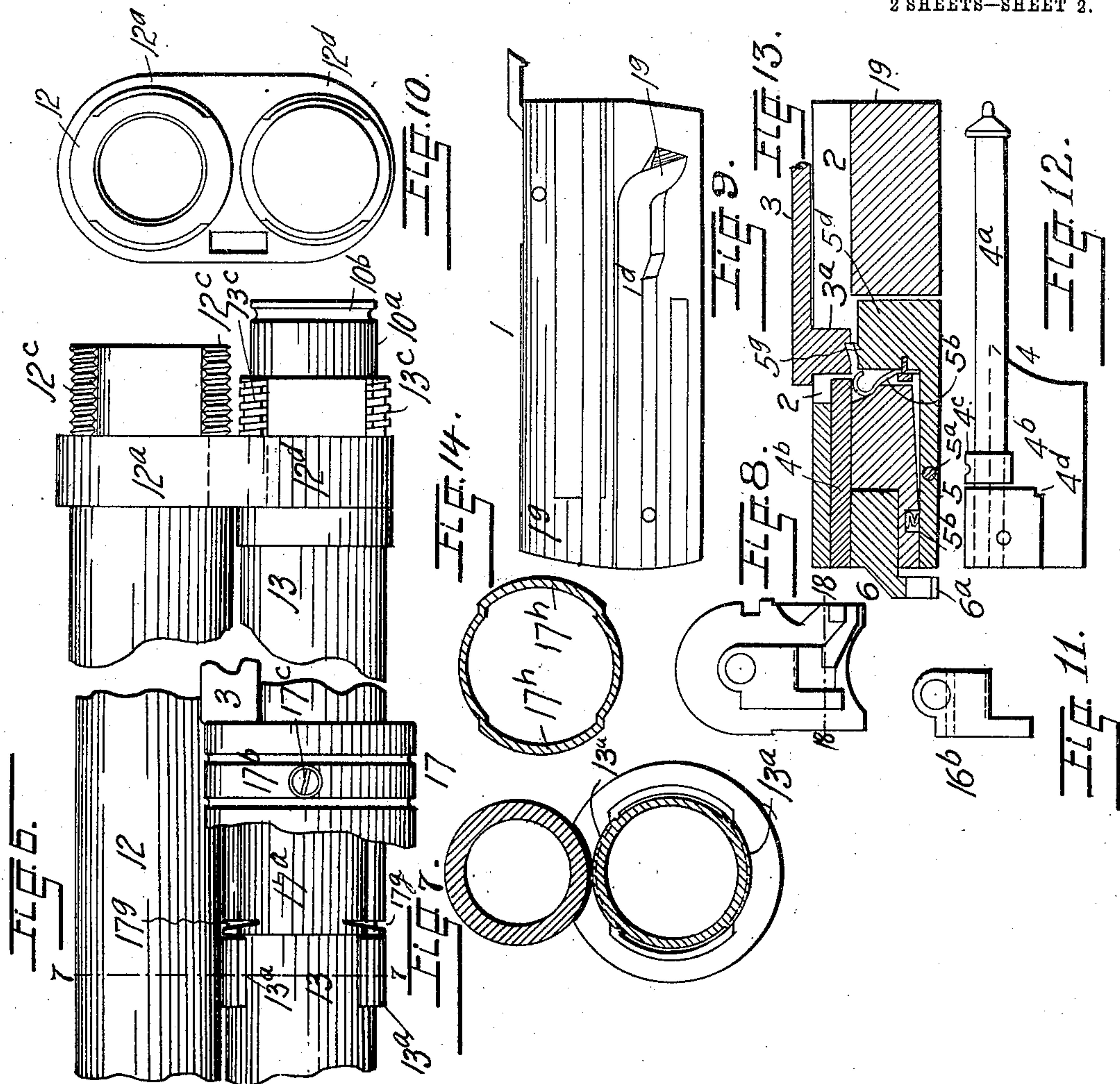
By *[Signature]*  
Attorney

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Dena Nelson.  
Maude Marshall

Inventor  
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By *[Signature]*  
Attorney



# UNITED STATES PATENT OFFICE.

JOHN D. PEDERSON, OF DENVER, COLORADO, ASSIGNOR TO REMINGTON ARMS COMPANY, OF ILION, NEW YORK.

## MAGAZINE-FIREARM.

SPECIFICATION forming part of Letters Patent No. 789,932, dated May 16, 1905.

Application filed February 11, 1903. Serial No. 142,909.

*To all whom it may concern:*

Be it known that I, JOHN D. PEDERSON, a citizen of the United States of America, residing in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Magazine-Firearms; and I do 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 characters of reference marked thereon, which form a part of this specification.

My invention relates to magazine-firearms and may be considered an improvement on the construction set forth in my United States Letters Patent No. 719,955, dated February 3, 1903.

These improvements relate more especially to the devices for extracting and ejecting the shells and the construction of the receiver, whereby its upper portion is constructed to cause the shell to move rearwardly in a direct line while the breech-block is moving rearwardly in an inclined direction, thus placing the spring of the extractor-hook under tension until the rear extremity of the contracted portion is reached, when the recoil of the spring forces the shell suddenly downward and out of the receiver through an opening in the bottom thereof. This contracted portion of the receiver is too small to allow the rim of the shell to pass downwardly, but does not resist the downward movement of its body portion forward of the rim.

Other improvements relate to the locking of the carrier in place, the connection of the action-bar with the breech-block, whereby it acts directly on the cocking-head of the firing-pin, the recoil-lock, and the follower of the magazine-tube, the said follower being provided with a circumferential groove at its rear extremity in which the cartridge-cut-off projection at the forward extremity of the carrier-spindle works when the mechanism is operated with the magazine-tube empty, and other details, all of which will be fully under-

stood by reference to the accompanying drawings in which is illustrated an embodiment thereof.

In the drawings, Figure 1 is a vertical longitudinal section taken through the rear part of the barrel or the cartridge-chamber, and the magazine-tube, the breech-block, and the devices carried thereby being shown partly in section. In this view the breech-block is at its forward limit of movement. Fig. 2 is a similar section showing the breech-block in the rearward position or in the position at the moment the shell is ejected. The barrel and magazine-tube are not shown in this view and the breech-block is in full side elevation. Fig. 3 is a cross-section taken through the receiver on the line 3 3, Fig. 2, the carrier being shown in place and in three positions, two of which are in dotted lines. Fig. 4 is a section taken on the line 4 4, Fig. 1. Fig. 5 is a section taken on the line 5 5, Fig. 1. Fig. 6 is a side elevation showing the barrel and magazine-tube connected. Fig. 7 is a cross-section taken through the barrel and the magazine-tube on the line 7 7, Fig. 6. Fig. 8 is a rear end elevation of the breech-block, showing the firing-pin, the sear, and the recoil-lock in place. Fig. 9 is a side elevation of the breech-block. Fig. 10 is a rear end elevation of the barrel and magazine-tube. Fig. 11 is a rear end elevation of the firing-pin. Fig. 12 is a side elevation of the same. Fig. 13 is a horizontal section taken through the breech-block on the line 13 13, Fig. 8. Fig. 14 is a cross-section taken through the tube 17<sup>a</sup> of the handle shown in detail.

The same reference characters indicate the same parts in all the views.

Let the numeral 1 designate the breech-block in its entirety; 12, the barrel which is connected with the receiver 2 by the interrupted screw-threads engaging corresponding threads of a bushing-sleeve 19, screwed into the receiver. The interrupted screw-threads of the barrel are designated 12<sup>c</sup>. The rear extremity of the magazine-tube 13 is provided with interrupted threads 13<sup>c</sup>, which cooperate with the corresponding threads of the receiver



to form the connection between the two parts. The barrel is provided with a yoke 12<sup>a</sup>, which is made fast thereto just forward of its rear extremity. This yoke is provided with a depending part 12<sup>d</sup>, open to receive the magazine-tube, which slides freely therein. Slidably mounted on the magazine-tube is a handle 17, composed of an outer wood part 17<sup>b</sup> and an inner short metal tube 17<sup>a</sup>. These two parts are connected by a screw 17<sup>c</sup>. Immediately forward of the tube 17<sup>a</sup> the magazine-tube 13 is reinforced a portion of the way around on two opposite sides, forming segmental lugs 13<sup>a</sup> to form stops to limit the forward movement of the handle when the parts are in their normal position. These stops abut against the forward extremity of the tube 17<sup>a</sup> when the handle is moved to its forward position in closing the gun or moving the breech-block forward to throw the cartridge into the chamber therefor at the base or rear extremity of the barrel. In order to cushion the parts or relieve the sudden impact, concussion, or jar incident to the engagement of the tube 17<sup>a</sup> with the stops 13<sup>a</sup> when the handle reaches its forward limit of movement, I form slots 17<sup>e</sup> in the tube on two sides adjacent the lugs 13<sup>a</sup> and slightly in the rear of the forward extremity of the said tube. These slots allow the metal in front of them to yield sufficiently for the purpose stated. Intermediate the slots 17<sup>e</sup> the tube 17<sup>a</sup> is interiorly recessed or grooved longitudinally to allow the handle to slide over the lugs 13<sup>a</sup> when the magazine-tube is given a fourth of a revolution, as hereinafter explained.

The action-bar, which is designated by the numeral 3 in the drawings, is rigidly connected at its forward extremity with the handle 17 and is operated by the reciprocation of the handle on the magazine-tube in the usual manner. The rearward extremity of the action-bar is provided with an interiorly-projecting lug 3<sup>a</sup>, which engages a groove 2, formed in one side of the breech-block. The body of the action-bar moves in an interior groove 22<sup>c</sup>, formed in one side of the receiver-wall and extending parallel, or nearly so, with the axis of the gun-barrel or cartridge-chamber. The rear portion 2<sup>a</sup> of the groove 2 is upwardly and rearwardly inclined from the straight portion of the groove, whereby as the lug 3<sup>a</sup> of the action-bar moves rearwardly from the normal position (indicated by the dotted lines in Fig. 1) the breech-block is thrown downwardly sufficiently to disengage its rear extremity from the recoil-shoulder 18, after which the continued rearward movement of the action-bar moves the breech-block rearwardly into the rear part of the receiver in a line inclined to the axis of the gun-barrel. The normal position of the lug 3<sup>a</sup> of the action-bar is close to the cocking-head 4<sup>b</sup> of the firing-pin 4, and during the travel of the lug 3<sup>a</sup> in the inclined slot 2<sup>a</sup> of the groove in the

breech-block the lug 3<sup>a</sup> acts on the part 4<sup>b</sup> to cock the firing-pin. Attention is called to the fact that the groove 2<sup>a</sup> after reaching a point about midway of the vertical extent of the breech-block is forwardly inclined. By the time the lug 3<sup>a</sup> has reached a point midway between the rearwardly and forwardly extending portions of the groove 2<sup>a</sup> the breech-block has been moved downwardly to release it from the recoil-shoulder 18, and as the rearward movement of the action-bar continues its lug 3<sup>a</sup> not only acts on the breech-block to move it rearwardly, but also continues to act on the part 4<sup>b</sup> of the firing-pin, whereby the cocking movement of the firing-pin is continued during the entire rearward movement of the breech-block, since the lug 3<sup>a</sup> of the action-bar does not reach the upper extremity of the slot 2<sup>a</sup> until the breech-block and action-bar have reached their rearward limit of travel. (See the position of this lug indicated by dotted lines in Fig. 2.) Attention is called to the fact that by reason of the gradual movement of the firing-pin to the cocked position—that is to say, during the entire rearward travel of the breech-block—less power is required to perform the cocking function than if this act were performed entirely while the breech-block were moving downwardly to release it from the recoil-shoulder 18. The firing-pin is held in the cocked position by a spring-held sear 6<sup>a</sup>, which engages a notch 4<sup>d</sup>, formed in the cocking-head of the firing-pin.

The recoil-lock consists of a lever-like device 5, pivotally mounted in one side of the breech-block on a vertical pin 5<sup>a</sup>. This device has an inward projection 5<sup>d</sup>, provided with a tooth 5<sup>e</sup>. This lock has a limited degree of horizontal movement on its pivot and is engaged from the inside by a coil-spring 5<sup>b</sup>, located in the rear of its pivot and having a tendency to throw the toothed part 5<sup>d</sup> inwardly, whereby the tooth 5<sup>e</sup> is held in the path of the lug 3<sup>a</sup> of the action-bar.

The forward extremity of the inward projection of the recoil-lock is provided with a hook-shaped auxiliary leaf-spring 5<sup>b</sup>, whose outer extremity is made fast to the lock and whose inner or hook-shaped extremity lies slightly in the path of the cocking-head of the firing-pin when the latter is in its forward or cartridge-exploding position, whereby the part 5<sup>d</sup> of the lock 5 is actuated to hold the tooth 5<sup>e</sup> out of the path of the lug 3<sup>a</sup> of the action-bar until the latter acts on the cocking-head and moves the firing-pin to the cocked position. In this event the auxiliary spring ceases to be operative and the spring 5<sup>b</sup> acts on the lock to return the tooth 5<sup>e</sup> to the path of the lug 3<sup>a</sup> of the action-bar. The forward side of this tooth is a straight offset, while its rear side is inclined. After cocking the firing-pin and moving the handle 17 forwardly on the magazine-tube until the yielding parts of the tube 17<sup>a</sup> are brought into con-



tact with the lugs 13<sup>a</sup> of the magazine-tube, placing the said spring part slightly under tension, a notch of the lug 3<sup>a</sup> is brought to engagement with the tooth 5<sup>b</sup> and the recoil action of the spring parts of the tube 17<sup>a</sup> acts with sufficient force on the action-bar to hold the recoil-lock in the locking position, whereby the action-bar is prevented from rearward movement. The recoil-lock is held in this position until the gun has been fired by releasing the firing-pin, when the recoil or relative rearward movement of the gun, except the action-bar and sliding handle, which are held in the normal position by the hand of the user, releases the recoil-lock from the action-bar, when the action of the firing-pin on the spring 5<sup>b</sup> actuates the recoil-lock to throw its tooth out of the path of the action-bar, as heretofore explained, whereby the action-bar is free to move rearwardly to extract the shell from the barrel through the instrumentality of the breech-block and the extractor-hook, as heretofore explained. Were it not for the influence of the recoil-lock on the action-bar it would be possible to move the latter rearwardly and extract the shell from the gun-barrel before the exploding act was complete, resulting in accident.

The carrier, which is designated as a whole by the numeral 8, is composed of a spindle 8<sup>a</sup>, extending longitudinally of the receiver and journaled in the wall thereof on the side opposite the groove 22<sup>c</sup>, in which the action-bar works, and a cartridge-carrying wing 8<sup>b</sup>, arranged to oscillate in the receiver-chamber. The rear extremity of the spindle 8<sup>a</sup> is provided with a part 8<sup>c</sup>, which forms oblique angles with the axis of the spindle and constitutes a portion of a screw-thread. The breech-block is provided with a groove 1<sup>d</sup>, which engages the part 8<sup>c</sup> of the spindle, and the forward extremity 1<sup>e</sup> of this groove is inclined and of such shape that just before the breech-block reaches its rearward limit of movement the walls of the groove 1<sup>e</sup> act on the part 8<sup>c</sup> to give the spindle a partial rotation and throw the carrying-wing 8<sup>b</sup> downwardly from its normal position in a recess in the wall of the receiver. This normal position of the wing 8<sup>b</sup> is shown by full lines in Fig. 3. The downward position is indicated by dotted lines in this figure, being the lower dotted-line position, and is designated P<sup>3</sup>. Then as the breech-block begins its forward movement the carrier-spindle is given another partial rotation in the receiver-chamber, whereby the wing 8<sup>b</sup> is raised to the dotted-line position P<sup>2</sup> in Fig. 3, and in such position it supports the cartridge in alinement with the barrel, and then as the forward movement of the breech-block is continued the wing is returned to its normal position and the cartridge thrust into the barrel. The construction and operation of this carrier are substantially the same as shown in my previous patent. Near the for-

ward extremity of the carrier-spindle a radial blade 8<sup>c</sup> is located, which when the wing 8<sup>b</sup> is in its normal position engages the rearmost cartridge in the magazine-tube and prevents it from moving into the receiver-chamber under the influence of the coil-spring 10 of the magazine-tube, which engages the cartridge-follower 10<sup>a</sup>. Forward of the radial blade 8<sup>c</sup> the carrier-spindle is provided with a projection 8<sup>d</sup>, which occupies a different plane from the radial blade 8<sup>c</sup>. This projection is concealed in a recess in the wall of the receiver when the carrier-wing is in its normal position; but when the carrier-wing is thrown downwardly the radial blade is thrown out of the path of the rearmost cartridge in the magazine-tube, allowing the said cartridge to enter the receiver-chamber and occupy a position resting on the carrier-wing. The projection 8<sup>d</sup> occupies a position in the rear of the next cartridge and keeps the latter in place until the stop-wing is raised to the path of said cartridge. The follower 10<sup>a</sup> of the magazine-tube is provided at its rear extremity with an exterior circumferential groove 10<sup>c</sup>, forming sufficient room or clearance for the movement of the projection 8<sup>d</sup> when it is desired to operate the gun with the magazine-tube empty. In this event the spring-actuated follower bears against the stop-wing 8<sup>c</sup> and prevents premature rotation of the carrier.

Pivotaly mounted in a recess formed in the upper forward portion of the breech-block on a pin 1<sup>c</sup> is an extractor and ejector hook 1<sup>a</sup>, whose forward extremity occupies a position forward of the rim of the cartridge when the breech-block is at its forward limit of movement. (See Fig. 1.) The rear extremity of this hook is engaged by a bent leaf-spring 1<sup>b</sup>, whose tendency is to throw the forward or hook extremity of the device downwardly.

The side walls of the receiver converged downwardly, whereby the space between said walls is contracted, as shown at 20<sup>a</sup>, these lines of contraction being parallel with the axis of the gun-barrel to prevent the downward movement of the rim of the shell until the latter has been completely withdrawn from the barrel. The distance between the lines 20<sup>a</sup> of extreme contraction is just equal to the diameter of the body of the shell forward of the rim, and therefore too narrow to allow the rim to pass. At points located at least the full length of a shell distant from the barrel these lines of contraction cease or widen to allow the rim of the shell to move downwardly. In the top of the receiver-chamber is located a leaf-spring 7, whose rear extremity is made fast and whose forward extremity bears on the shell during the operation of extraction and ejection. The normal tendency of the forward extremity of this spring is to move downward to the position shown by full lines in Fig. 2. This spring coöperates with the extractor-hook 1<sup>a</sup> in throw-



ing the shell downwardly in the receiver-chamber and in a position parallel or nearly parallel with the axis of the chamber, since the extractor-hook and the leaf-spring act simultaneously on opposite ends of the shell to force the latter downwardly. Leading downwardly and forwardly of the rear extremity of the lines of contraction 20<sup>a</sup> are two inclined shoulders 20<sup>b</sup>, whose forward extremities are at a distance from the cartridge-chamber or rear extremity of the gun-barrel slightly less than the length of a loaded cartridge, whereby as the cartridge is raised by the carrier the rim of the shell engages these shoulders, which guide the cartridge rearwardly until its rim reaches the rear extremities of the lines of contraction 20<sup>a</sup>, when the cartridge is in position to move forwardly into the cartridge-chamber.

Assuming that the gun has been fired and there is an empty shell in the cartridge-chamber, the operation is as follows: As the handle 17 and the action-bar are moved rearwardly the lug 3<sup>a</sup> of the latter moving in the inclined slot 2<sup>a</sup> draws the breech-block downwardly and releases its rear extremity from the recoil-shoulder 18. This lug 3<sup>a</sup> of the action-bar acts on the cocking-head of the firing-pin to cock the latter simultaneously with the downward movement of the rear extremity of the breech-block. Then as the rearward movement of the action-bar continues the breech-block travels rearwardly in a line inclined to the axis of the gun-barrel and receiver-chamber while the shell is drawn rearwardly by the extractor-hook in a line parallel with the axis of the gun-barrel and receiver-chamber, the forward extremity of the extractor being relatively raised and its rear extremity thrown downwardly, whereby the spring 1<sup>b</sup> is placed under tension which increases until the rim of the shell reaches the rear extremity of the lines of contraction 20<sup>a</sup>, when the recoil action of the springs 1<sup>b</sup> and 7 throws the shell forcibly downward and out of the receiver-chamber, which is open at the bottom for the purpose. The firing-pin is held in the cocked position by the sear 6<sup>a</sup>. When the breech-block is at its rearward limit of movement, (see Fig. 2,) the lug 3<sup>a</sup> of the action-bar occupies the upper extremity of the slot 2<sup>a</sup> of the breech-block, and as the handle and action-bar are moved forwardly the breech-block is given a corresponding movement. During the rearward movement of the breech-block the latter has acted on the part 8<sup>e</sup> of the carrier-spindle to impart a partial rotation to the latter and throw the wing 8<sup>b</sup> downwardly to the position P<sup>3</sup>. (See Fig. 3.) A cartridge then moves out of the magazine-tube into the receiver-chamber and takes a position on the carrier-wing. Then as the breech-block, carried by the action-bar, moves forwardly the breech-block acts on the part 8<sup>e</sup> of the carrier to partially rotate the latter in the reverse direction, whereby the carrier-

wing is raised to the position P<sup>2</sup> in Fig. 3 and the cartridge carried into the upper part of the receiver in line with the cartridge-chamber of the gun-barrel. Then as the forward movement of the breech-block is continued the carrier-wing is returned to its normal position, as indicated by full lines in Fig. 3, and the cartridge carried into its chamber as the breech-block reaches its forward limit of movement, as shown in Fig. 1. The sear is then in position to be engaged by the part 9<sup>a</sup> of the trigger 9, and as the latter is pulled the firing-pin is released and moves to the firing position. (See Fig. 1.)

The carrier-spindle is prevented from moving rearwardly by a stop-key 8<sup>f</sup>, which is pushed upwardly from below into a groove formed in one side of the wall of the receiver at right angles to the axis of the spindle. This stop-key is grooved, as shown at 21, to receive a tongue 22<sup>b</sup>, formed on the stock or breech 22<sup>a</sup> when the parts are assembled, whereby the key is held securely in place.

By reason of the forward inclination of the upper part of the slot 2<sup>a</sup> the action-bar does not have to travel as far rearwardly in order to throw the breech-block to its rearward limit of movement as would be the case if the slot were otherwise shaped.

Having thus described my invention, what I claim is—

1. In a gun, a receiver having an opening at the bottom for the escape of the shell, the forward part of the receiver-chamber having its axis in line with the axis of the gun-barrel while the rear part of the chamber has its axis inclined to the axis of the gun-barrel, and whose opposite side walls converge downwardly whereby the space between the said walls is contracted to prevent the rim of the shell from moving downwardly as it is withdrawn from the cartridge-chamber, the space between the lines of extreme contraction being sufficient to allow the body of the shell to pass, the contraction of the side walls terminating a shell's length from the barrel to allow the rim of the shell to move downwardly, a spring connected with the top wall of the receiver-chamber and acting to throw the shell downwardly as soon as it has been withdrawn from the cartridge-chamber, a breech-block provided with a spring-held extractor-hook, and means for lowering the breech-block and causing it to travel rearwardly into the inclined portion of the receiver-chamber, the spring of the extractor-hook having been placed under tension by the downward movement of the breech-block, and cooperating with the spring connected with the top wall of the receiver, to throw the shell downwardly as soon as the latter has been withdrawn from the barrel.

2. In a gun, the combination with a barrel, of a receiver, the forward part of whose chamber has its axis in line with the axis of the gun-



barrel while the rear part of its chamber has its axis inclined to the axis of the gun-barrel, the forward part of the receiver-chamber having an opening in the bottom and whose opposite side walls converge downwardly whereby the space between the said walls is contracted to prevent the rim of the shell from moving downwardly until the latter has traveled rearwardly a predetermined distance in a line parallel with the axis of the front part of the receiver-chamber, a breech-block provided with a spring-held extractor-hook, and means for lowering the breech-block and causing it to travel rearwardly into the inclined portion of the receiver-chamber, the contraction of the side walls terminating a shell's distance from the gun-barrel to allow the rim of the shell to move downwardly after it has been extracted from the barrel, the spring of the extractor-hook having been placed under tension by the downward movement of the breech-block, and the recoil of the spring acting to throw the shell downwardly as soon as the latter has been withdrawn from the barrel.

3. The combination with a cartridge-chamber, of a receiver whose chamber is provided with a rear portion inclined to the axis of the gun-barrel, the forward part of the receiver-chamber having its axis in line with the axis of the gun-barrel and having an opening in its bottom for the escape of the shell and whose side walls converge downwardly whereby the space between them is contracted to prevent the rim of the shell from moving downwardly, causing the shell during extraction to travel rearwardly in direct alignment with the cartridge-chamber, the receiver having an enlarged space a shell's length from the gun-barrel to allow the rim to move downwardly after the shell has been extracted, a breech-block, a pivoted spring-held extractor-hook carried by the breech-block, and an action-bar connected with the breech-block to cause the latter to move rearwardly into the inclined portion of the receiver-chamber.

4. The combination with a cartridge-chamber, of a receiver whose chamber is provided with a rear portion inclined to the axis of the gun-barrel, the forward part of the receiver-chamber having its axis in line with the axis of the gun-barrel and having an opening in its bottom for the escape of a shell, and whose opposite side walls converge downwardly whereby the space between them is contracted to a less diameter than the rim of the shell, causing the shell to move rearwardly in a direct line as it is withdrawn from the cartridge-chamber, a breech-block, an extractor-hook pivotally mounted thereon, a spring engaging said hook in the rear of the pivot, and an action-bar connected with the breech-block to cause the latter to travel rearwardly into the inclined portion of the receiver-chamber whereby as the extractor-hook engaging the rim of the shell, moves downwardly with the

breech-block its spring is placed under tension whereby the extractor-hook acts to throw the shell downwardly.

5. In a gun, the combination with a cartridge-chamber, of a receiver having a bottom opening for the escape of the shell and whose opposite side walls converge downwardly whereby the space between its opposite walls is contracted to prevent the rim of the shell from moving downwardly until it reaches a predetermined distance from the cartridge-chamber, where the wall convergence terminates, allowing the rim to move downwardly, the walls of the receiver being provided with shoulders extending downwardly and forwardly from the rear extremity of the converging walls, and a carrier mounted in the receiver and which raises the cartridges to cause their coaction with the said shoulders, whereby the flanges of the cartridges are forced rearwardly past said shoulders.

6. The combination with a cartridge-chamber, of a receiver having an opening in its bottom for the escape of the shell, a breech-block having a recess in its forward upper portion, an extractor-hook located in said recess and pivotally mounted, and a spring acting on the extractor-hook in the rear of its pivot, the opposite side walls of the receiver converging downwardly, to cause the shell to move rearwardly in a direct line until it is released from the cartridge-chamber, the receiver having an enlargement in the rear of the converging side walls to allow the shell to move downwardly, and means for lowering the breech-block and causing it to travel rearwardly in a line inclined to the axis of the receiver-chamber during the extraction of the shell, whereby the rear extremity of the extractor-hook is lowered while its forward extremity travels rearwardly in a direct line, thus placing the spring under tension and giving the extractor-hook a tendency to force the shell suddenly downwardly as soon as the forward extremity of the shell is released from the cartridge-chamber.

7. The combination with a cartridge-chamber, of a receiver having a chamber whose rear portion is inclined to the axis of the gun-barrel and whose forward portion has its axis in line with the axis of the gun-barrel, said forward portion of said chamber having an opening in its bottom for the escape of the shell and also having downwardly-converging side walls whereby the space between the said walls is contracted to cause the rim of the shell to move rearwardly in a direct line until its forward extremity is released from the cartridge-chamber, the receiver being enlarged in the rear of the converging side walls to allow the shell to move downwardly, a breech-block, an extractor-hook pivotally mounted on the breech-block, a spring engaging the said hook at the rear of the pivot, an action-



bar connected with the breech-block to cause the latter to travel rearwardly into the inclined portion of the receiver-chamber, and a spring mounted in the upper part of the forward portion of the receiver-chamber and adapted to press downwardly on the shell as the latter is withdrawn from the cartridge-chamber.

8. The combination with a receiver, of a breech-block located therein and provided with an inclined slot, a firing-pin located in the breech-block and having its cocking-head located adjacent said slot, and an action-bar moving in a groove formed in the wall of the receiver in a line parallel or nearly so with the axis of the gun-barrel, the action-bar having a lug which engages the slot of the breech-block and acts on the cocking-head to cock the firing-pin as the breech-block is actuated.

9. The combination with a receiver, a breech-block and an action-bar traveling in a slot of the breech-block, of a spring-actuated recoil-lock pivotally mounted in the breech-block and having a part normally protruding into the path of the lug of the action-bar, and an auxiliary spring projecting into the path

of the cocking-head of the firing-pin and acted on by the latter when in its forward position, to hold the said lock out of the path of the lug of the action-bar.

10. The combination with a receiver, an action-bar having a lug, and a breech-block having a slot in which the lug of the action-bar moves, of a recoil-lock pivotally mounted in the breech-block, a spring engaging the lock on one side of its pivot and having a tendency to hold a tooth formed on the lock, in the path of the lug of the action-bar as the latter approaches the cocking-head of the firing-pin, the lug of the action-bar having a notch adapted to engage the tooth of the lock in interlocking relation, and an auxiliary spring mounted on the side of its pivot opposite the actuating-spring, and acted on by the cocking-head to hold the tooth out of the path of the lug of the action-bar.

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

JOHN D. PEDERSON.

Witnesses:

DENA NELSON,

OTTO E. HODDICK.