

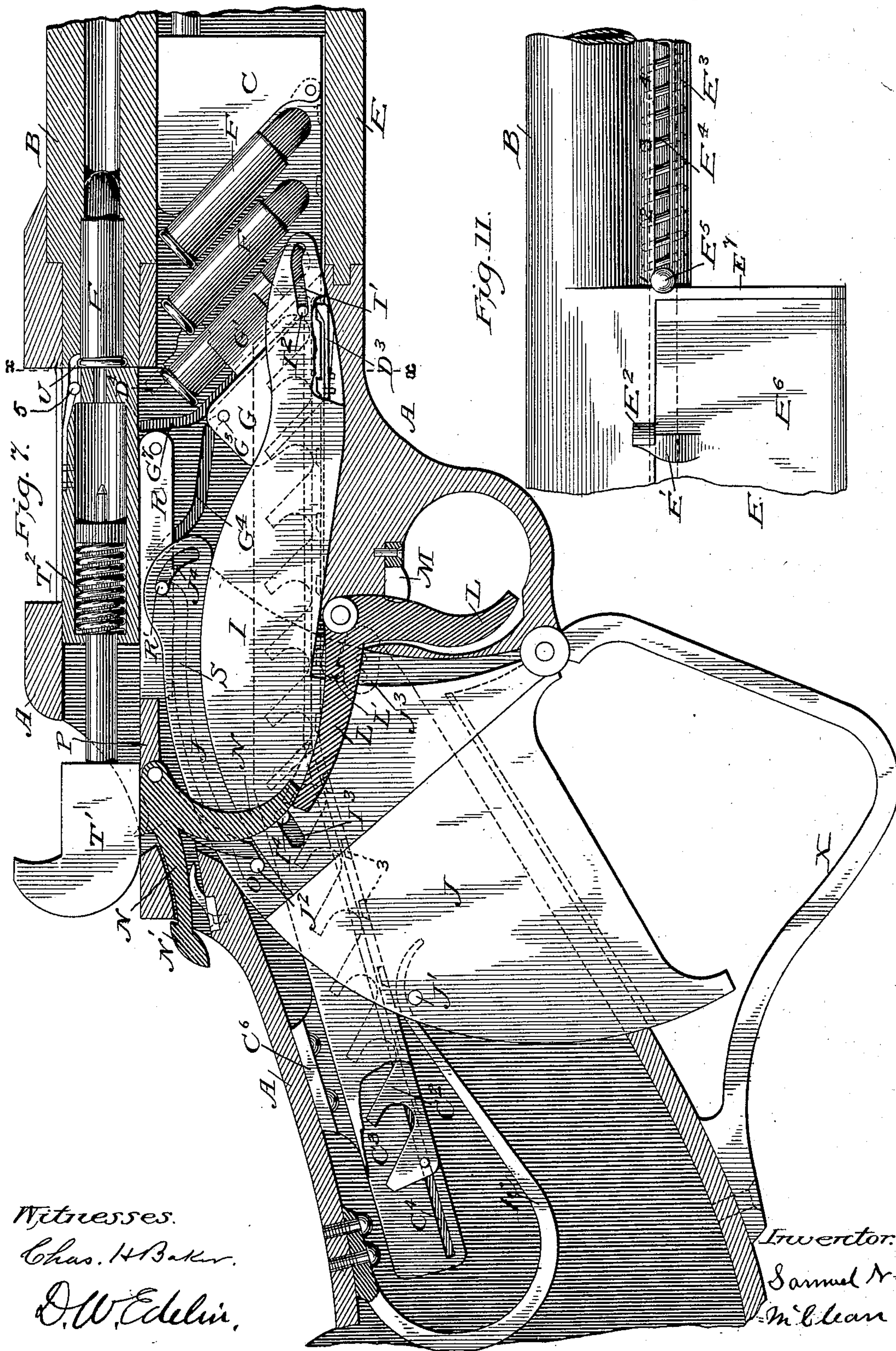
(No Model.)

3 Sheets—Sheet 2.

S. N. McCLEAN.
MAGAZINE BOLT GUN.

No. 601,839.

Patented Apr. 5, 1898.



Witnesses.

Chas. H. Baker.

D. W. Edlin.

Inventor.

Samuel N.
McClellan

(No Model.)

3 Sheets—Sheet 3.

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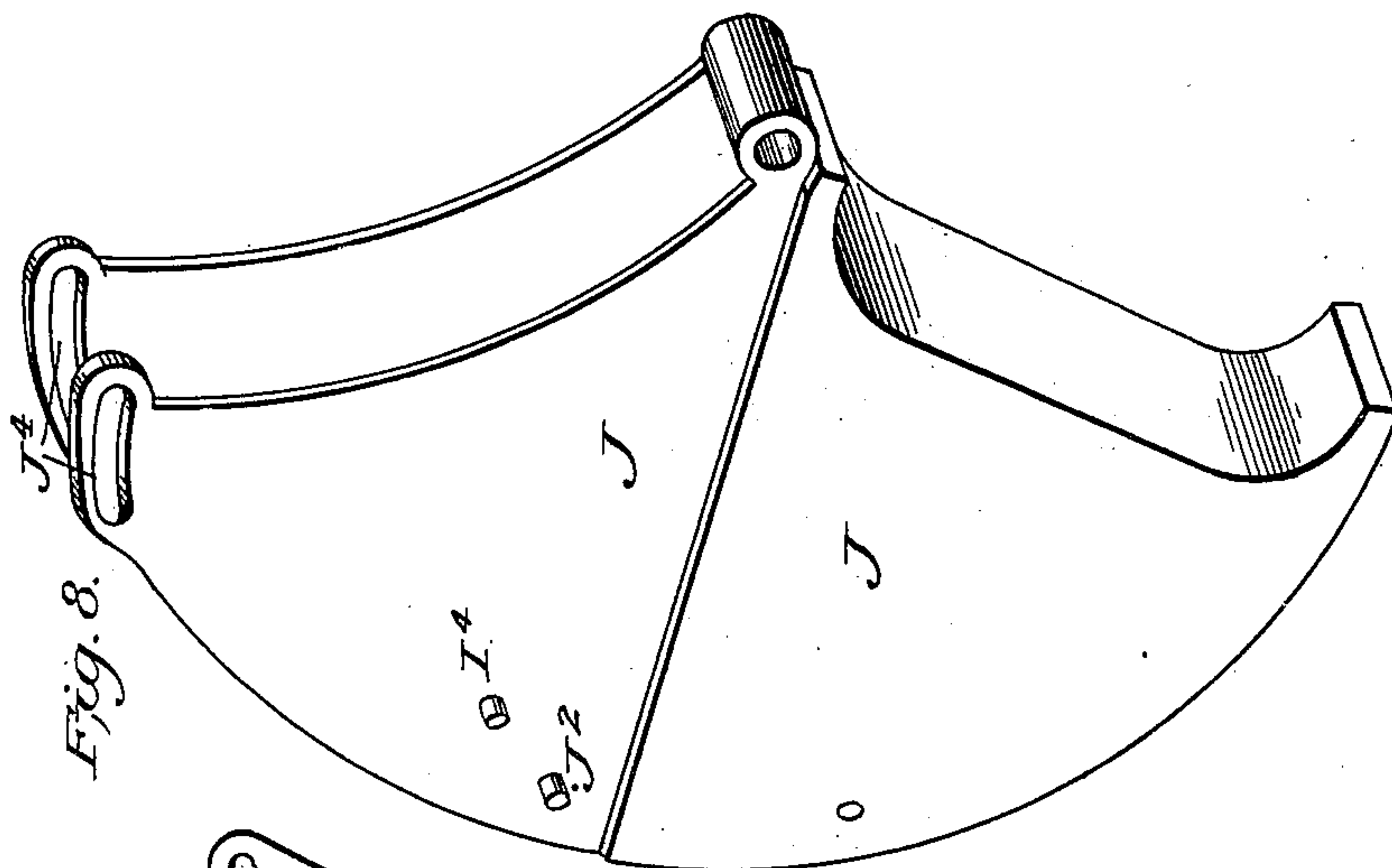


Fig. 8.

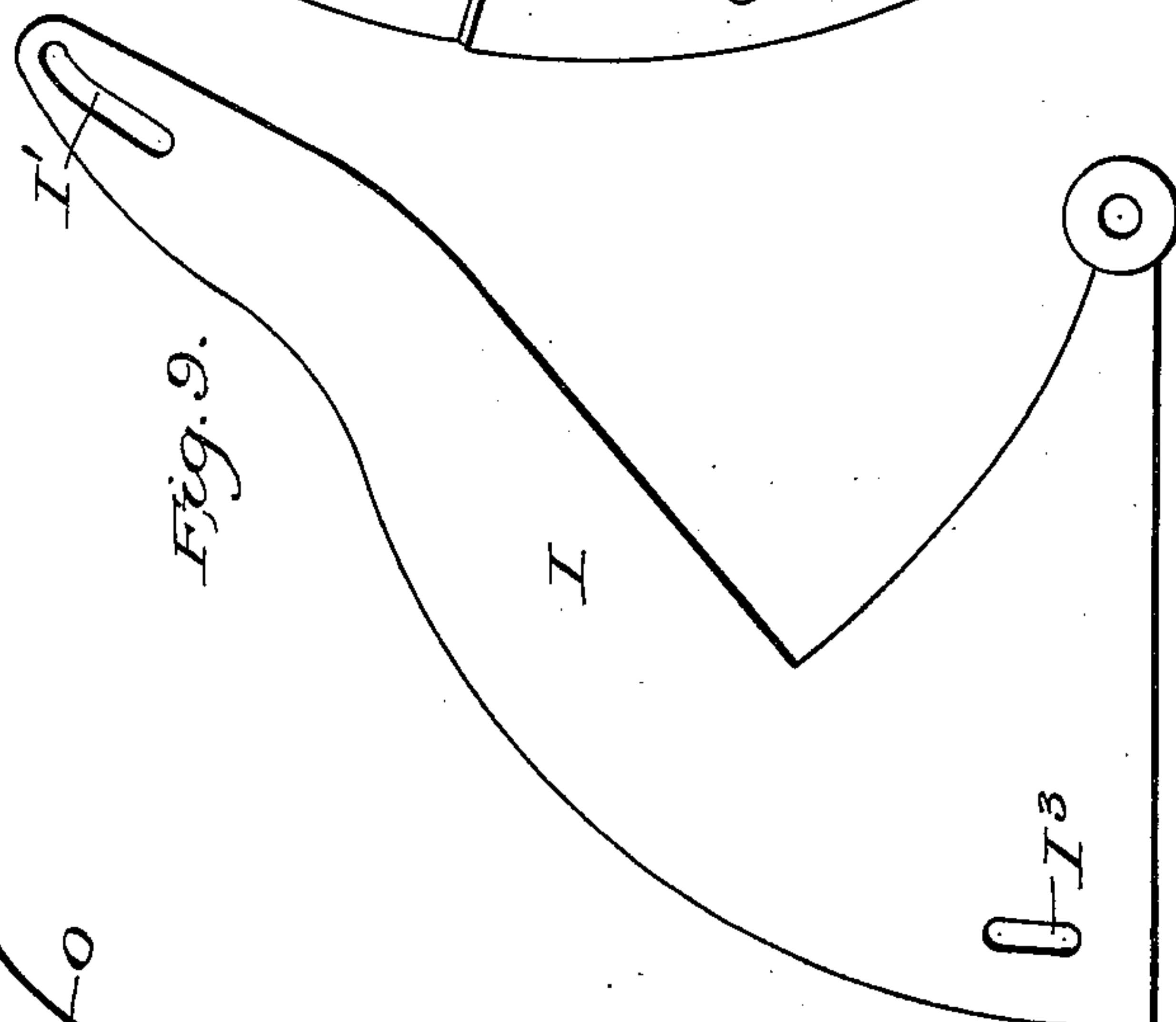


Fig. 9.

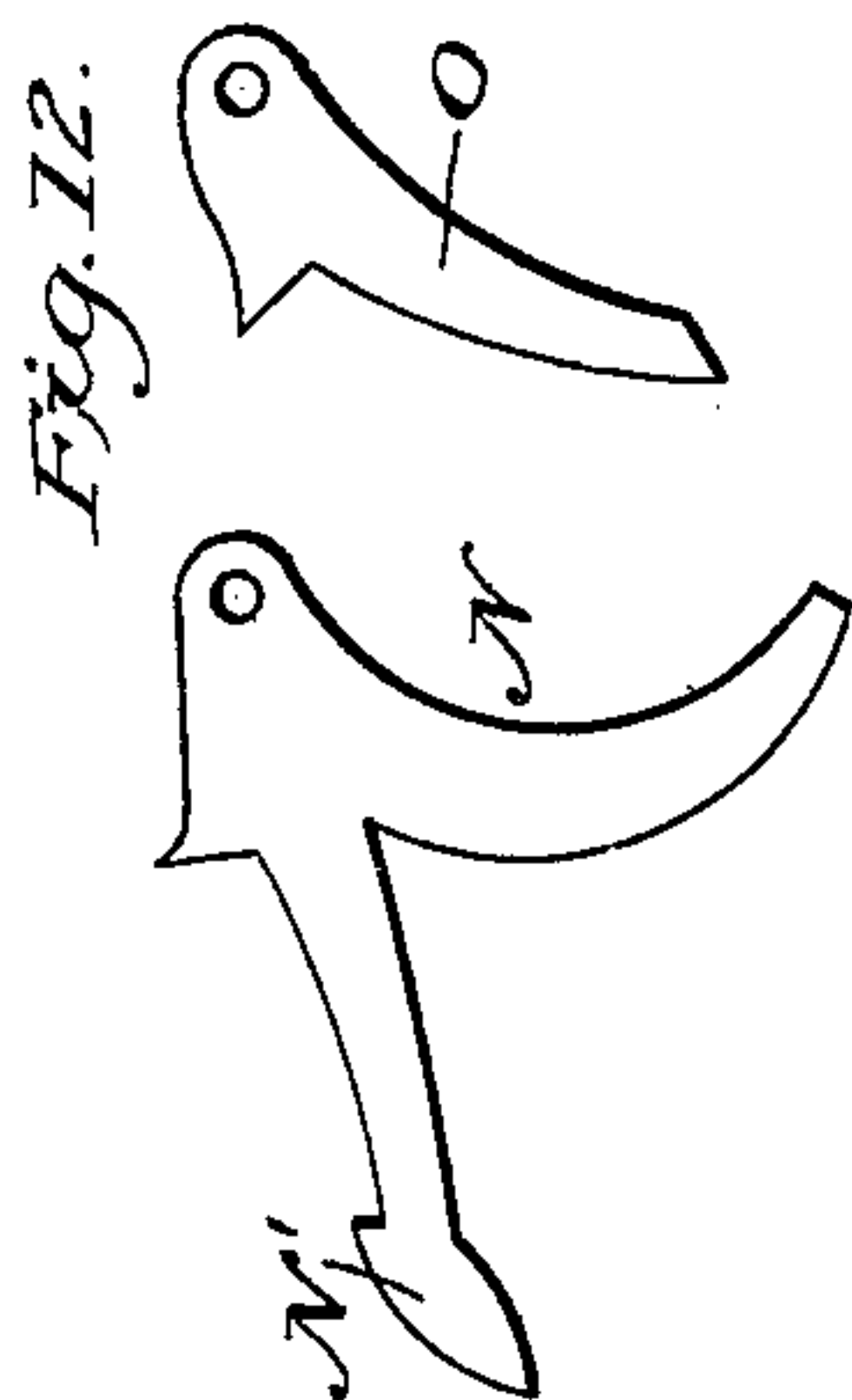


Fig. 12.

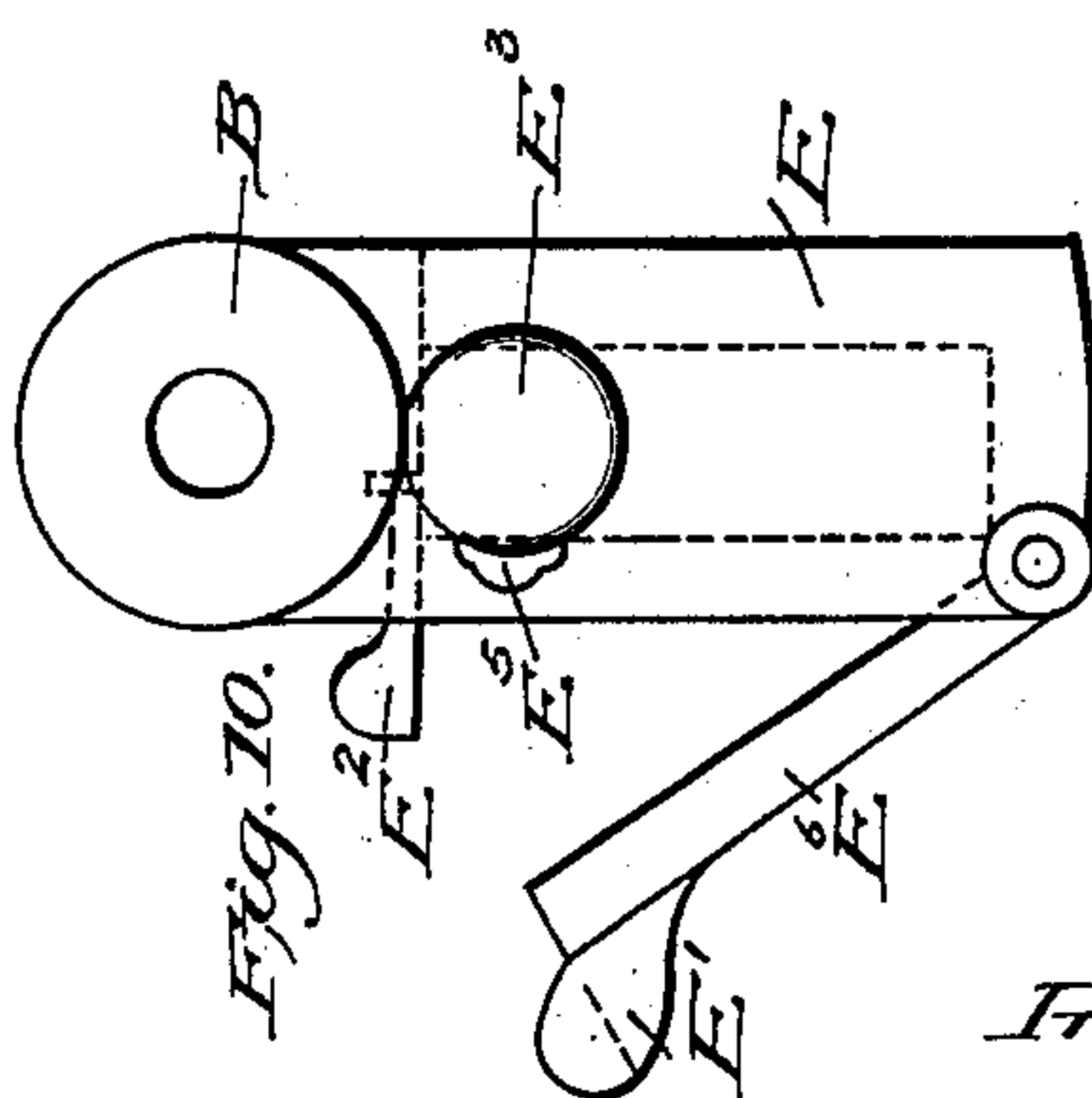


Fig. 10.

Witnesses.
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Inventor.
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UNITED STATES PATENT OFFICE.

SAMUEL N. McCLEAN, OF WASHINGTON, IOWA.

MAGAZINE BOLT-GUN.

SPECIFICATION forming part of Letters Patent No. 601,839, dated April 5, 1898.

Application filed March 28, 1894. Serial No. 505,508. (No model.) Patented in England May 15, 1894, No. 9,537; in France May 17, 1894, No. 239,385, and in Germany May 19, 1894, No. 83,136.

To all whom it may concern:

Be it known that I, SAMUEL N. McCLEAN, a citizen of the United States of America, residing in Washington, in the county of Washington, in the State of Iowa, have invented certain new and useful Improvements in Breech-Loading and Magazine Firearms, (for which I have received patents in Great Britain, No. 9,537, dated May 15, 1894; in France, No. 239,385, dated May 17, 1894, and in Germany, No. 83,136, dated May 19, 1894,) of which the following is a specification.

My invention relates to improvements in breech-loading and magazine firearms; and the objects are, first, to provide a structural plan, arrangement, and combination of the mechanism which render the weapon capable of extraordinary rapid firing from a magazine cartridge-feed by moving all the operating parts of the mechanism from and about a common center in regular consecutive order to load and fire the weapon by a single reciprocal movement of the parts; second, to provide improved means for actuating the breech-closing, loading, firing, shell-extracting, and magazine mechanism by a single movement of a grip-lever as a primary operating means; third, to construct the weapon on the general principle of cam action; fourth, to produce and control the automatic functional movement by cam-guides engaging bearings on the parts, some of which cam-guides are stationary and others movable in their relation to the bearings; fifth, to provide a breech-bolt-locking mechanism having a reciprocating and locking movement controlled by a movable and an immovable cam; sixth, to provide a shell-extracting mechanism to automatically grasp the cartridge as it passes into the bore of the barrel and to automatically release the cartridge when fully extracted, the gripping movement being controlled by a cam-guide which converges toward the bore of the barrel; seventh, to provide the weapon with an improved cartridge-magazine adapted to carry the supply of cartridges in file, located beneath the barrel and opening at the side for the purpose of loading and having mechanism for maintaining the regular order of the cartridges and discharging them into the stock-chamber; eighth, to provide a car-

tridge-carrier having a compound reciprocating and rotating movement with relation to the barrel and magazine and adapted to take a cartridge from the magazine and transfer it to the barrel; ninth, to provide a cartridge-receiver which shall automatically grasp the cartridge as it passes into the stock-chamber and automatically release it as it passes into the barrel.

Various parts of my improved firearm are novel, each in itself, in the sense of involving a construction adapting it to perform its function or functions in a manner peculiar and especially advantageous, and these or any of them may, without departure from my invention, be associated with parts of a gun different in construction in other respects from mine.

The construction of my improved weapon, regarded in the entirety of its parts, may in a general way be described as follows:

The stock or handle, to which the barrel is attached, contains a chamber provided with an opening through which the cartridges are introduced from the magazine, an opening to the rear end of the barrel, an opening for the action of a hand grip-lever, forming a primary actuating medium, and a discharge-opening through which the cartridges are ejected. Thus the stock or handle is composed of an immovable body to admit and permit the action of a spring-controlled movable part, (the grip-lever,) the preferred shape of which conforms more or less to the contour of the hand in gripping and which is operative by compression to actuate all the associated parts of the weapon. This grip-lever is operated by the compressive grasp of the hand in contradistinction to the usual guard-levers or trigger-levers requiring a movement of the forearm or finger to swing them on their fulcrums. The shape of this lever is substantially that seen in the drawings, which conforms to the shape of the gripping-hand and forms a swinging hand-grasp adapted to actuate the operating mechanism by the compression of the hand. The grip-lever is connected to a reciprocating breech-piece and has a reciprocating movement to open and close the breech. The breech-piece is connected to the grip-lever by a hinge connec-

tion which employs the action of a movable and an immovable cam-guide to lock and unlock the breech-piece. The shell-extractor is connected to the breech-piece and engages with a cam-guide, which guide has a general direction in line with the barrel and near its rear end converges toward the bore of the barrel to cause the extractor to grip the cartridge. The breech-piece also carries a spring-actuated firing-pin which engages with a sear located in the path of the forward movement of the grip-lever, which sear is disengaged from the firing-pin by the grip-lever to discharge the weapon. The firing-pin also engages with a spring-actuated sear which engages with a trigger and is disengaged from the firing-pin by the trigger in the usual manner. The grip-lever also engages with a locking-dog which is located in the path of the forward movement of the grip-lever and engages with the grip-lever to retain it locked in the loaded position of the weapon. This locking-dog also engages with a trigger and is disengaged from the grip-lever by the trigger, the trigger thus controlling and releasing both the loading and firing mechanism.

The cartridge-magazine is preferably located beneath the barrel and constructed to carry its cartridges in file and to feed them into the stock-chamber in succession. The cartridge-carrier is provided with an automatically opening and closing cartridge-receiver which automatically grasps the cartridge as it passes into the stock-chamber and automatically releases it as it passes into the barrel, the gripping and releasing movement of the receiver being controlled by cam action. The cartridge-carrier is controlled by a cam-guide arrangement to traverse a compound or undulatory course, involving a reciprocal movement with relation to the adjacent ends of the barrel and magazine and a rotary, tumbling, or tilting motion with relation to the same, whereby the carrier is lowered and tipped to present its receiver to a cartridge from the magazine and raised, tilted, or rotated to present the cartridge in aligned position with the bore of the barrel. The carrier is actuated by a carrier-lever which engages with the grip-lever and has a limited movement by means of a pin and slot to allow the forward movement of the breech-piece to insert the cartridge partially into the barrel and to actuate the carrier-lever to reciprocate and rotate the carrier into the position in front of the magazine and by its reverse movement to bring the carrier into line with the barrel, the reciprocating movements of the carrier being controlled by a cam-guide device, the weapon being discharged by the action of the firing-pin, which is controlled by a double sear device, actuated either by the trigger or by the grip-lever, the release of the controlling-spring to actuate it to withdraw the breech-piece and to extract and throw out the shell, and the carrier to bring a fresh cartridge into position for loading.

In addition to the foregoing I also provide a supplemental firing device comprising a spring-actuated sear which engages with the firing-pin and is provided with a thumb-piece to disengage it from the firing-pin, the thumb-piece being located in a convenient position to facilitate rapid firing without disturbing the steadiness of the aim.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of the firearm, the left side of the stock of the weapon being removed, showing the construction and operation of the various parts in the position of rest. Fig. 2 is a cross-section of the cartridge-carrier, showing the jaws of the carrier open. Fig. 3 is a cross-section of the cartridge-carrier, showing the jaws of the carrier closed. Fig. 4 is a longitudinal section of the cartridge-carrier, showing the cam or wedge for spreading the jaws and also pins projecting from the carrier. Fig. 5 is a transverse vertical section through the barrel and magazine of the firearm, taken on a line xx of Fig. 7. Fig. 6 is a horizontal section through the cartridge-stop, showing the spring-actuated catch. Fig. 7 is a longitudinal section of the stock and handle, showing the mechanism in the second or firing position and showing also a modification of the carrier and cartridge-rack. Fig. 8 is a perspective view of the grip-lever. Fig. 9 is a side elevation of the carrier-lever. Fig. 10 is an end view of the cartridge-magazine, showing the magazine open for the purpose of loading. Fig. 11 is an elevation of a portion of the barrel and magazine, showing the tube into which the spring is compressed and a scale arrangement to indicate the number of cartridges in the magazine. Fig. 12 is a detail view of the sears which control the action of the firing-pin.

Referring to the drawings, the stock chamber or frame is adapted and constructed to receive, contain, and hold all the assembled parts or mechanism essential to load and fire the gun. The stock chamber or frame consists of a casing having one of the side plates or walls detachable in order that the mechanism mounted or moving within the chamber may be conveniently examined, repaired, replaced, or assembled. It is provided with an opening or slot to permit the movement of the grip-lever, an opening in the end to admit cartridges from the magazine, and a way or groove for the breech-bolt, carrying the firing-pin.

E designates the magazine, preferably located beneath the barrel and having one wall or side thereof attached to the end wall of the stock-chamber and to the under side of the barrel, and the other side E^6 , preferably the right, hinged or otherwise pivotally attached, as indicated in Fig. 10 of the drawings, so that one side may be swung open to afford convenient access to the interior for the purpose of supplying or removing the cartridges. The hinged or pivoted side of the magazine may

be locked in closed position by means of a catch E^2 , engaging with a lug E' on the movable side of the magazine. In the drawings the forward end of the movable side of the magazine is pivotally supported in an arm or hanger E^7 , depending from the barrel, as seen in Fig. 11 of the drawings, the arm E^7 constituting the forward end wall of the magazine. This construction and arrangement permit the magazine to be opened at the side for the purpose of loading it. The magazine is constructed to receive and carry the cartridges in file or side by side in a row, and the depth of the magazine is made to agree substantially with the length of the cartridge used in the particular firearm to which it is connected. In the magazine is disposed and arranged a follower C, the inner edge or wall of which bears against the last cartridge, as indicated in the drawings in Figs. 1 and 7. To the front end of the follower is secured a guide and push rod E^8 , sliding in a tube F^3 , secured under the barrel, the rod being actuated by a spring E^4 , as indicated in Fig. 11 of the drawings. Fixed in the rod E^8 of the follower is a pin E^5 , which travels in a slot in the tube, and on the tube, adjacent to the slot therein, is marked a scale, so that as the rod moves the follower the location of the pin in relation to the scale indicates the number of the cartridges remaining in the magazine. The cartridge-follower when retracted for the purpose of loading is held by any suitable catch (not shown) and the magazine then turned open from the side of the weapon to receive the cartridges, which can be arranged therein in unison and the magazine then closed, and the follower being disengaged the force of the spring moves the follower and forces the cartridges from the magazine into the stock-chamber. To facilitate the disposition of the cartridges in the magazine, they may be arranged and packed in packages or boxes containing a single row.

To the follower C is suitably connected a cartridge-rack C^2 , provided with openings or slots 2 to take the small end of the cartridges and hold and retain them in regular consecutive order and deliver them in proper position to the cartridge-carrier in the stock-chamber. To support and direct the cartridge-rack, a guide-piece C^3 is mounted in the stock-chamber. In this instance the guide is shown as secured by means of brackets C^6 , Figs. 1 and 7; but it may be sustained by any suitable means. In the walls of the guide-piece C^3 are formed grooves C^4 , which are engaged by pins or lugs on the sides of cartridge-rack, substantially as indicated in the drawings. The cartridge-rack travels in the guide-piece, its movements being directed and controlled by the pins sliding in the grooves C^4 . The cartridge-rack C^2 is provided with ratchets or notches 3 on its bottom corresponding in number and position to the number of cartridges to be carried by the cartridge-rack. These ratchets or notches are

engaged by a catch D^3 , which is located in the path of the downward movement of the carrier and is disengaged from the rack by the carrier to control the feeding of the cartridges into the stock-chamber. Across the opening of the magazine into the stock-chamber is secured a cartridge-stop D. This stop assists in maintaining the regular position of the cartridges. In Fig. 7 I have shown a modification of the cartridge-rack wherein the part D is dispensed with, the seats in the rack being deep enough to hold the cartridges without the assistance of the stop D. When the stop D is dispensed with, the rack C^2 is then engaged directly by the catch D^3 without the intermediate action of the part D' , as shown in Fig. 7.

J designates the grip-lever, preferably of the shape shown in Fig. 8 of the drawings, having the lower or front side formed to suit the grip of the hand, and the upper end or the part which projects into and moves in the stock-chamber is composed of duplicate plates projecting the requisite distance to engage the connected parts. This grip-lever is hinged to the trigger-guard, and at the rear of the grip-lever is a spring K, the free end of which bears on a pin J' in the grip-lever to move the grip-lever down to the position illustrated in Fig. 1. In the upper ends of the grip-lever are cam slots or guides J^4 . The immovable cam-guides S, shown as cam-grooves, are preferably located in the walls of the stock-chamber or in the stock-plates. These guides have a curved and forward direction and are identical in size and direction, their forward ends rising up in front of a shoulder P on the stock-wall and against which the breech-bolt is locked. These immovable cam-guides S cooperate with the movable cam-guides J^4 by means of the pin R' . This pin R' passes through the locking-bar R and extends through the cam-slots J^4 , with its respective opposite ends extending into the guides S. The breech-locking bar R is hinged to the under side of the breech-bolt, substantially as shown in Figs. 1 and 7 of the drawings.

The breech-bolt T is housed in a chamber or way formed in the stock and is of a size and length determined by the length of the cartridge used and has a reciprocating movement to open and close the breech. The firing-pin T' has formed in its under side a notch, as shown, to engage with a sear.

The shell-extractor U is attached to the breech-piece with its free forward end projecting beyond the breech-bolt, the end being formed with a hook or catch to engage the rim-flange of the cartridge. The extractor is formed or provided with a pin 5, which engages in a cam-guide U' , located in the receiver, and has a general direction in line with the barrel; but near the rear end it converges toward the axis of the barrel sufficient to carry the extractor into engagement with the cartridge and cause it to grip the same.

O designates a sear pivotally mounted in the stock-wall and held in engagement with the firing-pin by a suitable spring. (Not shown.) One end of the sear projects into the path of the firing-pin and engages with it, and the other end projects into the path of a lug J² of the grip-lever, which engages with it to disengage it from the firing-pin. N designates a second sear mounted on the same pivot in the stock-frame and is controlled by a spring 6. The upper end of this sear N also projects into the path of the firing-pin and engages with it, the lower end of the sear engaging with an arm of the trigger L, and is actuated by the trigger to release the firing-pin. The sear N also is formed with an arm N', which projects out through the stock-frame at the upper side of the small of the stock to the rear of the chamber in which the breech-piece slides and is provided with a button on its end which is conveniently located to be actuated by the thumb to release the firing-pin.

G designates the cartridge-carrier located in the forward end of the stock-chamber and controlled to perform a compound reciprocating and rotating movement by means of a cam-guide. This cartridge-carrier consists of a body part of such length and size as may be desired to suit the required cartridge and to move smoothly between the opposite walls of the stock-chamber. To the opposite sides of the carrier are hinged the gripping-arms G' of the cartridge-holder, drawn together by the force of a spring G⁴, the upper ends of the arms being shaped to conform to the contour of the cartridge and to grip or embrace the cartridge from opposite sides. To separate and open the gripping-arms, a wedge cam-piece G² is arranged to slide in grooves in the carrier between the gripping-arms of the cartridge-holder. When the carrier is in the upper position, the rear end of this cam-wedge is in the path of the forward movement of the breech-bolt and is drawn forward between the gripping-arms, forcing them open to release the cartridge as it passes into the bore of the barrel. The carrier G is provided on its respective opposite sides with pins G³ and G⁵. The bearing G³ is located near the upper and rear part of the left side of the carrier and engages in a curved groove G⁴, located opposite the rear end of the magazine, and has an upward and rearward direction and controls the rotating movement of the carrier. The pin G⁵ is located on the right-hand side of the carrier and engages with a lever H, which controls the reciprocating movement of the carrier and is pivoted at its front end to the stock-frame. The lever H is provided with a pin I², which passes through the cam-slot I', located in the carrier-lever I. This carrier-lever I is pivoted to the same pin on which the grip-lever is mounted, and the reciprocating and rotating movement of the cartridge-carrier is effected by these parts as follows: When the grip-lever is in position of

rest, as shown in Fig. 1, the carrier G is then in its upper position, the pin G³ is then in the upper and rear part of the groove G⁴, and the pin I² on the right-hand side of the carrier is in the upper and forward part of the cam-slot I'. The cam-groove G⁴ is preferably located in the left stock-wall, its lower end being in front of the rear end of the magazine, and from thence having a rearward and upward direction, its upper end rising into line with the barrel. The direction of this groove may be varied to give any required movement to the carrier. When the grip-lever moves forward to actuate the weapon, the pin I⁴ slides through the slot I³ and allows the breech-piece to engage the wedge G², which spreads open the jaws G' of the cartridge-holder and releasing the cartridge as it passes into the barrel, and when the pin I⁴ has reached the forward end of the slot I³ it engages the carrier-lever I and causes it to swing forward and downward, thus communicating a downward movement to the lever H, which, acting on the pin G⁵, causes the front end of the carrier to swing down and the pin G³ is drawn downward and forward through the groove G⁴, thus causing the cartridge-carrier to rotate as it descends. The reverse movement causes it to rotate into line with the barrel as it ascends. The carrier-lever when it actuates the carrier to descend into position in front of the magazine causes the wedge-shaped cam G² to come into contact with a stop D, which arrests the downward movement of the wedge, and the further downward movement of the carrier operates to force back the wedge and allow the gripping-jaws of the cartridge-holder to close upon the cartridge.

M designates a locking device located in front of the trigger and is pivotally attached to the trigger-plate, and when the trigger is retracted this lock M may be turned or moved into engagement with the trigger to maintain the trigger and sear N out of action and leaving the firing mechanism to be controlled by the grip-lever and sear O.

In Fig. 7 of the drawings I have shown a modification of the carrier in which the lever H, which connects the carrier to the stock-wall, is dispensed with, and the cartridges instead of being carried at a right angle, as shown in Fig. 1, are shown as carried at an angle of forty-five degrees. The form of the cartridge-rack may be varied to carry the cartridges at any required angle, and when the seats of the cartridge-rack are of sufficient depth the rack will maintain the relative position and regular order of the cartridges without the assistance of the part or stop D, as shown in Fig. 7. When the part or stop D is dispensed with, the catch D³ engages with notches in the under side of the rack C² to successively feed the cartridges into the stock-chamber. This spring D³ is located beneath the cartridge-rack C² and is in the path of the downward movement of the

cartridge-carrier and is disengaged by the carrier to release the cartridge-rack and allow it to feed a cartridge into the embrace of the cartridge-holder. In Fig. 7 it is shown that instead of using only one cam-guide (shown as a cam-groove G^4 in Figs. 1 and 7) and a lever H, I employ an additional or auxiliary cam-groove G^7 . These guide-grooves G^4 and G^7 are located in the stock-wall in front of the rear end of the magazine and have a rearward and upward direction, their upper ends rising into line with the barrel. The rear guide G^4 engages with a pin G^3 to control the movements of the rear end of the carrier, and the guide G^7 engages with the pin G^8 , located on the left-hand side of the carrier near its forward and upper corner to control the movements of the forward end of the carrier.

The action of the firing mechanism is modified by the dog L' . This dog is mounted on the trigger in the path of the forward movement of a catch J^5 on the grip-lever, and when the dog L' is in engagement with the grip-lever the weapon is retained in the loaded position until by the partial movement of the trigger the firing-pin is released, as herein-after described, and then by a further movement of the trigger the grip-lever is released also and another cartridge lifted into the loading position automatically. The grip-lever is protected by a grip-guard X, and when the operating parts are in the position of rest, as shown in Fig. 1, the cartridge is carried in front of the bore of the barrel and is not designed to be thrown into the barrel until firing is desired.

The operation is as follows: All the parts of the loading and firing mechanism are swung from and about a common center and have a consecutive and common movement to perform in regular order all the required functions of loading and firing. The grip-lever by compression and release actuates the entire mechanism. When the operating parts are in the loading position or position of rest, the grip-lever J is swung downward and forward by the force of the spring, and the breech-piece T is withdrawn and the cartridge-carrier G lifted into position in front of the bore of the barrel. The pin R' , which connects the grip-lever with the breech-locking bar R, is then in the lower and rear end of the stationary cam breech-locking guides S and in the lower and forward end of the cam-slots J^4 . Then by compressing the grip-lever this pin R' is driven forward through the immovable cam-guides until it reaches the curved ends of these guides S, when the action of the movable cam-slots J^4 lifts the end of the breech-locking bar into engagement with the shoulder P on the stock-wall and locks the breech-piece in position against the breech end of the barrel. During this movement of the grip-lever in advancing the breech-piece the firing-pin is stopped by engagement with the sears N and O to cause the further advance of the breech-piece to compress the

spring which actuates the firing-pin. The carrier-lever engages with the grip-lever and has a limited movement by means of a pin-and-slot connection, which allows the grip-lever to insert the cartridge partially into the bore of the barrel before the grip-lever engages with the carrier-lever to swing it forward and downward and cause it to actuate the cartridge-carrier to perform its compound reciprocating or undulatory motion. The movements of the cartridge-carrier are controlled by the carrier-guides, the rear guide controlling the movement of the rear end of the carrier and the forward guide or the lever H controlling the movement of the forward end of the carrier. When the carrier is in its upper position, the carrier-guide pins are in the upper ends of the carrier-guides, and when the carrier-lever engages with the pin on the right-hand side of the carrier by means of the cam-slot located in the front end of the carrier-lever it causes the forward end of the carrier to move into line with the cartridge, and when the carrier is carried forward and downward into position in front of the magazine. The direction of these carrier-guides may be varied to produce any required movement of the carrier. The cartridges are fed from the magazine into the cartridge-receiver by the action of a catch, which engages with the cartridge-rack and is disengaged from the cartridge-rack by the downward movement of the carrier to release the rack and allow it to deliver a cartridge to the cartridge-holder. The catches D' and D^3 engage with the cartridge-rack C^2 to control the successive feeding of the cartridges from the magazine to the cartridge-holder. These catches D' and D^3 are located in the path of the movement of the carrier to release the cartridge-rack and are latch-shaped on their outer side, which causes them to descend to move out of line with the carrier after engagement from the rack and to reengage with the rack to prevent the advance of the succeeding cartridge.

It is evident that many changes in the construction and operation of the various parts of my invention can be made without departing from the spirit of the invention, and I do not limit myself to the specific constructions shown and described.

What I claim, and desire to secure by Letters Patent, is—

1. In a breech-loading firearm, a stock-chamber provided with cam-guides in the walls thereof, a grip-lever connected to the stock or handle and provided with guides, a firing-pin, a breech-bolt, a connection between the breech-bolt and the grip-lever provided with a pin to engage the guides of the stock-chamber and the grip-lever, and a sear in the path of the grip-lever to hold the firing-pin, substantially as described.

2. In a firearm, a firing mechanism comprising a grip-lever connected to a reciprocating breech-piece, an immovable guide en-

gaging the connecting medium a movable cam-guide in the grip-lever engaging the connecting medium, a spring-actuated firing-pin carried by the breech-piece and a sear engaging the firing-pin and located in the path of the grip-lever.

3. In a firearm, a stock-chamber provided with cam-guides in the walls thereof, a grip-lever connected to the stock or handle and formed with cam-slots in its upper extremities, a reciprocating breech-bolt, connection between the breech-bolt and the grip-lever provided with pins to engage the guides in the stock-chamber and grip-lever, a firing-pin carried by the breech-bolt, a sear engaging the firing-pin, and a trigger engaging the sear.

4. In a breech-loading firearm, a grip-lever, a reciprocating breech-piece connected to the grip-lever a spring-actuated firing-pin carried by said breech-piece, a sear for engaging the firing-pin, a trigger engaging said sear and a dog to lock and release the grip-lever and the trigger being operative to release the dog and firing mechanism, substantially as described.

5. In a breech-loading firearm, a firing mechanism, comprising a grip-lever, a reciprocating breech-piece connected to the grip-lever, a spring-actuated firing-pin carried by the breech-piece, a sear engaging the firing-pin, and provided with an arm extending through the stock-wall whereby the sear may be disengaged from engagement with the firing-pin.

6. In a firearm, a cartridge-carrier held movably between the walls of the forward end of the stock-chamber, its rear end connected to the walls of the stock to move the rear end of the carrier in an upward and backward direction and its forward end connected to the stock-walls to give the forward end of the carrier an upward and rotary movement, a carrier-lever connected to the carrier, and an operating-lever connected to the carrier-lever, the said carrier having both a reciprocating and rotating movement with relation to the barrel and magazine.

7. In a breech-loading firearm, a grip-lever, a reciprocating breech-piece connected to said lever, a spring-actuated firing-pin carried by said breech-piece, a sear engaging said pin and disengaged from the pin by the grip-lever, a cartridge-carrier having a reciprocating and rotating movement and a carrier-lever connected to the grip-lever, and engaging with the carrier to operate it, substantially as described.

8. In a breech-loading firearm, a stock-chamber having cam-guides located opposite the rear end of the magazine and rising into line with the barrel, a cartridge-carrier having pins or lugs on its upper corners to engage the guides, the guides controlling the movement of the carrier to give it a compound reciprocating and rotary motion with

relation to the magazine and barrel, and an operating-lever connected to the carrier.

9. In a breech-loading firearm, a grip-lever forming a hand-grasp, substantially as described, pivotally supported in the stock or grip of the weapon and conforming to the contour of said part, a carrier-lever connected to said grip-lever and having a cam-guide to engage the cartridge-carrier, and a cartridge-carrier connected to the carrier-lever.

10. In a breech-loading firearm, a grip-lever, a carrier-lever connected to the grip-lever, and a cartridge-carrier supported in stationary cam-guides and connected to the carrier-lever.

11. In a firearm a cartridge-holder having gripping-arms hinged to the sides of a cartridge-carrier, a spring to draw the arms together, a wedge-shaped cam having a reciprocating movement to open and close the arms.

12. In a breech-loading firearm a grip-lever provided with a lug J⁵, on its inner forward part, a trigger provided with a catch L' on its inner side thereof, a lock M pivoted to the trigger-plate in front of the trigger to engage therewith to hold it out of engagement with the grip-lever.

13. In a breech-loading firearm, a cartridge-carrier having grooves in its upper side to receive and hold a reciprocating cam, a cartridge-holder hinged to the opposite sides of the carrier and having its upper ends formed to grip the cartridge, and its inner sides converging toward each other, a reciprocating wedge-shaped cam engaged and held on the upper side of said carrier by the grooves and having a reciprocating movement to open and close the cartridge-holder.

14. In a breech-loading firearm, a cartridge-holder having gripping-arms hinged to the side of the cartridge-carrier, a spring to draw the arms together, a wedge-shaped cam having a reciprocating movement to open and close the arms, said cam being in the path of the forward movement of the breech-piece when the carrier is in its upper position, and engaging with a stop when it descends to position in front of the magazine, to reciprocate the cam.

15. In a breech-loading firearm, a reciprocable breech-piece, a spring-actuated firing-pin carried by said breech-piece, a sear for the firing-pin, a cartridge-carrier having a compound reciprocating and rotary motion with relation to the magazine and barrel, a carrier-lever having a cam-guide engaging the carrier, a grip-lever connected with the breech-piece and carrier-lever to operate them, a cartridge-holder connected to said carrier and automatically actuated to open at the barrel and close at the magazine.

16. In a firearm, a grip-lever or hand-grasp, a carrier-lever connected to said grip-lever or hand-grasp, a carrier connected to said carrier-lever, a cartridge-holder connected to said carrier and having gripping-arms to engage

the cartridge, a reciprocating cam removable between the said arms to open and close them.

17. In a firearm, a grip-lever a reciprocating breech-piece connected to said grip-lever, a spring-actuated firing-pin carried by said breech-piece, a sear engaging said firing-pin, a trigger engaging said sear to disengage it from the firing-pin, a carrier-lever connected to the grip-lever, a carrier connected to said carrier-lever, and having a reciprocating and rotating movement, a cartridge-receiver connected to the carrier and provided with arms which are opened and closed by a reciprocating cam, substantially as described.

18. In a firearm a cartridge-magazine conveying its cartridges in file containing a spring-actuated cartridge-follower and a longitudinal rack connected to the follower and provided with a series of seats for the ends of a file of cartridges, to maintain the cartridges in regular order substantially as described.

19. In a breech-loading firearm, the combination with the stock-chamber and carrier, of a magazine containing a spring-controlled rack adapted to hold the supply of cartridges in file and locking means substantially as described, for the rack disengaged by the action of the cartridge-carrier to release the rack to feed the cartridges successively to said carrier, substantially as described.

20. In a breech-loading firearm, the combination with the stock-chamber and carrier of a magazine containing a spring-controlled rack, adapted to hold the supply of cartridges in file, and having a scale to indicate the number of cartridges in the magazine, and a locking means for the rack located in the path of the carrier and disengaged by the carrier to successively feed the cartridges into the embrace of the carrier, substantially as described.

21. In a breech-loading firearm the combination of a reciprocating breech-piece, a spring-actuated firing-pin carried by said breech-piece, a sear engaging the firing-pin, a cartridge-carrier having a compound reciprocating motion with relation to the barrel and the magazine, a cartridge-holder having arms to automatically grasp the cartridge as it passes into the stock-chamber, and release it as it passes into the barrel, a grip-lever connected to the breech-piece, a carrier-lever connected to the grip-lever and cartridge-carrier to operate them, and a magazine having a spring-controlled rack, said rack being provided with locking means which means are disengaged by the movement of the carrier to

allow the magazine to feed the cartridges successively into the embrace of the cartridge-holder, substantially as described.

22. The combination of the magazine, the spring-actuated follower therein, the cartridge-rack connected to the follower, and formed with seats to receive the cartridges, and having pins on the sides thereof, and a guide in the stock-chamber formed with grooves in the sides to take the pins of the cartridge-rack, as and for the purpose specified.

23. A breech-loading firearm having a grip-lever forming a hand-grasp, substantially as described, pivotally supported in the stock or grip of the weapon and conforming to the contour of said part as its primary actuating means for loading and firing the weapon, a carrier-lever having a pin-and-slot connection with the grip-lever to permit limited movement of the latter independently of the carrier-lever, substantially as described.

24. In a breech-loading firearm comprising in combination with the barrel and stock or handle containing a chamber, a spring-controlled grip-lever carrying studs and provided with a cam-slot, a breech-piece carrying the firing-pin and an extractor and having a hinged link connection by a pin with said cam-slot and entering a stationary cam-guide O, sears for the firing-pin and a thumb-piece on one of the sears, a trigger provided with a locking-dog and an adjustable lock, a carrier-lever having a slot for the stud and adapted to be engaged with said grip-lever and provided with a cam-guide, a cartridge-carrier engaging and controlled by said cam-slot, and stationary cam-guides and provided with a cartridge-holder and a magazine operator to feed the cartridges to the carrier, the whole being constructed and arranged to operate, substantially as described.

25. In a breech-loading firearm, a cartridge-carrier movable between the magazine and the barrel, a movable cam-guide engaging and reciprocating the carrier, and a stationary cam-guide engaged by the carrier.

26. In a breech-loading firearm, a cartridge-carrier engaging with a movable and an immovable cam-guide to reciprocate the carrier, an actuating-lever, and a carrier-lever having a pin-and-slot connection with the actuating-lever and connected to the carrier to control the movements of the carrier.

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