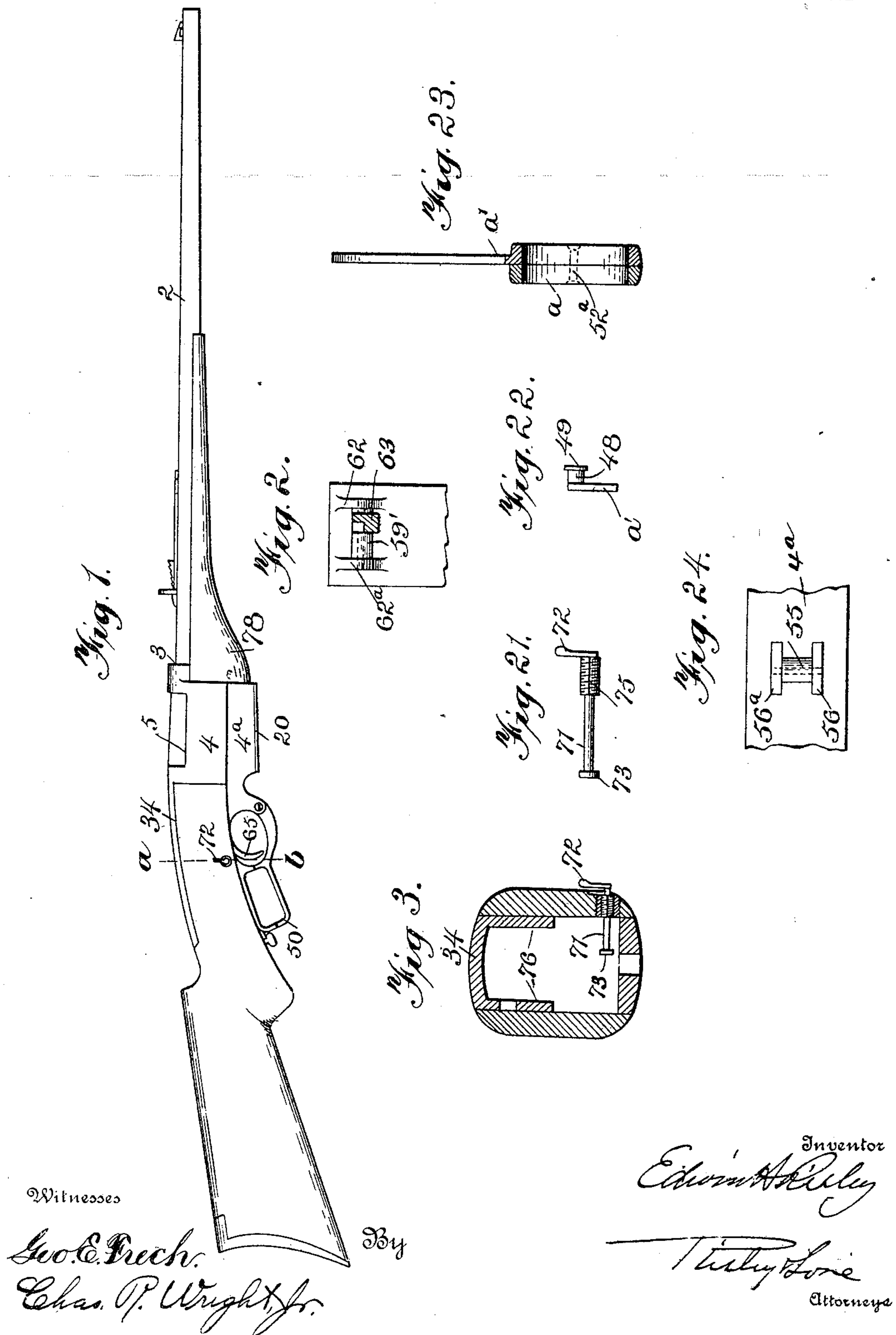


No. 833,803.

PATENTED OCT. 23, 1906.

E. H. RISLEY.  
MAGAZINE FIREARM.  
APPLICATION FILED OCT. 7, 1902.

4 SHEETS—SHEET 1.

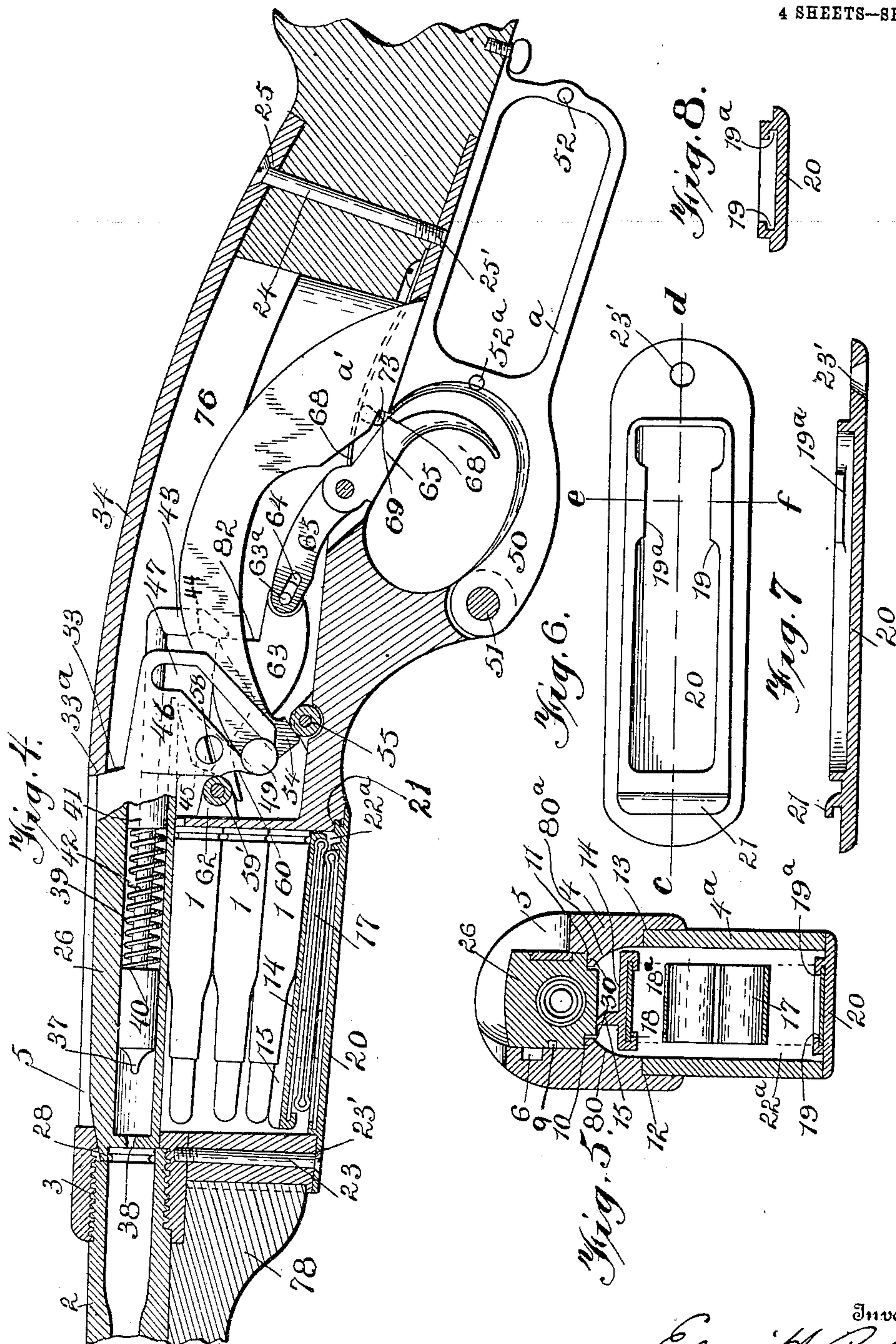


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Witnesses

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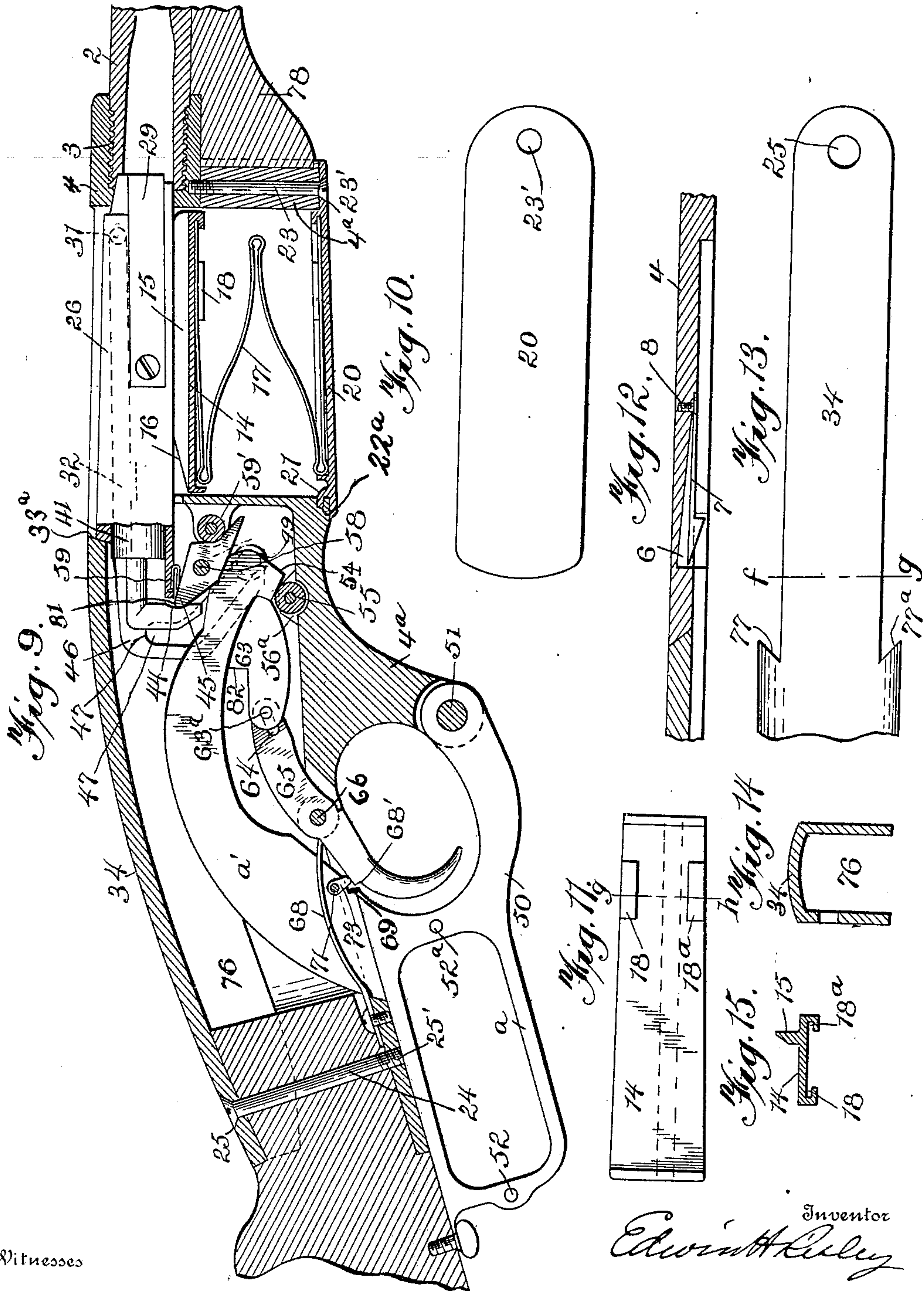


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4 SHEETS—SHEET 3.



Witnesses

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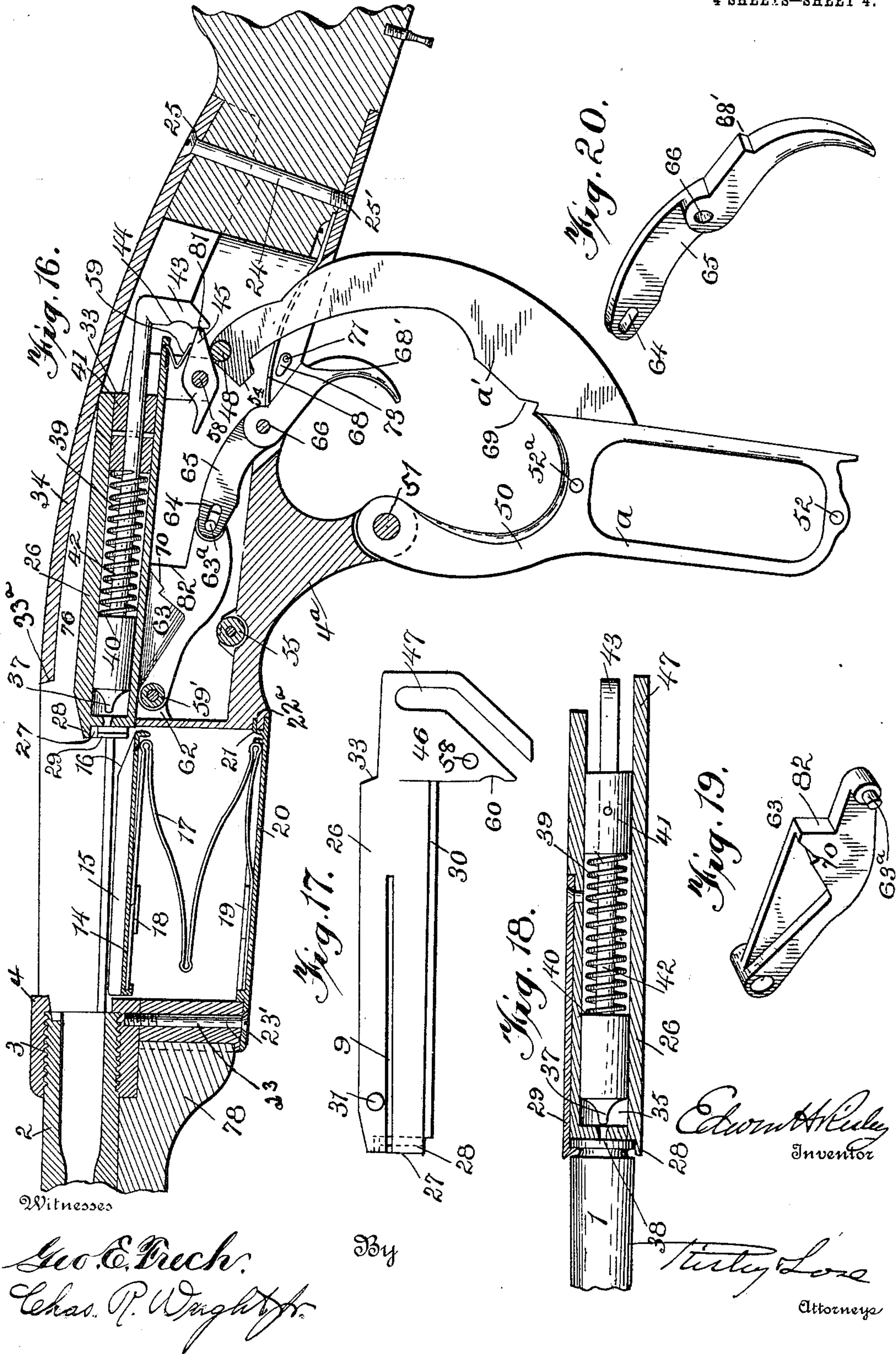


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Witnesses

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# UNITED STATES PATENT OFFICE.

EDWIN H. RISLEY, OF UTICA, NEW YORK.

## MAGAZINE-FIREARM.

No. 833,803.

Specification of Letters Patent.

Patented Oct. 23, 1906.

Application filed October 7, 1902. Serial No. 126,278.

*To all whom it may concern:*

Be it known that I, EDWIN H. RISLEY, a citizen of the United States, residing at Utica, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Magazine-Firearms, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to an improvement in magazine-firearms, consisting particularly in a construction whereby one of a plurality of contained cartridges is automatically moved into a firing position by the action of the mechanism.

The invention further comprises a new and improved mechanism for the rapid breeching and unbreeching of the gun.

The invention further comprises the hereinafter-described combination and arrangement of parts, which are clearly illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a firearm constructed in accordance with my invention, Fig. 2 is a broken plan of an interior section of a frame. Fig. 3 is a transverse sectional view of the stock on the line *a b*, Fig. 1. Fig. 4 is a longitudinal central section of a portion of my improved firearm, the parts being illustrated in the positions occupied when the magazine is fully loaded and the action of the gun closed. Fig. 5 is a transverse sectional view taken through the magazine, the latter being unloaded. Fig. 6 is an enlarged plan of the detachable bottom for the magazine. Fig. 7 is a longitudinal section of the frame on lines *c d* of Fig. 6. Fig. 8 is a transverse section of Fig. 6 on the line *e f*. Fig. 9 is a longitudinal central section of the improved firearm, showing the action closed with the magazine in an unloaded position. Fig. 10 is a bottom plan of the magazine-closing plate illustrated in Fig. 6. Fig. 11 is a bottom plan of the carrier-plate for the magazine. Fig. 12 is a sectional view taken through one wall of the magazine, illustrating particularly the ejector-catch in said wall. Fig. 13 is a plan view of the rear upper tang of the gun-frame. Fig. 14 is a sectional view of the tang on lines *f g* of Fig. 13. Fig. 15 is a transverse section of the carrier-plate on line *g h* of Fig. 11. Fig. 16 is a broken longitudinal section of the firearm, the parts being illustrated in the positions occupied when the action is open. Fig.

17 is a side view of the breech-bolt. Fig. 18 is a longitudinal section of the same, parts being shown in elevation, and a section of a cartridge shown in the position occupied in front of the breech-bolt. Fig. 19 is a perspective view of the sear. Fig. 20 is a perspective view of the trigger. Fig. 21 is a side elevation of the locking device for the action of the gun. Fig. 22 is a side view of a lever connecting the breech-bolt and the breeching-lever. Fig. 23 is a rear elevation of the breeching-lever. Fig. 24 is a plan view of a portion of the interior gun-frame, illustrating particularly an antifriction-roller to support the forward end of the breeching-lever in closing the action.

In connection with my improved magazine-firearm I prefer to use a type of cartridge known as "rimless," such as shown at 1, wherein the contour of the body of the shell has no projecting rim at the base.

The barrel 2 of the gun is threaded at its inner or rear end and is screwed into the gun-frame at 3. In rear of the connection between the gun-frame and barrel I arrange the magazine, comprising a shell-like structure, preferably formed in two sections 4 and 4<sup>a</sup>, the former of which is rabbeted at 12 and 13 on its lower edge to receive the upper edges of the lower section 4<sup>a</sup>. Section 4 of the magazine is cut away on the right-hand side, as at 5, Fig. 5, to permit the ejection of the cartridge, and in the opposite wall of this section of the magazine-frame I form a longitudinally-arranged groove 6, in which is supported the ejector 7, comprising a spring-hook secured by a screw 8, as clearly shown in Fig. 12.

The breech-bolt 26 is adapted for longitudinal movement within the magazine of the gun, preferably riding on oppositely-arranged inwardly-projecting ledges 10 and 11, secured to or formed integral with the walls of the upper section 4 of the magazine. At the forward end the breech-bolt is provided with a pin or trunnion 31, arranged for longitudinal travel in groove 32 in the wall of the magazine, whereby the forward end of the breech-bolt is compelled to travel in a straight line. The rear of the breech-bolt is provided with a breeching-shoulder 33, arranged to engage a shoulder 33<sup>a</sup> in the frame of the magazine, or, more properly speaking, the forward edge of the upper frame-tang 34.



The breech-bolt is non-rotating and in the present instance preferably square in section, being provided near its lower edge on opposite sides with shoulders 30, arranged to cooperate with the ways 10 and 11 in the upper section of the magazine-frame. The front end of the breech-bolt is cut away to form an inverted-U-shaped recess 27, the edge flanges 28 forming this recess being spaced sufficiently apart to admit the butt-end of a cartridge within the recess. An extractor 29 is arranged to form a portion of the flange 28, being secured in the wall of the breech-bolt with its hooked end normally projecting within the recess 27. By this means the extractor 29 will engage the rim or depression in the base of the cartridge and hold the cartridge securely in front of the breech-bolt to permit the discharge of the cartridge. Furthermore, in the opening of the action of the gun the extractor 29 operates to withdraw the cartridge from the barrel and move the same rearward with the breech-bolt. A groove 9, formed in the wall of the breech-bolt, receives the headed end of the ejector-hook 7, and in the unbreeching of the gun the hook 29 will move the cartridge rearward with the breech-bolt until the head of the cartridge strikes the ejector-hook and arrests its rearward movement. The extractor 29, being still in engagement with the cartridge, will operate to throw the latter from the gun through the opening 5 in the magazine.

The breech-bolt is partially hollow to receive the firing-pin, which latter is formed with a firing-point 37, arranged to be projected through an opening 38 in the front wall of the breech-bolt. The firing-pin carries a coiled spring 39, bearing at one end against the front end 40 of the firing-pin and at the opposite end against a fixed abutment 41 in the breech-bolt. A pin 42, connected with the head of the firing-pin, passes through the coiled spring and through the abutment 41, being formed at its rear end beyond the breech-bolt with a cocking-heel 43, the front face of which is formed with a curved recess 44. A retractor 45 is arranged to enter the recess 44 when the gun is fired, as illustrated in Fig. 9.

The magazine is provided with a carrier-plate 14, formed on its upper surface at one side of the longitudinal center with a rib or projection 15. The walls 80 80<sup>a</sup> of the upper section of the magazine-frame adjacent the ways 10 and 11 for the breech-bolt are curved inwardly to conform to the shape of the cartridges, and the rib 15 is located on the carrier-plate 14 with particular relation to these curved surfaces, so that the cartridge may be moved into proper position to be actuated by the breech-bolt, as will be understood.

The magazine proper is of sufficient width

to permit the cartridges to lie in staggered relation when viewed in section, so that they may be alternately engaged by the curved walls of the magazine to be projected into operative position. The rear edge of the rib 15 is cut away at 16 to permit free movement of the breech-bolt in the event the carrier-plate should be projected into the path thereof. The lower face of the carrier-plate is provided with inward projections 18 18<sup>a</sup> on opposite edges to provide recesses, in which one end of the operating-spring 17 is supported, the opposite end of which is detachably supported between lugs 19 and 19<sup>a</sup>, formed in the shoe or detachable bottom for the magazine. This shoe is formed at its rear end with a hook 21 to engage a recess 22<sup>a</sup> in the rear wall of the magazine, while the forward end of the shoe is provided with an opening 23' to receive a screw 23 to secure the parts together. The screw 23 passes through section 4<sup>a</sup> of the magazine and enters a threaded opening in section 4, while the rear portions of the section are held together by screw 24, the latter screw passing through the gun-stock.

To the rear of the breech-bolt I provide or form integrally a wing 46, formed with a slotted camway 47, which camway is vertical for a portion of its length and inclines from said vertical portion forward toward the lower end of the wing. For operating the breech-bolt I provide a breeching-lever 50, fulcrumed to the lower tang of section 4<sup>a</sup> of the magazine. This lever is preferably made in two parts *a* and *a'*, secured together by rivets 52 52<sup>a</sup>, the construction being such as to provide a finger-recess, as shown. Section *a'* is a curved arm arranged concentric to the pivot 51 of the lever 50 and at its free end within the gun is provided with a laterally-projecting stud 48, having a head 49, which stud is arranged for travel in the cam-groove 47 in the wing of the breech-bolt, the head of the pin 49 serving to prevent separation of the parts in operation. Difficulty has been experienced in guns of this general type by reason of the concentric arm of the hand-lever 50 springing laterally from operative connection with the wing of the breech-bolt and by reason of the parts wedging or twisting at the connection between said wing and arm. I overcome these difficulties in that the end of my concentric arm extends beside and parallel with a side face of the breech-bolt wing and is maintained in proper relation with respect thereto by the lateral stud 48, extending through the slot and at its outer end having the enlarged flat head 49 at the opposite face of the breech-bolt wing and of greater diameter than the width of the slot. The free end of the section *a'* of the lever 50 is arranged to travel upon and be supported by an antifriction-roller 55, journaled between ears 56 and 56<sup>a</sup> in the lower



tang of the frame, whereby to brace and rigidly support the breeching-shoulder on the bolt in contact with the breeching-shoulders of the upper tang or section of the magazine.

5 A rolling cam action is attained by the engagement of the inclined free end of the concentric arm of the hand-lever with the roller 55, whereby great force and pressure are exerted with comparatively slight effort on the  
10 breech-bolt in forcing the shoulders 33 33<sup>a</sup> into tight engagement.

For withdrawing the firing-pin into inoperative position and holding the same in such position I provide retractor 45, hereinbefore  
15 referred to, which is pivoted on the wing of the breech-bolt at 58 and normally held in operative position by spring 59, arranged between its rear portion and the lower face of the breech-bolt when the gun is open. When  
20 the action is closed, the retractor is in the position illustrated in Fig. 9, being depressed by its forward edge engaging beneath a stud or antifriction-roller 59', which forces the rear end of the retractor into depression 44 of the  
25 firing-pin heel. A depression 60 is formed on the forward edge of the wing of the breech-bolt to engage said antifriction-roller 59', which is mounted between lugs 62 62<sup>a</sup>, the purpose of which depression is to multiply the  
30 retracting energy in the operation of the gun.

Advantages are attained by employing the retractor 45, having its front end gradually reduced along the top edge to form a cam to coöperate with the roller 59' with a powerful  
35 wedging-lever action to withdraw the firing-pin. It will be noted that the retractor is not forked or bifurcated, but is reduced on a curved line from its upper edge forwardly to its front end, thereby forming the single point  
40 or reduced end. Difficulty is experienced in the operation of forked retractors by reason of the weakening of the spring controlling the same which permits the forked end of the retractor dropping so low that the upper arm  
45 of the forked end engages the front projection, thereby causing jamming of the action and preventing operation of the retractor.

The sear 63 is pivotally supported on the stud carrying the antifriction-roller 59', the  
50 opposite end of which is provided with a laterally-projecting pin 63<sup>a</sup>, arranged to engage a slotted opening 64 in the upper end of the trigger 65. The trigger is pivotally supported at 66 in the lower section of the frame and  
55 is spring-pressed by spring 68 to prevent rattling of parts and yieldingly hold the sear and trigger in their normal positions. The sear is provided with the usual engaging shoulder 82, and on one side and forward of  
60 such shoulder is provided with a downwardly and forwardly inclined edge having a recess or stop 70, forming the half-cock shoulder, as will be described. On the inner face of section *a'* of the breeching-lever I provide an irregular  
65 regular cam-surface arranged to ride on the

heel of the trigger to prevent premature discharge of the gun while the action is being closed. When the action is in closed position and the trigger is pressed back to release the firing-pin, the heel 68' of the trigger  
70 moves into notch 69 of the section *a'* of the lever 50.

For holding the gun at half-cock the shoulder 70 engages the extreme lower end of the firing-pin 43.  
75

For locking the action when the gun is loaded and ready for use I provide a locking-pin 71, pivotally mounted in the stock and provided at its inner end with a cam or projection 73, arranged to be swung into contact  
80 with the heel of the trigger, as clearly shown in Fig. 4. The locking-pin 71 is provided with an operating-finger 72 outside the gun and is held within a slotted tapering nut 75, having threaded engagement with one wall  
85 of the stock, whereby any tension desired on the rod may be secured by turning nut 75 to the right or left.

Assuming the action open and the magazine empty, when the parts will be in the position illustrated in Fig. 16 it will be understood that the cartridges are fed in the magazine through the opening 5 in position to be successively engaged by the breech-bolt, it being understood that the carrier-plate acts  
90 to successively project each cartridge into the path of the breech-bolt. As the breech-bolt advances in closing the action the front recess receives the head of the cartridge, the extractor 29 engaging the groove in said  
95 head. In closing the action the heel of the firing-pin is carried into engagement with the shoulder 82 of the sear by an upward movement of the breeching-lever, which contact arrests the forward motion of the firing-pin,  
100 and as the breech-bolt continues to advance toward the closing position the spring 39 is compressed ready to project the firing-pin into contact with the cartridge by depression of the trigger, which disengages the shoulder  
105 82 from the heel of the firing-pin. If it is desired to close the action and leave the gun half-cocked, it is only necessary to partially close the action until the firing-pin contacts with the shoulder 82 on the sear, when the  
110 trigger is operated to depress the sear and permit the end of the firing-pin to pass the shoulder 82 and engage the notch 70. If desired to wholly uncock the gun, the sear in the operation just described may be depressed to permit the firing-pin to wholly pass it, as will be understood. It is obvious that the action can be closed without cocking the gun by holding the sear depressed by the trigger, as the hand or finger lever is swung  
115 up to completely breech the bolt. To close the action with the firing-pin half-cocked, it is merely necessary to depress the trigger as the bolt is being breeched until the heel 43 slips past the shoulder 82 of the sear and  
120 125 130



then releasing the trigger so that the said heel will slide along the inclined edge of the sear and catch in notch 70.

The rear stock at its forward end is shaped to fit the inclined edges 77 77<sup>a</sup>, Fig. 13, at the side portions of the upper tang 34, and the stock is secured to and between the upper and lower tangs of the frame parts 4 4<sup>a</sup> by the screw 24, hereinbefore described.

The action may be locked in any situation of the parts by turning the rod 71 to project its cam end 73 into contact with the trigger, whereby to prevent operation of the trigger, as will be evident.

The gun may be used as a single loader, when desired, by forcing a single cartridge into position on the carrier-plate when the action is open.

What I claim is—

1. In a gun, a reciprocating breech-bolt, a firing-pin carried thereby and having a depending heel formed with a curved recess in its front edge, a retractor carried by the breech-bolt and formed with a single forwardly-projecting cam-finger, the rear end of the retractor adapted to engage said heel and move along said curved portion thereof to retract said pin, a projection on the rear wall of the receiver under which said cam-finger of the retractor is adapted to ride, substantially as described, mechanism for reciprocating the breech-bolt, and firing mechanism.

2. In a gun, in combination, a gun-frame provided with a horizontally-disposed anti-friction-roller, a reciprocating breech-bolt having a depending wing with a curved recess in its front edge adapted to engage and ride on said roller with a cam action, a breeching-lever coupled with said wing to reciprocate the breech-bolt, a firing-pin, and mechanism for actuating and controlling the same.

3. In a gun, in combination, a gun-frame having a breech-bolt chamber, a horizontally-disposed anti-friction-roller arranged at the front wall of said chamber, a reciprocating breech-bolt having a depending wing at its rear end, said wing at its front portion having a cam edge adapted to ride on said roller, a firing-pin having a depending heel, a retractor pivoted to said wing and having the rear end adapted to engage said heel and a curved front end adapted to ride on and extend under said roller, a sear, a trigger, and a breeching-lever connected with said wing.

4. In a gun, in combination, a gun-frame having a receiver, the rear wall of said receiver having lugs, a pin carried by said lugs, an anti-friction-roll mounted on said pin, a sear mounted on said pin, a trigger, a reciprocating breech-bolt having a depending wing at its rear end, a breeching-lever coupled with said wing to reciprocate the

bolt, a firing-pin having a depending heel, a retractor pivoted to said wing and adapted to engage said heel and having a forwardly-extending curved end to engage said roll, said wing also formed to engage and ride on said roll.

5. A magazine-gun having a reciprocating breech-bolt and a receiver, a firing-pin carried by the bolt, said pin being formed with a depending heel, a retractor arranged to cooperate with said heel and having a single forwardly-projected point, and a horizontally-disposed roller arranged at the rear wall of said receiver to engage the upper surface of said single point to depress the forward end of said retractor in the breeching action of the gun.

6. In a gun, the combination of the spring-actuated firing-pin having a rear depending heel, a sear having a shoulder to engage said heel and also having a forwardly-inclined surface with a notch in the same for receiving and holding said heel with the firing-pin in a half-cocked position, and mechanism for operating the sear and releasing it from said heel.

7. In a magazine-firearm comprising cocking and firing mechanisms, the combination therewith of a transverse rod at its inner end provided with a cam for engaging and locking the heel of the trigger and at its outer end having exposed operating means, and a tapering slotted nut in which the rod oscillates, substantially as set forth.

8. In combination, in a gun, a reciprocating breech-bolt at its rear end having a depending wing formed with a cam-slot, a breeching-lever having an arm extending beside one side face of said wing and provided with a lateral stud extending completely through said slot, said stud at its outer end having an enlarged head projecting over the opposite side face of the wing, for purposes substantially as described, and a firing-pin and its actuating mechanism.

9. In a gun, in combination, a frame having a lower tang, a transversely-arranged anti-friction-roller carried by said tang and projecting above the upper surface thereof, a reciprocating and vertically-movable breech-bolt having a wing provided with a cam-slot, a swinging breeching-lever having an arm provided with a stud working in said slot to operate the bolt, the free end of said lever having a projection adapted to engage and ride on said roller with a cam action, in the manner and for the purposes substantially as described.

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

EDWIN H. RISLEY.

Witnesses:

G. C. ELLIS,  
E. T. DE GIORGI.