(No Model.)

6 Sheets—Sheet 1.

W. MASON.

BOX MAGAZINE BOLT GUN.

No. 545,708.

Patented Sept. 3, 1895.

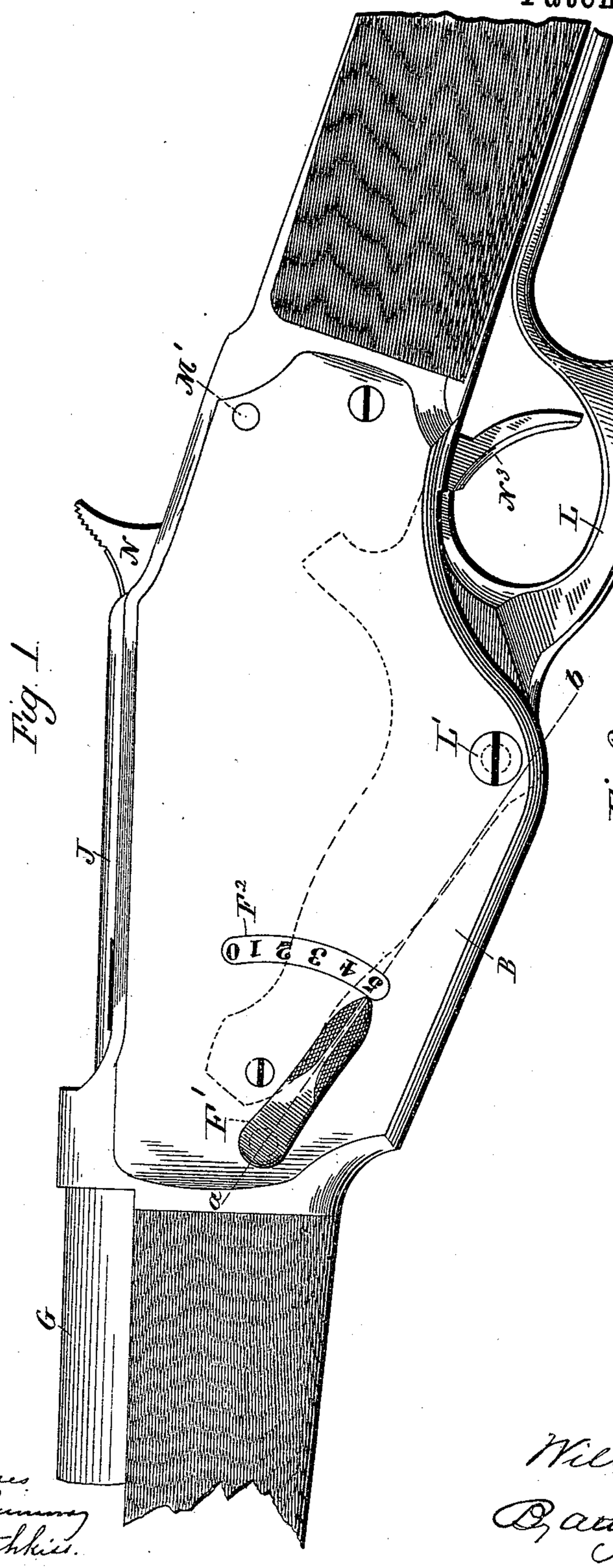

Fig. 1.

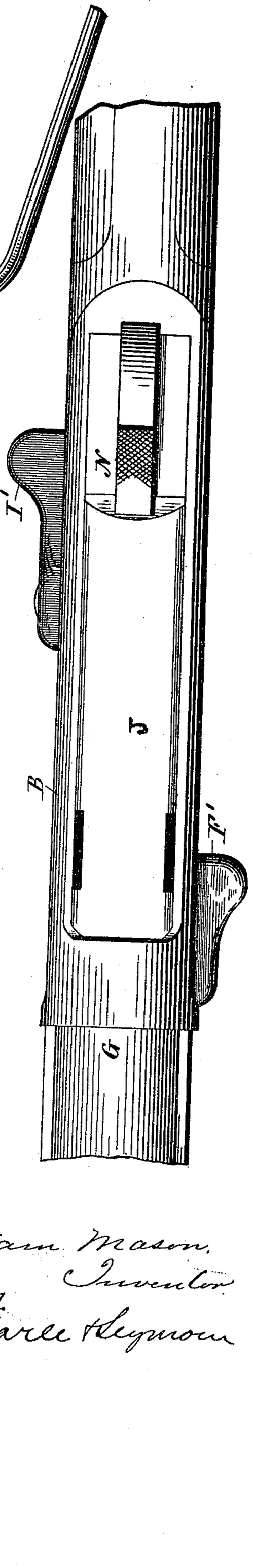

Fig. 2.

Witnesses
J. H. Shumway
A. S. Hotchkiss.

William Mason,
Inventor
By Atty's
Earle & Seymour

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BOX MAGAZINE BOLT GUN.

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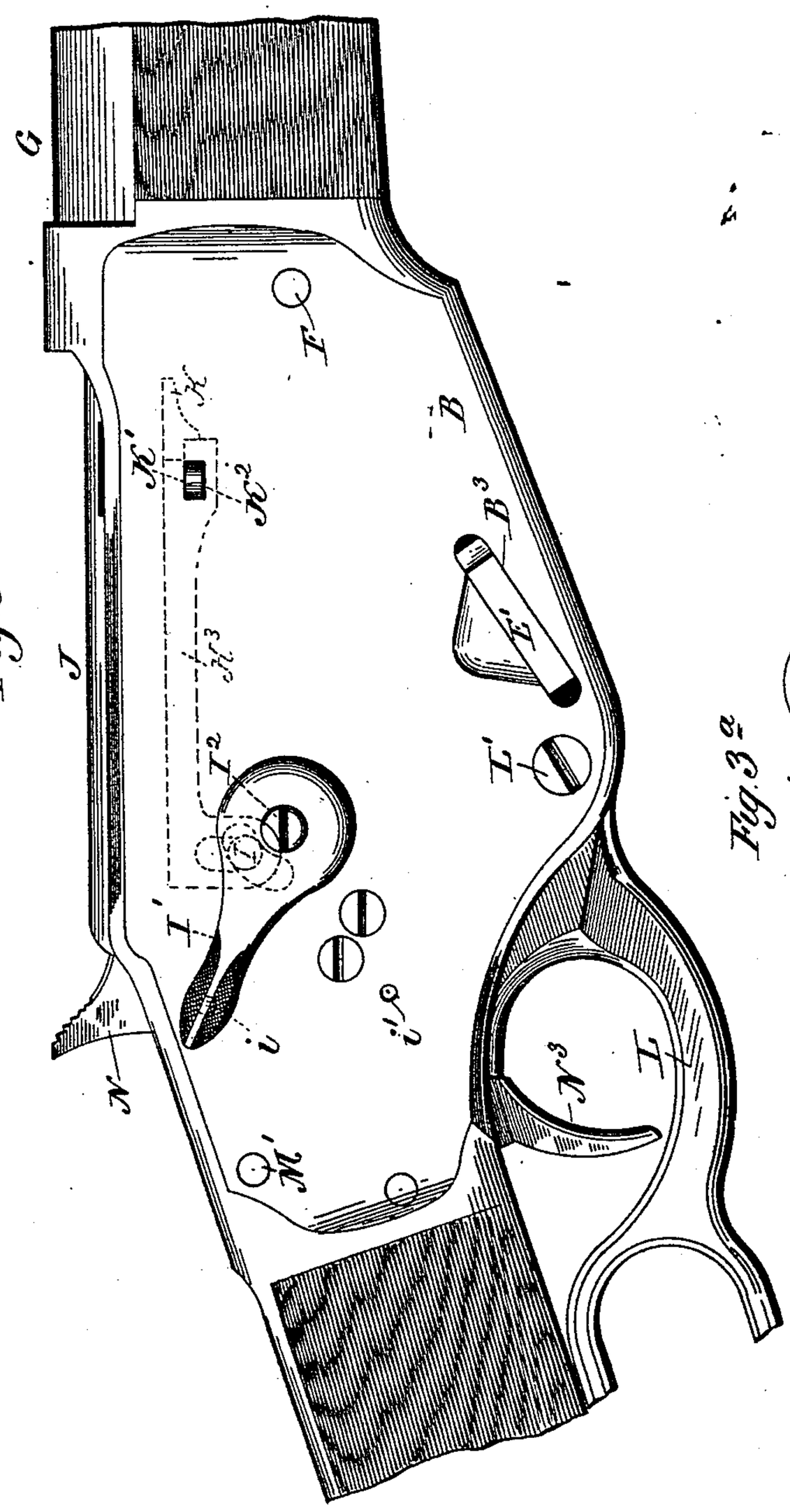
Fig. 3



Witnesses.
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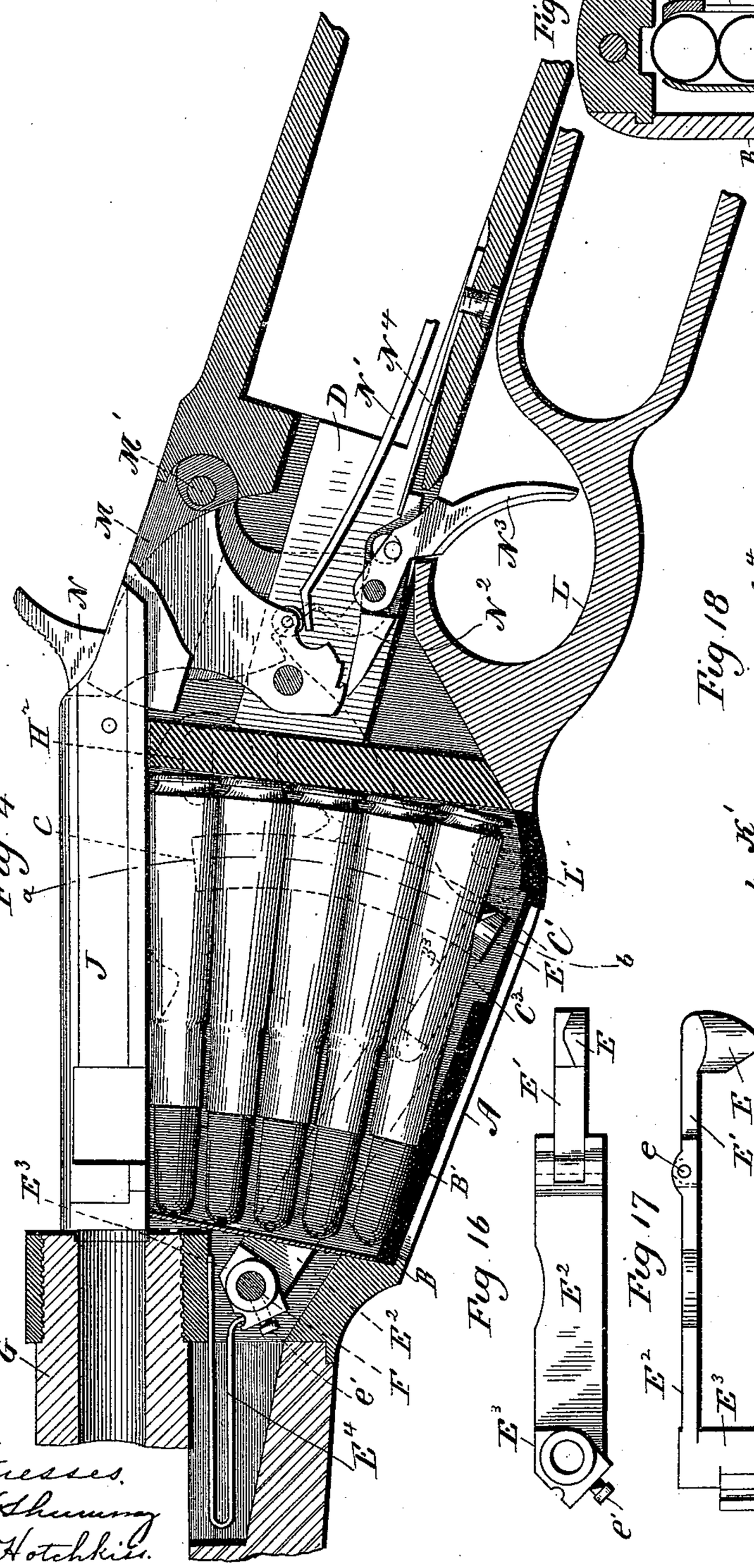

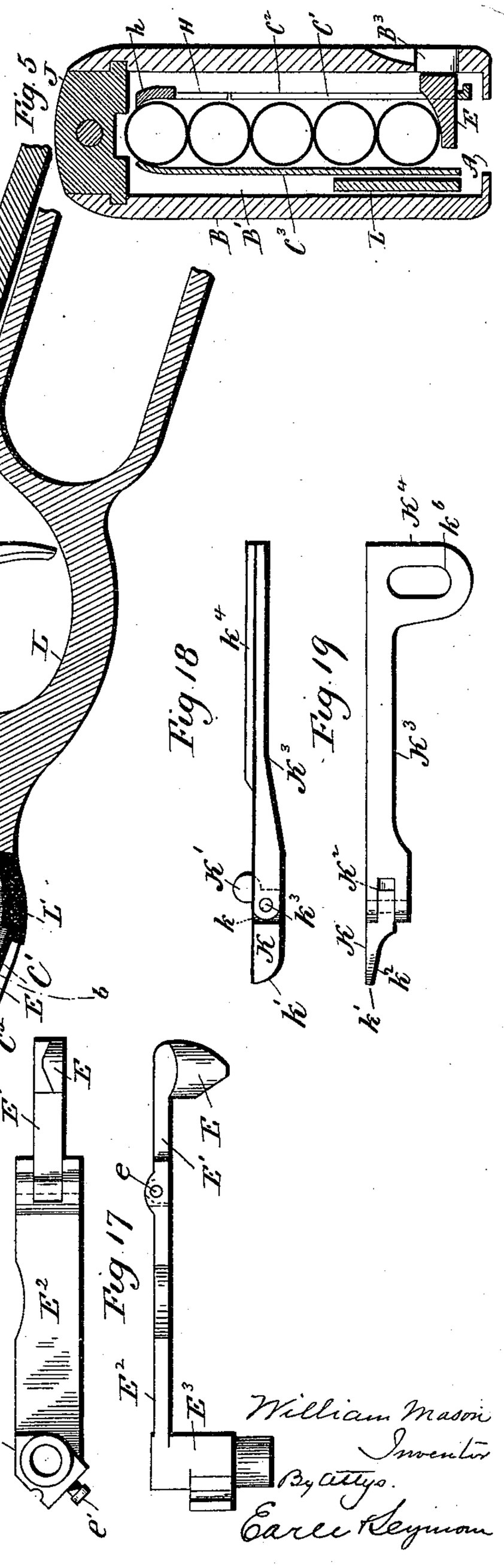

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W. MASON.

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Fig. 6

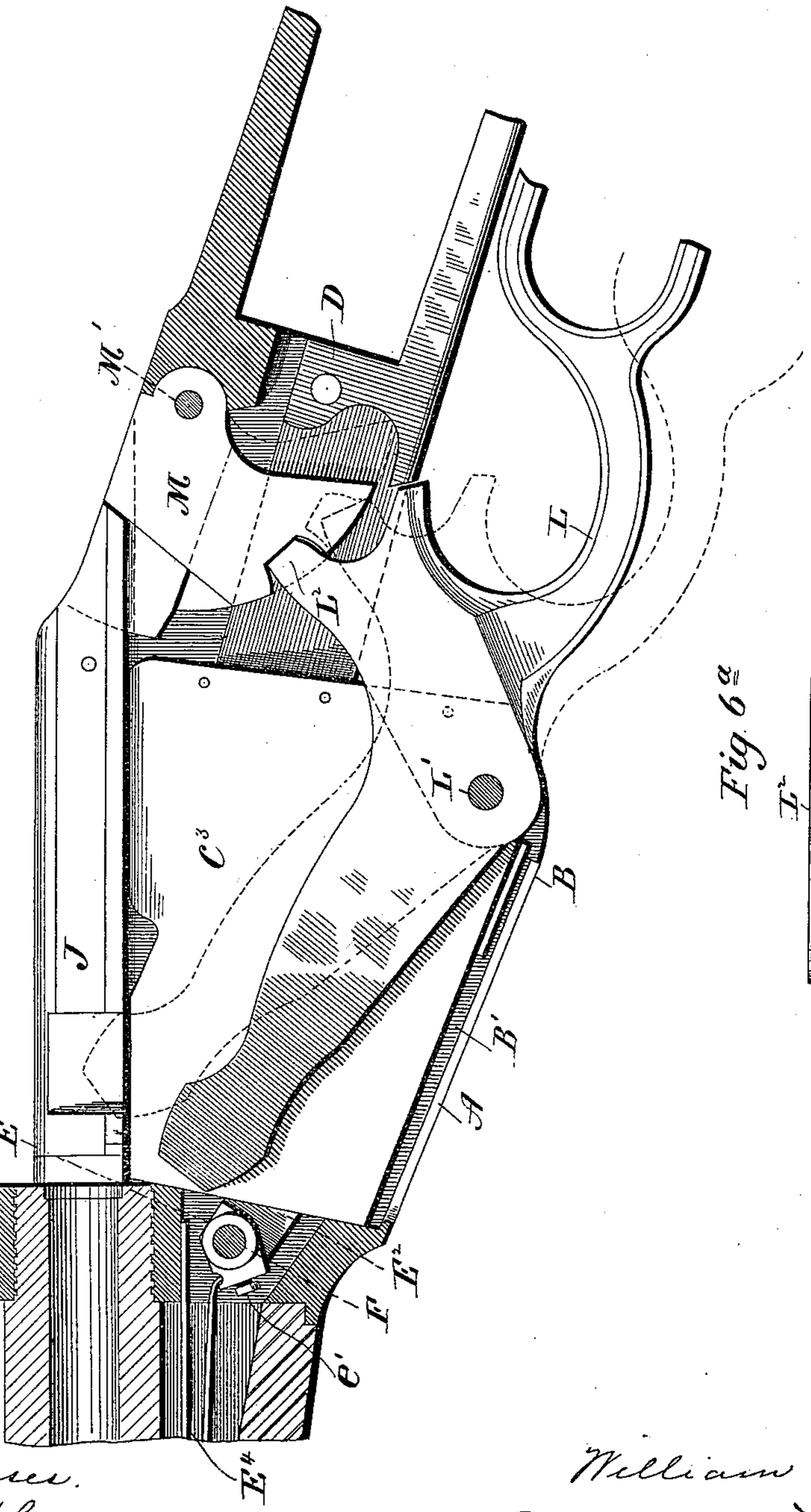
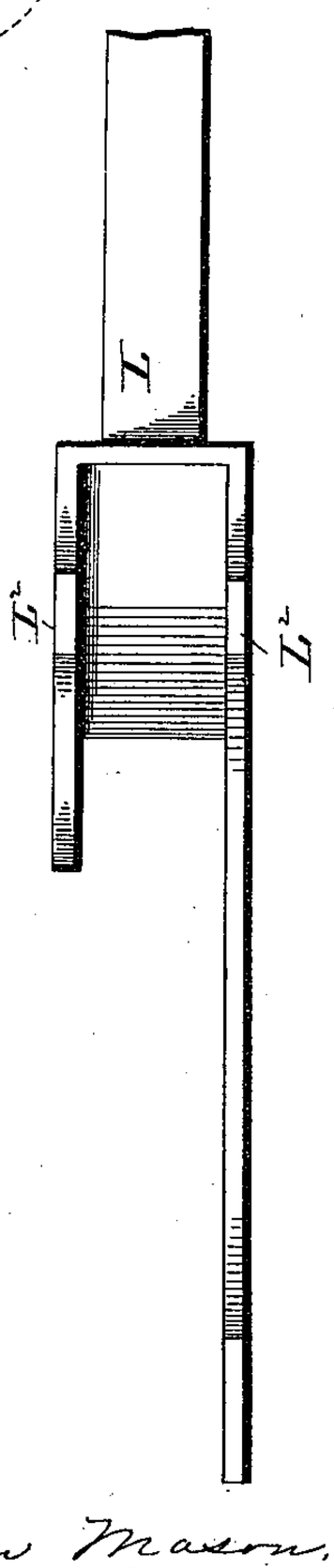


Fig. 6ª



Witnesses.
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(No Model.) 6 Sheets—Sheet 5.

W. MASON.

BOX MAGAZINE BOLT GUN.

No. 545,708. Patented Sept. 3, 1895.

Fig. 7

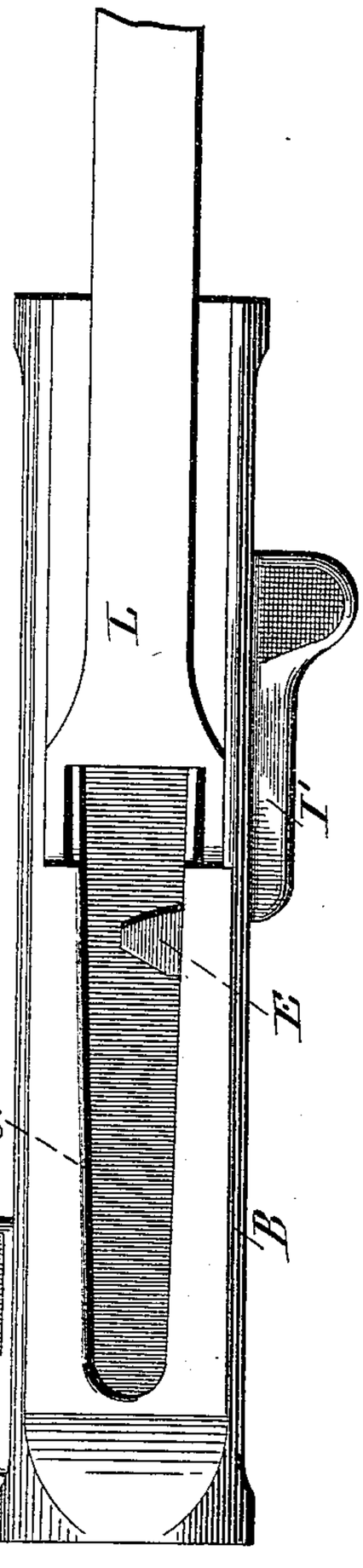


Fig. 10

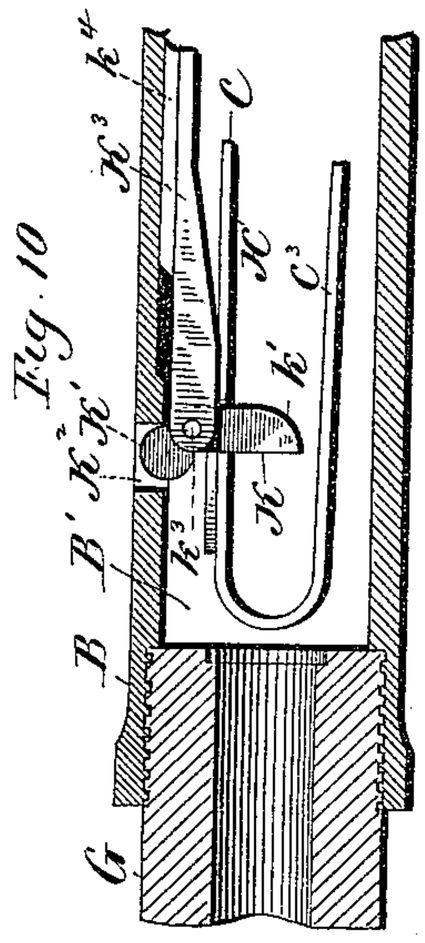


Fig. 8

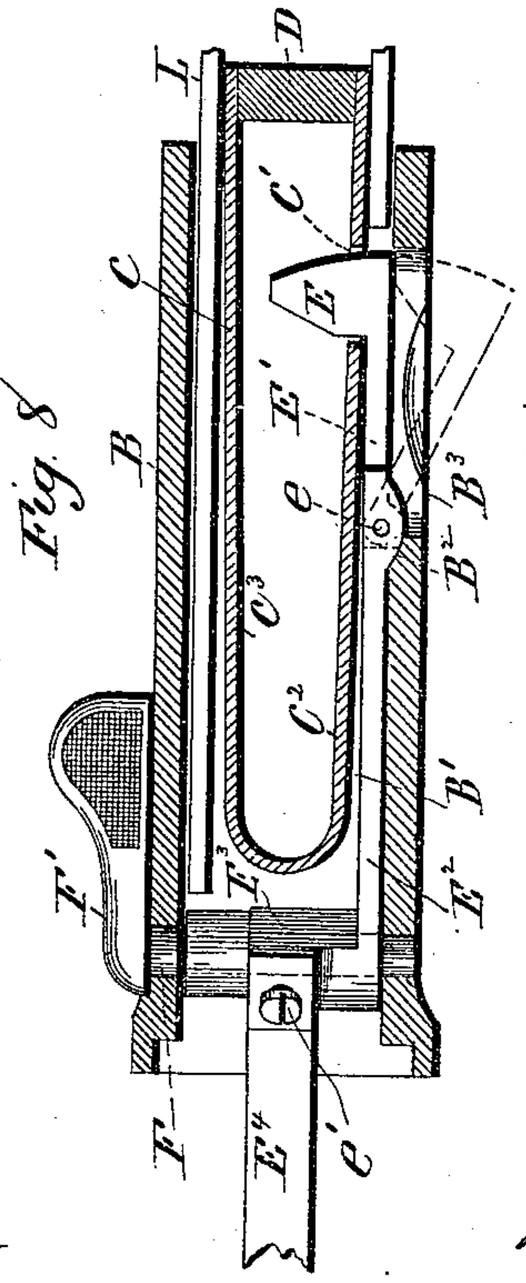
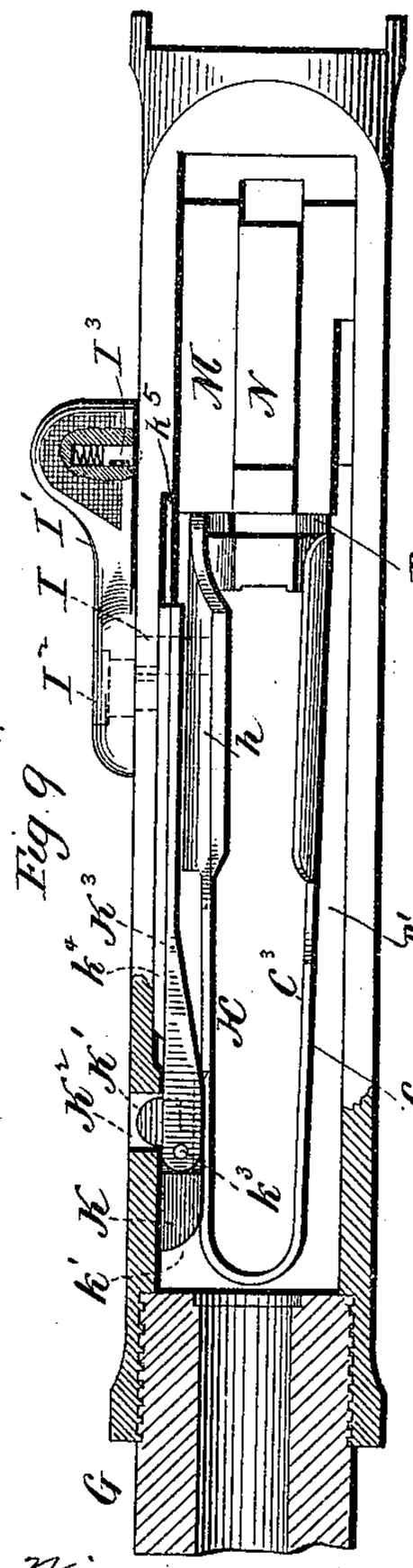


Fig. 9



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(No Model.)

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W. MASON.

BOX MAGAZINE BOLT GUN.

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Fig. 11.

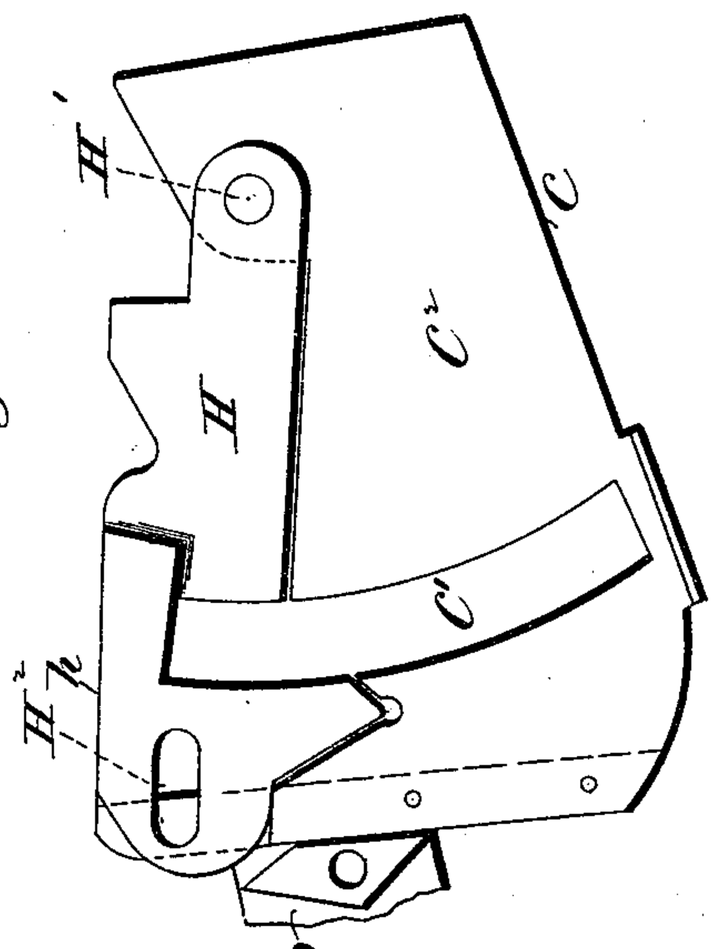


Fig. 12.

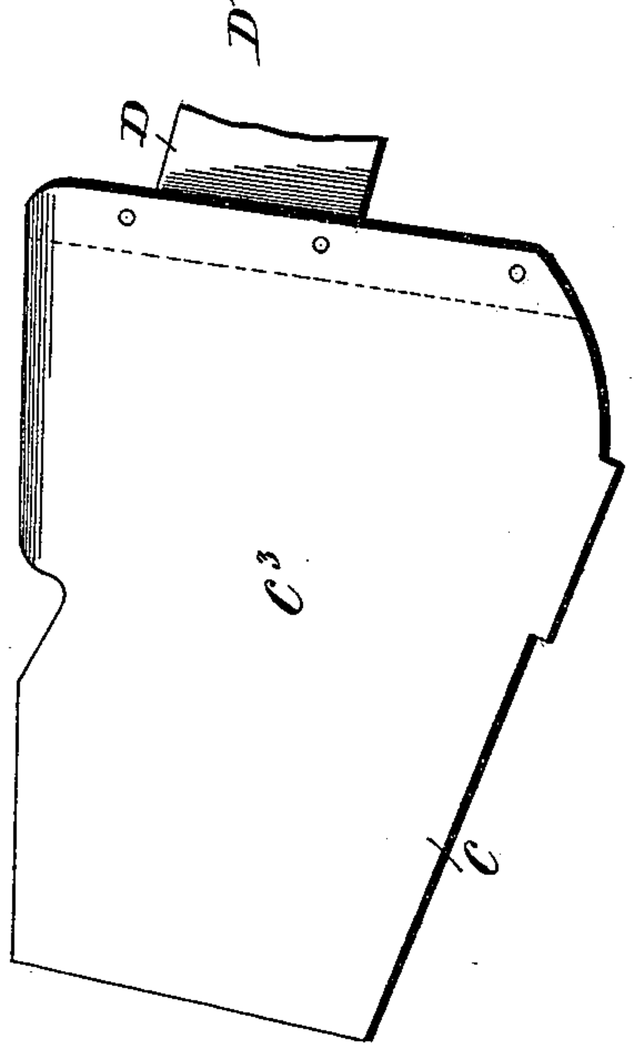


Fig. 14.

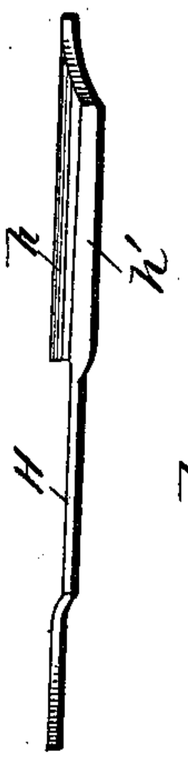
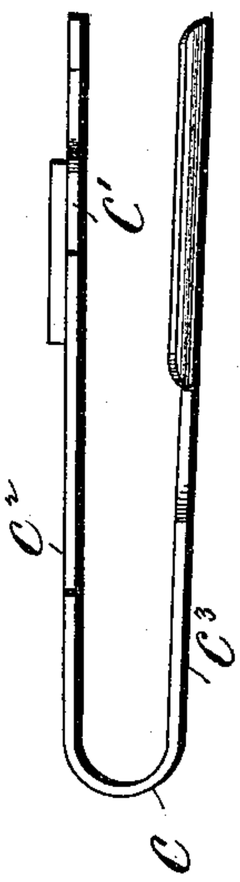


Fig. 15.

Fig. 13.



Witnesses.
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A. D. Hotchkiss.

William Mason,
Inventor
By attys
Earle Seymour

UNITED STATES PATENT OFFICE.

WILLIAM MASON, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE WINCHESTER REPEATING ARMS COMPANY, OF SAME PLACE.

BOX-MAGAZINE BOLT-GUN.

SPECIFICATION forming part of Letters Patent No. 545,708, dated September 3, 1895.

Application filed March 15, 1895. Serial No. 541,881. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MASON, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Breech-Loading Box-Magazine Firearms; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a broken view, in side elevation, of one form which a gun constructed in accordance with my invention may assume; Fig. 2, a plan view of the arm; Fig. 3, a view corresponding to Fig. 1, but taken from the opposite side of the arm; Fig. 3^a, a detached view, in side elevation, of the magazine cut-off thumb-piece; Fig. 3^b, a plan view of the same part; Fig. 4, a broken view of the arm in vertical longitudinal section, the arm being shown in its closed position; Fig. 5, a view of the arm in vertical transverse section on the line *a b* of Fig. 4; Fig. 6, a broken view, partly in side elevation and partly in vertical longitudinal section, showing in particular the coaction of the finger-lever and pivotal recoil-block; Fig. 6^a, a broken plan view of the finger-lever; Fig. 7, a broken reverse plan view of the arm; Fig. 8, a broken view of the arm in longitudinal section, and designed to show in particular the carrier in its normal and retired positions with reference to the box-magazine; Fig. 9, a similar view designed in particular to show the magazine cut-offs and the operating connections thereof; Fig. 10, a view corresponding to Fig. 9, but less comprehensive, and showing the forward magazine cut-off in its operating position; Fig. 11, a detached view, in side elevation, of the box-magazine, showing the pivotal plate forming the rear magazine cut-off and the segmental slot formed in the magazine for the reception and vertical movement of the carrier; Fig. 12, a view of the opposite side of the magazine; Fig. 13, a detached plan view of the magazine; Fig. 14, a detached plan view of the cut-off plate; Fig. 15, a view thereof in vertical transverse section; Fig. 16, a detached view, in side elevation, of the carrier and carrier-arm; Fig. 17, a similar plan view; Fig. 18, a detached plan view of the pivotal cut-off finger and slide; Fig. 19, a view thereof in side elevation.

My invention relates to an improvement in breech-loading box-magazine firearms, the object being to produce a durable and convenient gun constructed with particular reference to being used as a magazine or as a single-shot gun, to having its magazine charged from the bottom of the frame directly from the hand and without the use of packs made to be inserted into the frame, and to providing an indicator for indicating at any time the number of cartridges in the magazine.

With these ends in view my invention consists in the combination, with a chambered frame having a feeding-opening in its lower edge or bottom, of a box-magazine located within the chamber of the frame and having one of its side walls slotted, and a pivotal carrier normally extending into the box-magazine through the slot thereof, and a carrier-arm to the outer end of which the carrier is pivoted and which is located between the slotted side wall of the box-magazine and the adjacent side wall of the frame, whereby the carrier by swinging it on its pivot may be cleared from the box-magazine to give clearance to the feeding of cartridges thereinto through the opening in the bottom of the frame.

My invention further consists in the combination, with the box-magazine, of a carrier and an indicator connected with the carrier and exposed upon the outer face of the frame of the arm, which is provided with a scale to coact with the indicator to indicate the number of cartridges in the magazine.

My invention further consists in the combination, with a box-magazine, of a vertically-movable cut-off plate pivotally connected at its forward end to the box-magazine and forming a rear magazine cut-off and means projecting through the adjacent side wall of the frame for operating the said plate.

My invention further consists in the combination, with a box-magazine, of a forward cut-off comprising a pivotal cut-off finger, one end of which is adapted to be swung into the

magazine, while its opposite end works in a notch formed in the adjacent side wall of the frame, a slide in which the said finger is pivotally mounted, and means for operating the slide.

My invention further consists in certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In carrying out my invention, as herein shown, I form a tapering longitudinally-arranged central feeding-opening A in the lower edge or bottom of the frame B, at a point therein directly under the box-magazine C, which is supported in its fixed position within the chamber B′ of the said frame by means of the lower tang D, to which it is secured in any approved manner. As herein shown, the feeding-opening A is practically limited in size to the size of the cartridges to be fed through it, as that construction secures a better closure of the bottom of the frame; but, if desired, the opening at this point may be as large as the bottom of the chamber B′.

It will be apparent that in order to feed the cartridges directly into the opening some construction must be adopted which will permit the carrier to be retired during the feeding process, for otherwise the carrier would altogether prevent the introduction of the cartridges. I therefore employ a carrier comprising a tapered finger E and a stem E′, the said finger normally projecting inward into the box-magazine through a long segmental slot C′ formed in the side wall C^2 thereof, the other side wall C^3 of the magazine being practically unbroken, as seen in Fig. 12. The said finger E extends inward at a right angle from the rear end of the stem E′, which is itself located in that portion of the chamber B′ lying between the side wall C^2 of the magazine and the adjacent side wall of the frame. The forward end of the said stem E′ is pivotally connected by means of a pin *e* with a carrier-arm E^2, which plays up and down in the space between the side wall C^2 of the magazine and the adjacent side wall of the frame. The said carrier-arm is connected at its forward end with a hub E^3 mounted in the frame and receiving the spindle or shank F of the thumb-piece F′, which performs the twofold office of providing for the operation of the carrier against the tension of the carrier-spring E^4, and also of indicating the number of cartridges in the magazine at any one time by coacting with a numbered or other suitably-graduated scale F^2, applied to the outer face of the adjacent side wall of the frame, as shown in Fig. 1.

As shown in Figs. 16 and 17, it will be seen that the stem of the carrier is connected with the carrier-arm by a knuckle or stop joint, which limits the outward and inward pivotal action of the carrier.

A screw or pin *e′*, Fig. 8, is employed for binding the spindle F in the hub E^3.

The vertical movement of the carrier-arm is limited by the end walls of the segmental slot C′, formed, as aforesaid, in the box-magazine. A shallow concaved segmental groove B^2, formed in the adjacent side wall of the receiver and shown in Fig. 8, is provided for clearing the knuckle-joint just above mentioned.

The carrier-spring E^4 is located under the butt-end of the gun-barrel G, and takes at one end into a notch formed to receive it in the hub E^3 of the carrier-arm, as clearly shown in Fig. 4.

A narrow slot B^3, formed in the side wall of the frame adjacent to the carrier, is provided for clearing the carrier when the same is retired for charging the box-magazine, and also for holding the carrier in its retired position against the tension of its spring E^4 during the charging operation.

Having described the first and second features of my invention, I will now proceed to set forth the mode of operating the same. When it is desired to charge the box-magazine, the thumb-piece F′ is engaged by the thumb and pressed downward against the tension of the carrier-spring E^4 until the carrier-arm and carrier have been brought to the limit of their downward position, in which they are stopped by the lower end wall of the concaved segmental groove B^2, before referred to. At this time the carrier is aligned with the narrow opening B^3 in the adjacent side wall of the frame, and is also closely adjacent to the feeding-opening A. The finger or any small object held in the hand is then employed to swing the carrier out of the box-magazine and into and through the said slot B^3, as clearly shown in broken lines in Fig. 8. The thumb-piece F′ is now relieved of pressure, whereupon the spring E^4 will act to press the carrier against the upper wall of the slot B^3, whereby the carrier will be firmly held in its retired position. The box-magazine is now entirely unobstructed of the carrier and free for feeding the cartridges, which may be introduced directly into it from the hand or from a pack held in the hand; but in no case are cartridges introduced in packs into the frame, as it is one of the particular objects of my invention to avoid the use of packs made to be inserted into the frame. It will be understood that when the cartridges are being fed into the box-magazine the gun will be turned upside down. Now when the magazine has been fully charged a quick blow upon the projecting outer portion of the carrier drives the same back through the opening B^3 and causes its finger E to be shot into the box-magazine through the long segmental opening C′ thereof, or the carrier may be pushed back into the box-magazine by pressing upon it by the thumb or fingers instead of giving it a blow. As soon as the carrier is clear from the slot B^3 the carrier-spring B^4 reasserts itself and begins to exert a constant effort to raise the carrier through the length of the said slot C′

and lift the cartridges upward. Any upward movement of the carrier consequent upon the removal of a cartridge from the magazine will be accompanied by a corresponding movement of the thumb-piece, which as it moves over the outer face of the frame will indicate upon the scale F^2 thereof how many cartridges are in the box-magazine. I have shown a numbered scale; but any other scale which will answer the same purpose may be employed. The number of cartridges in the magazine may be quickly read at any time by glancing at the scale, which thus becomes a most convenient accessory of the arm.

With reference now to the third feature of my invention the same relates to rear and forward cut-offs for cutting off the box-magazine, as it were, to adapt the arm to be used as a single-shot arm and have the cartridges fed to the gun-barrel one by one from the top of the frame. In this way the charge of cartridges in the magazine may be held in reserve for emergencies.

The rear cut-off, which I will first describe, is designed to operate upon the heads and body portions of the cartridges, and employs a vertically-movable cut-off plate H, connected at its forward end with the side wall C^2 of the box-magazine by means of a horizontal pin H′, the said wall of the box-magazine being suitably cut away to receive the plate, which, in effect, forms a continuation of it and which contains a portion of the segmental clearance-slot C′, as shown in Fig. 11. At its rear end this plate has formed in it a horizontally-arranged slot H^2, which receives the inner end of an eccentric pin I, projecting inward from the inner face of a magazine cut-off thumb-piece I′, through a segmental clearance-slot B^4, formed in the adjacent side wall of the frame, as shown in Fig. 3. The thumb-piece I′ is located on the opposite side of the receiver from the thumb-piece F′, and is secured in place by a screw I^2. This thumb-piece is furnished with a friction-pin I^3, which springs into shallow holes *i* and *i′* for locking the thumb-piece in its elevated or normal position and its depressed or cut-off position. The upper edge of the cut-off plate H is turned inward, as at *h*. When the plate is in its normal position or in the position which it has when the cartridges are being fed from the box-magazine, its inwardly-turned edge *h* forms a guide for giving direction to the forward movement of the cartridges before the breech-bolt J, and in the discharge of this function corresponds with the inwardly-turned upper edge of the wall C^3 of the magazine; but when the cut-off function of the plate comes into play the said edge *h* has the office of drawing the uppermost cartridge in the magazine downward for such a distance that it will altogether escape engagement by the breech-bolt as the same is moved back and forth, and as long as the plate is held in its depressed position it will so hold the uppermost cartridge in the magazine. In this position of the plate, also, the flat upper face *h′* of its edge *h* forms a bearing upon which the single hand-fed cartridges in part rest preparatory to being pushed into the gun-barrel G. It will be understood that the required vertical movement is imparted to the plate by the eccentric pin I.

The forward cut-off, which operates upon the ball ends of the cartridges, employs, as constructed by me, a pivotal cut-off finger K, having a flat upper surface *k*, a beveled inner edge *k′*, and a concaved lower face k^2. The said finger is also constructed at its outer end with a circular operating projection or lug K′, which enters a small slot K^2, formed in the adjacent side wall of the frame and only large enough to receive it. The said cut-off finger is pivotally mounted on a vertical pin k^3 in the bifurcated forward end of a cut-off slide K^3, having its outer face constructed with a longitudinal rib k^4, which enters a corresponding longitudinal groove k^5, Fig. 9, formed in the side wall of the receiver, whereby the slide is supported in position and guided back and forth. At its rear end the slide is furnished with a depending lug or wing K^4, containing a vertically-arranged slot k^6, which also receives the eccentric-pin I of the cut-off thumb-piece I′. Normally the pivotal cut-off finger K is retired and stands in line with the slide, as shown in Fig. 9, with its circular operating-lug in the slot K^2, as also shown in this figure. When, however, the cut-off thumb-piece I′ is pushed downward into its depressed position, the pin I, acting in the slot k^6, draws the slide rearward, and inasmuch as there is no play in the slot K^2 for the lug K′ the pivotal cut-off finger is thrown around into a position in which it stands at a right angle with the slide and in which its beveled inner end extends into the box-magazine. As the finger swings around its concaved under face engages with the ball end of the uppermost cartridge and draws the same slightly downward and holds it in a depressed position. In this position of the finger also its flat upper face forms a bearing for the single hand-fed cartridges. Then when the cut-off thumb-piece is raised to its elevated or normal position, the slide will be thrown forward and the finger positively swung back into line with it and out of range of the cartridges in the box-magazine. It will be understood that inasmuch as both the rear and forward cut-offs are operated through the agency of the pin and thumb-piece their operation is simultaneous. By preference I employ these two cut-offs together and operate them simultaneously; but either may be employed to the exclusion of the other or without association with a coacting device, and, if desired, they may be operated separately. In many guns a rear cut-off is found to be sufficient.

It will be understood that I am not compelled to employ the several features of my invention in one gun, but that one or more of them may be employed, as found desirable.

I have not considered it necessary to de-

scribe the detailed construction of the arm in which I have embodied the several features of my improvement for purposes of illustration, and would have it understood that they may be used in any arms to which they are applicable. Of the specific arm shown I will only further add that its action mechanism is actuated by means of a finger or operating lever L, swinging on two centers L′, located in the side walls of the receiver. The said lever is constructed with two fingers L^2, which take into notches formed in an oscillating recoil-block M hung upon a horizontal pin M′, and lifted into position to lock the breech-bolt J in its closed position. The arm is also furnished with a hammer N, which plays in a bifurcation of the recoil-block, and is operated by a spring N′ and released by a sear N^2, which in turn is released by a trigger N^3, the sear having a sear-spring N^4.

In view of the various changes suggested and of others which might obviously be made I would have it understood that I do not limit myself to the exact construction and arrangement shown and described herein, but hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention.

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

1. In a breech-loading, box-magazine fire arm, the combination with a chambered frame, having a feeding opening in its lower edge or bottom, of a box-magazine located within the chamber of the frame and having one of its side walls slotted, a pivotal carrier normally extending into the box-magazine through the slot thereof, and a carrier-arm, to the outer end of which the carrier is pivoted and which is located between the slotted side wall of the box-magazine and the adjacent side wall of the frame, whereby the carrier, by swinging on its pivot, may be cleared from the box-magazine to give clearance to the feeding of cartridges thereinto through the opening in the bottom of the frame, substantially as set forth.

2. In a breech-loading, box-magazine fire arm, the combination with a chambered frame, having a feeding opening located in its lower edge or bottom, of a box-magazine located within the chamber of the said frame and having one of its side walls slotted, a pivotal carrier, consisting of a finger and a stem, of which the former normally extends through the said slot into the magazine, a carrier-arm located between the magazine and the adjacent side wall of the frame, and having the stem of the carrier pivotally connected with it, a carrier spring coacting with the said arm to lift the carrier, and a carrier thumb-piece connected with the arm and arranged to be employed for depressing the same and the carrier against the tension of the carrier-spring, substantially as set forth.

3. In a breech-loading, box-magazine fire arm, the combination with a chambered frame having a clearance slot formed in it, of a stationary box-magazine located therein and having one of its side walls slotted, a pivotal carrier, normally extending into the magazine through the slot therein, a carrier-arm located between the magazine and the adjacent side wall of the frame and having the carrier pivotally attached to it, a carrier-spring coacting with the said arm, and a carrier thumb-piece connected with the arm for depressing the same and carrier against the tension of the carrier-spring to bring the carrier into line with the said clearance slot which is formed in the adjacent side wall of the frame, substantially as set forth, and whereby the carrier when so depressed may be swung entirely out of the box-magazine and into the said slot in the frame.

4. In a breech-loading, box magazine fire arm, the combination with a chambered frame, of a stationary box magazine located therein and having one of its side walls slotted, a pivotal carrier, normally extending into the magazine through the slot therein, a carrier-arm located between the magazine and the frame and having the carrier pivoted to it, a hub for the said arm, mounted in the said frame, a carrier-spring acting through the said hub, and a carrier thumb-piece arranged upon the outside of the frame, and having a shank entering the said hub whereby the carrier and arm are depressed by the thumb-piece against the tension of the carrier-spring, substantially as set forth.

5. In a breech-loading, box magazine fire arm, the combination with a chambered frame, of a stationary box-magazine, having one of its side walls slotted, a pivotal carrier extending through the said slot into the magazine, a carrier-arm located outside of the magazine and between the same and one of the side walls of the frame, a carrier-spring, and means for limiting the upward and downward movement of the carrier-arm and hence the carrier, substantially as set forth.

6. In a breech-loading box-magazine fire-arm, the combination with a chambered frame, of a box-magazine located therein, a pivotal carrier normally extending into the box-magazine, a carrier-arm to the outer end of which the carrier is pivoted, and which is located between the box-magazine and the frame, an indicator connected with the said carrier-arm and exposed upon the outer face of the frame which is provided with a scale to coact with the indicator to indicate the number of cartridges in the magazine, substantially as described.

7. In a breech-loading, box-magazine fire arm, the combination with a chambered frame, of a stationary box-magazine located therein and having a slot in one of its side walls, a pivotal carrier normally projecting into the box-magazine through the said slot, a carrier-arm to which the carrier is pivoted, a carrier-spring for pressing the carrier against the cartridges in the magazine, a thumb-piece

connected with the carrier-arm and located upon the outside of the said frame, and a graduated scale located adjacent to the said thumb-piece, which coacts with it to indicate the position of the carrier in the magazine, and hence the number of cartridges therein, substantially as set forth.

8. In a breech-loading box-magazine fire-arm, the combination with a box-magazine, of a vertically movable cut-off plate pivoted at its forward end and forming a rear cut-off, a cut-off finger forming a forward cut-off, and means mounted in the frame of the arm for operating both of the said cut-offs, substantially as described.

9. In a breech-loading, box-magazine fire arm, the combination with a box-magazine, of a forward cut-off, consisting of a cut-off finger, and a slide in the forward end of which the finger is pivoted, and means for operating the slide forward and backward to change the position of the finger, which is normally in line with the slide but which is thrown inward at a right angle thereto and into the magazine in discharging its cut-off function, substantially as set forth.

10. In a breech-loading, box-magazine fire arm, the combination with a box-magazine, of a forward cut-off, consisting of a cut-off finger, having its outer end constructed with a circular lug, which enters a slot in the adjacent side wall of the frame, and of a slide, in the forward end of which the said finger is pivotally mounted; and means for operating the slide back and forth to retire the finger or bring it into operation, substantially as set forth.

11. In a breech-loading, box-magazine fire arm, the combination with a box-magazine, of a forward cut-off, comprising a cut-off finger, having a flat upper face, a beveled lower face, and a circular outer end, and a horizontal slide, in the forward end of which the finger is mounted; and means for operating the slide back and forth to shift the position of the finger, the circular outer end of which forms a fulcrum for its operation and enters a slot in the frame of the receiver, substantially as set forth.

12. In a breech-loading, box-magazine fire arm, the combination with a box-magazine, of a vertically movable cut-off plate, pivotally connected at its forward end with one of the side walls of the magazine and adapted at its rear end to form a rear cut-off, a cut-off finger forming a forward cut-off, a horizontally arranged slide, in the forward end of which the said finger is pivotally mounted, and a cut-off thumb-piece located upon the outside of the frame and provided with an eccentric pin connected with the plate and slide for their simultaneous operation, substantially as set forth.

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

WILLIAM MASON.

Witnesses:
DANIEL H. VEADER,
WILLIAM S. BALDWIN.