

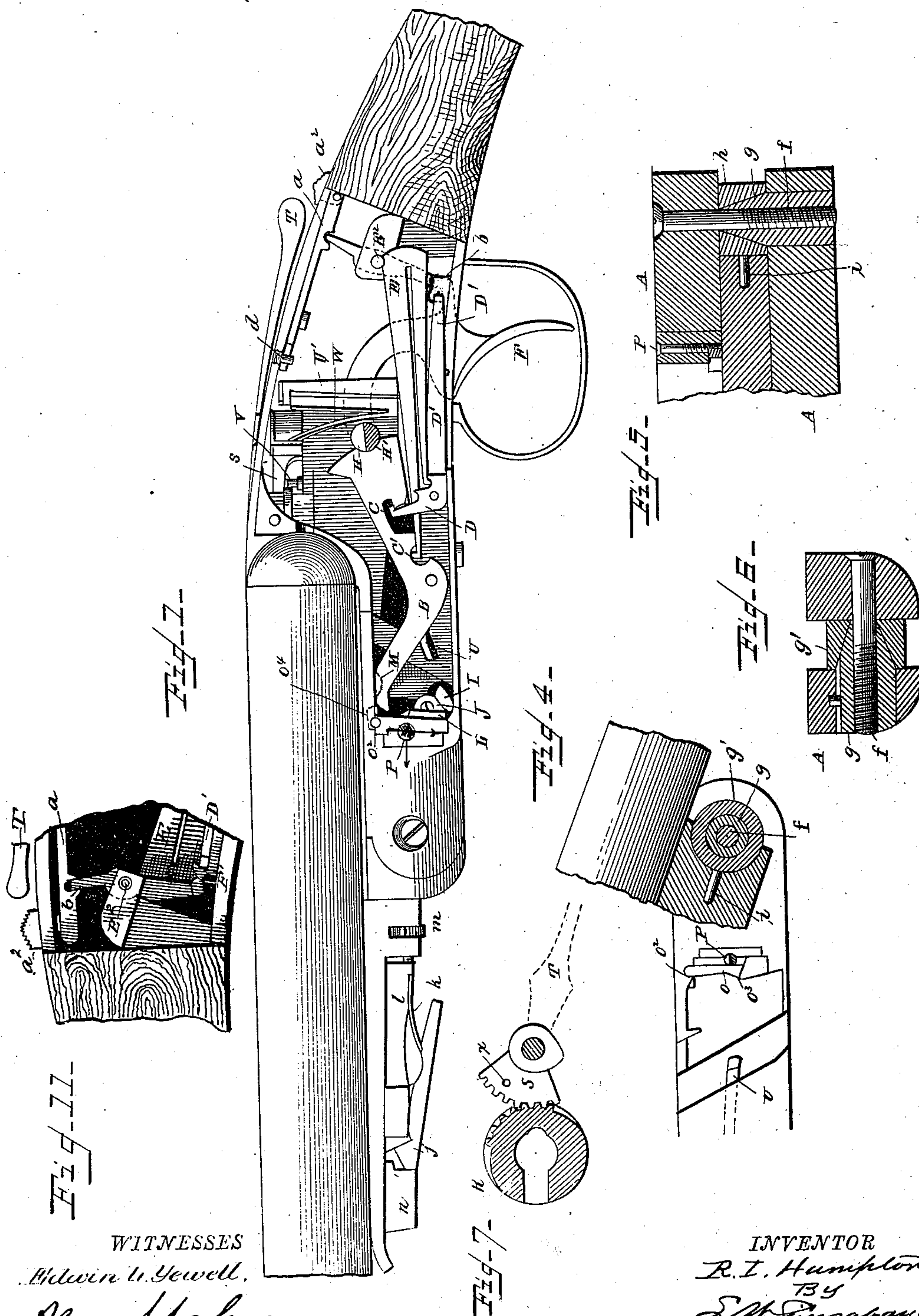
(No Model.)

2 Sheets—Sheet 1.

R. I. HAMPTON.
BREECH LOADING FIRE ARM.

No. 375,626.

Patented Dec. 27, 1887.



WITNESSES

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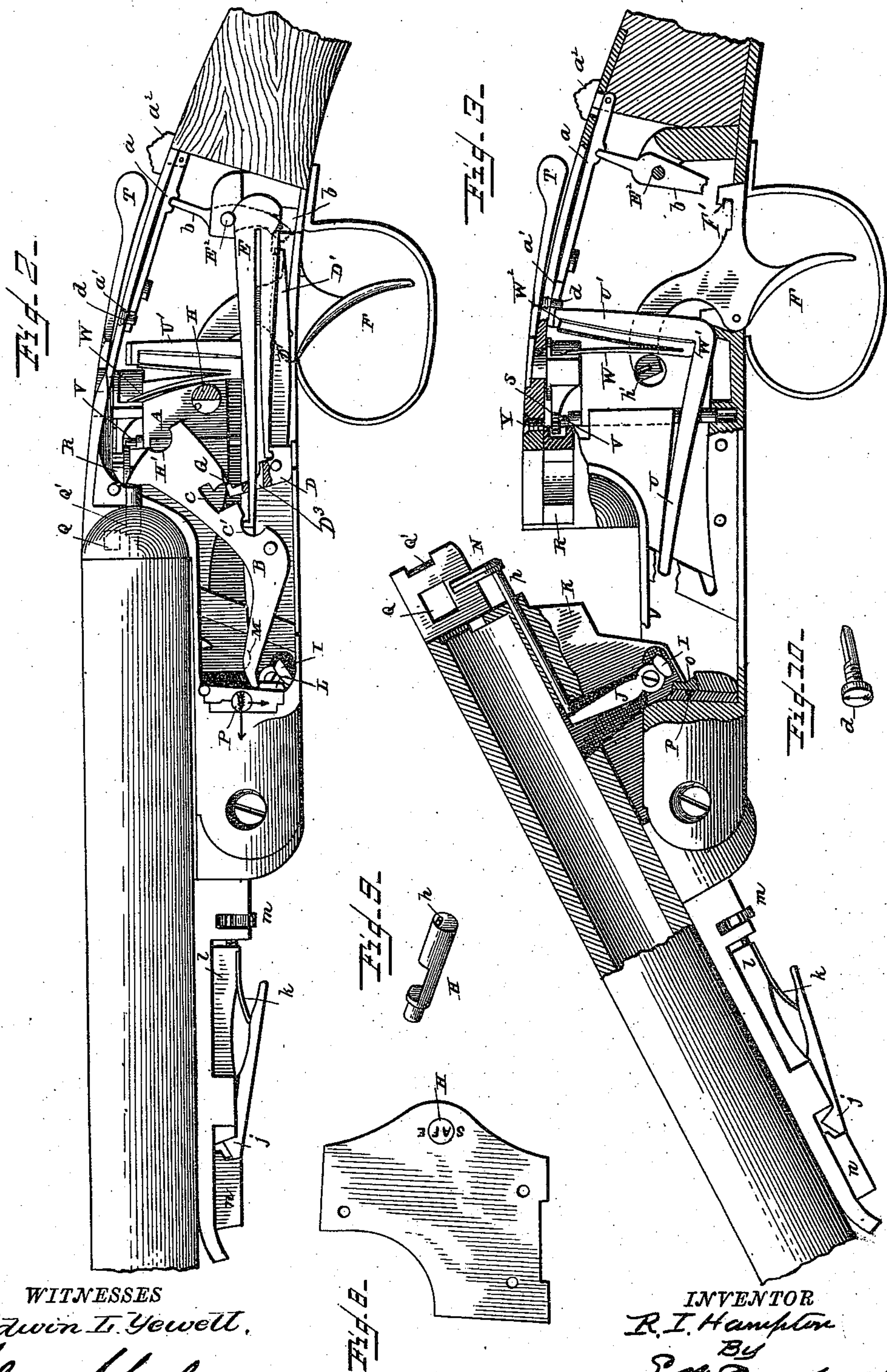
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ROBERT ISBELL HAMPTON, OF ATHENS, GEORGIA.

BREECH-LOADING FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 375,626, dated December 27, 1887.

Application filed May 21, 1886. Serial No. 202,930. (No model.)

To all whom it may concern:

Be it known that I, ROBERT ISBELL HAMPTON, of Athens, county of Clarke, State of Georgia, have invented certain new and useful Improvements in Breech-Loading Guns, of which the following is a full and exact description, reference being had to the accompanying drawings, making part of this specification.

My invention relates to improvements in breech-loading guns; and the objects of my improvements are, first, to provide a simple lock mechanism susceptible of being constructed with few parts and in a substantial manner, also embodying an automatic hammer-bolting feature; second, to afford means for ejecting the shell after the cartridge has been discharged, and also for making the ejector of each barrel act independently of the other; third, to employ a slotted annular bolt in locking the barrels to the standing breech; fourth, to provide an automatic trigger-bolting device which can be made independent at will; and, fifth, to supply the means of taking up lost motion from wear in the hinge-pin, fore-stock, and lock-fast action.

In the accompanying drawings, Figure 1 is a side view of the gun with the lock-plate removed, showing the parts in proper relation with the hammer at full-cock. Fig. 2 is a similar view with the parts in the position of rest or the position they assume after the hammer has engaged the firing-pin. Fig. 3 is a similar view with the hammer, main and sear spring, and the safety-indicating bolt removed, with the barrels elevated. Fig. 4 is a detached portion of the breech-frame, taken from the side opposite to that displayed in Figs. 1, 2, and 3, showing the pivotal connection between the barrels and breech in section. Fig. 5 is a vertical longitudinal section, and Fig. 6 a transverse vertical section, of what is shown in Fig. 4. Fig. 7 is a section of the annular locking-bolt and a top view of the segment-gear for operating the same. Fig. 8 is a side view of the lock-plate, showing the end of the safety-indicating and locking bolt. Fig. 9 is a perspective view of the bolt, showing the pin that engages the slot in the trigger-extension. Fig. 10 is a perspective view of the pin for holding the trigger-locking mechanism out of action; and Fig. 11 is a view of the rear portion of the breech-frame, taken

from the side opposite to that displayed in Figs. 1, 2, and 3, showing the rear extension of the sear, the trigger, and the safety locking-lever.

The breech is constructed to furnish a receptacle for the lock mechanism, and the hammer B, which is mounted therein, is provided between its pivotal point and heel with an angular notch, C, which notch is arranged at such distance from the pivot or axis as to cause the least amount of friction and consequent wear upon the sear, by which it is engaged. The notch C at its lower rear face is cut away to form an inclined surface, G, hereinafter referred to. The hammer is further provided between the notch C and the pivot with a notch, C', with which one end of the combined main and sear spring engages, and on its rear face with a semicircular notch or recess, H', to be engaged by the bolt H, also hereinafter referred to. The hammer B extends forward into the stock under the barrels, and at its forward end is provided with a cam projection, M, extending inward from its side face into position to be engaged by a cam, I, on the ejector-lever J, and by means of which the hammer is cocked or forced into position to be engaged by the sear D and engage with the safety locking-bolt H.

The ejector-lever J is pivoted to the projection K on the barrels, is so placed that its upper end will engage the rod *p* of the ejector N, and is provided below with an outward-projecting cam, I, before referred to. An angular switch-block, O, having its pivotal point at the angle, as shown at O², is provided at its lower or depending end with an inclined projection, O³, there being a horizontal arm, O⁴, extending rearward over said projection, and in such position that the toe of the hammer in being forced upward by the ejector-lever will engage the arm O⁴ and force and hold the inclined projection out flush with the face of the guide-block L, which facilitates the easy movement of the cam I of the ejector-lever on its return with the closing of the barrels. The switch-block O, consequent to the engagement of the toe of the hammer therewith, performs the additional function of preventing the mainspring from operating the ejector when the barrel has not been fired, for so long as the hammer B remains at full-cock the mainspring

E is prevented from operating the ejector-lever, and, as a consequence, when it is desired to remove an unfired cartridge, on opening the barrels the same will only be presented or forced out far enough to be removed by the fingers. A switch, P, is employed to accomplish the same end when it is desired to save the empty shells, which consists of a pin passing through from the side of the breech-frame and having that portion adjacent to the switch-block made in semicircular form, and by turning either the rounded or the flattened face toward the switch-block the ejector is permitted either to act forcibly to eject the shells or simply to push them out sufficiently to be removed by hand. The head of this switch P is exposed through the side of the breech-frame and is marked with an arrow-feather or other suitable device, and the breech-frame is marked with two arrow-heads at right angles to each other, or other suitable devices, by which the operator can readily ascertain the position of the switch and set the same in the position desired.

By setting the feathered portion of the arrow shown in line with the head on the side of the breech-block pointing downward the rounded surface of the pin will be brought opposite the switch-block, and consequently hold the same out and prevent the ejector-lever from being thrown its full extent by the action of the mainspring; but when it is desired forcibly to eject the shells the pin is turned to present the cut-away portion opposite the switch-block, which will allow the switch full play, and in this way, as each barrel is provided with a separate ejector and an independently-operating spring, it will be seen that either or both barrels may be converted into a non-ejector at will.

The sear D is mounted in the breech-frame in position to engage the hammer, and is provided with a suitable notch to engage one end of the combined main and sear spring E, the other end, which engages and operates the hammer, passing through a mortise or slot in the sear, causing the sear to act as a cramp-link for said spring. The sear has a rear extension, D', engaging a notch formed in a rear extension of the trigger. The hammer having been cocked or caused to engage with the sear, as before stated, is released therefrom by the trigger F, by pulling which the sear is made to slip out of the bent notch C in a manner that will be readily understood, and the force of the mainspring E carries the hammer forward until it nearly reaches the firing-pin, when the force of the mainspring is arrested by the mortise in the sear acting as a cramp-link, as before stated, the hammer being carried forward by its momentum until it strikes the firing-pin. In this movement, the point of the sear having passed off the arc leading to the bent notch in the hammer resting against the inclined surface at G, before referred to, both ends of the spring are exerted in forcing the

point of the sear back over the inclined surface G, causing the hammer to rebound and stand with its engaging-faces slightly back from the head of the firing-pin. A tubular bolt, H, is employed to engage the semicircular recess H' in the hammer to form a safety-lock to the hammer. This bolt H is notched at the point where it engages the hammer, and is provided on its inner end with a crank-pin or projection, h, which engages a slot, h', formed in the end of an upward-curved extension of the trigger, and by which said bolt is rotated to engage the hammer or release the same. When the bolt is rotated to engage the hammer, the semicircular face or unbroken surface of the bolt is caused to rest in the notch and securely bolts the hammer against accidental discharge; but when the trigger is pulled it causes the bolt to be rotated and turns the notched portion into line with recess, so that the hammer is left free to be acted upon by the spring. The outer end of the bolt H passes through the lock-plate, where the word "safe" or any other word or device indicating this fact is stamped, which indicates that the hammer is locked, the letters A F being cut in the end of the bolt and the letters S E on the lock-plate, one on each side, and in such manner that when the hammer is locked the letters on the bolt will be in line with those on the plate and when not bolted the letters will be out of line. The barrels are locked or released by means of a slotted annular bolt, R, having gear-teeth cut in its rear face to be engaged by a sector, S, which sector is rigidly connected with and in turn operated from a top lever, T. The bolt R engages a slot and mortise cut in a rib extending rearward from the barrels, as shown in Figs. 2, 3, and 7.

The trip-lever U is made in angular form and has connected to its upright portion a V-shaped spring-arm, W, having one point of support, W', at the angle of the lever and the other, W'', at the upper end thereof, the end of the spring engaging a depression or notch formed in the rear face of the annular bolt R.

A sliding bolt or trip-rod, V, is mounted in bearings in the breech-frame and is connected and operated from the forward-extending arm of the lever U, the bolt being adapted to engage a perforation or hole, X, in the sector S. The trip-lever U is always under tension, and is forced down and held by the projection K on the barrels when closed; but when the lever is turned to operate the sector, and through it the bolt R, the rear upper end of the trip-lever V is forced backward by the tension of the spring, raising the forward-extending end, and consequently the sliding bolt or trip-rod V, and causing the same to engage the perforation X in the sector; which has by the movement of the lever been brought over the point of the trip-rod, and which serves to hold the annular slotted bolt open until the projection K depresses the trip-lever U in closing the barrels to withdraw the rod V from the hole,

which action allows the spring W, acting on the sector, to force the bolt R home and lock the barrels securely.

A set-screw, Y, is employed to engage the annular bolt and take up lost motion from wear thereon. This screw Y passes through a threaded perforation in the top of the breech-frame in position to engage the upper face of the annular bolt, and as said bolt or its supporting-face wears the screw can be turned in to compensate for any lost motion consequent thereto.

In the upper portion of the breech-frame is mounted a sliding plate, *a*, notched at its forward end, as shown at *a'*, and having at its rear end a thumb-piece, *a''*, extending through the frame. A trigger-bolt, *b*, pivoted about centrally of its length, engages at its upper end the sliding plate *a*, and has its lower end extending down into position to engage a rear extension of the trigger. This mechanism is used automatically to lock the trigger against accidental displacement, and is operated in the following manner:

The backward movement of the upward-extending arm of the trip-lever U as the gun is being opened forces the sliding plate backward, which plate, engaging the trigger-bolt *b*, forces the lower end over the rear extension of the trigger, the said end being simultaneously depressed by the engagement of the rear extension of the sear therewith, and in this position is held and locked until released by the operator through the thumb-piece *a''*. This automatic feature may be regulated at will by means of a segmental pin, *d*, which is arranged in such manner as to be adapted to engage the rear face of the trip-lever U and hold the same from engaging the sliding plate *a*, and thereby prevent the operation of the trigger-bolt. The head of the pin is marked with an arrow where it extends through the breech-frame under the lever T, so that the operator can tell how to set the pin.

The thumb-piece *a''* may be used to lock the trigger at any time when the gun has been cocked without the use of the automatic arrangement.

The trigger-bolt *b* is held firmly in position, locked or unlocked, by the closed end of the spring E resting against the under side of the trigger-bolt spindle *E''*, and from this, in connection with previous description, it will be seen that the mainspring performs the work of six springs ordinarily employed—viz., first, that of a hammer-spring; second, through the hammer, that of an ejector-spring; third, that of a sear-spring; fourth, through the sear, that of a trigger-spring, and, fifth, through the trigger which operates the hammer-bolt, it acts also as a hammer-bolt spring, while, sixth, it also, as above stated, holds the trigger-bolt spindle locked or unlocked.

The hinge device, Figs. 4, 5, and 6, consists of a threaded bolt, *f*, to engage a nut, *g*, having a tapering or cone-shaped end and a hollow

sleeve, *g'*, having its opening made tapering or cone-shaped, and a pin, *i*, projecting from its outer face, forming a lever to engage a hole in the projection K on the barrels to cause the sleeve *g'* to rotate with the barrels, throwing all the friction and consequent wear upon the two cone-surfaces, which wear can be readily compensated for by turning the screw *f* and drawing the cone-shaped nut *g* into the hollow sleeve. The fore-stock fastening consists of a pawl, *j*, operated by a spring, *k*, both mounted on an adjustable bar, *l*, connected to a supporting or locking frame, which engages with the stock and with a lug or projection, *n*, on the barrels.

Lost motion caused by wear between the pawl *j* and the projection *n* may be compensated for by turning a nut, *m*, which engages a screw-thread formed on the end of the bar *l*, which adjusts said bar longitudinally.

Having now described my invention, I claim—

1. The combination, in a breech-loading gun, of the hammer, the sear, the combined main and sear spring, the hammer provided with a recess in its rear edge, a notched bolt for automatically engaging the hammer and the trigger connected to the notched bolt through a slot in an upward-curved extension in the same, and a pin on the bolt for oscillating said bolt to release the hammer, substantially as described.

2. In a breech-loading gun, the combination of the hammer provided with the inclined notch in its lower side to be engaged by the sear, and with a semicircular recess in its rear face to be engaged by the bolt, said hammer extending forward under the barrels, the ejector cam mounted on the projection K of the barrels, provided with the cam-face, the trigger provided with the curved slotted extension, the slotted bolt to engage the hammer, provided with the pin to engage the slot in the trigger-extension, and a combined main and sear spring, all arranged and operating substantially as described.

3. The combination, in a breech-loading gun, of the hammer provided with the opening having a notch, C, in its rear end and inclined surface G, the sear D, engaging with said notch, the combined main and sear spring, and the trigger having an extension for engaging and operating the locking-bolt H, which engages a notch in the hammer when the gun is cocked to cause the same to release the hammer, as set forth.

4. The combination, with the hammer having the projection M formed on its forward upper end, the ejector-lever pivoted to the lump of the barrels and provided with the cam projection at its lower end, the ejector N, guide-block L, and switch-block O, thrown into operative position by the toe of the hammer and switch-pin P, mutilated in cross-section, arranged and operating substantially as described.

5. The barrels provided with the rearward-extending rib having the mortise *Q* and slot *Q* formed therein, with the slotted annular bolt *R*, for engaging said rib-extension, provided with teeth on its outer periphery, the sector *S*, engaging the same, and lever *T*, for operating the sector, substantially as described.

6. The barrels provided with the rearward-extending rib having the mortise and slot formed therein, in combination with the slotted annular bolt *R*, engaging the same, sector *S*, secured to the top lever, *T*, and engaging with teeth on the annular bolt, the spring *W*, acting on the lever *T*, and trip-lever *U*, pressing against the spring and operated by the rear lump of the barrels, and the rod *V*, resting upon and operated by the trip-lever to engage the toothed sector of the top lever, substantially as set forth.

7. The barrels provided with the rearward-extending rib having the mortise and slot formed therein, in combination with the slotted annular bolt *R*, sector *S*, secured to the lever *T* and engaging with teeth on the annular bolt, and the screw *Y*, seated in the top of the breech-frame for adjusting the annular bolt to compensate for lost motion or wear thereof, as set forth.

8. The combination, with the hammer and sear, the rear portion of the sear extending back to and engaging a rear extension of the trigger, of the bolt *b*, pivoted above the same to swing into engagement therewith, and the sliding plate engaging the bolt *b*, actuated by the lever *U*, to lock the trigger automatically, substantially as described.

9. The combination, with the hammer and sear, the rear portion of the sear extending back to and engaging a rear extension of the trigger-plate, of the bolt *b*, pivoted above the same to swing into engagement therewith, the sliding plate engaging the bolt to operate the same, the lever *U*, for actuating the plate as the gun is cocked, and a pin located in the breech-frame to engage the forward end of the plate and hold the lever from engaging the

plate, substantially as and for the purpose described.

10. The combination of the barrels provided with the projection *K*, the stock provided with the slotted end, the ring or sleeve fitting between the ends, having the tapering opening extending through the same, the cone-shaped nut adapted to engage the sleeve, and the threaded bolt passing through the sleeve and engaging the nut, substantially as and for the purpose set forth.

11. The combination of the barrels provided with the projection *K*, having the perforation formed therein, the stock provided with the slotted end, the ring or sleeve fitting between the ends, the pin extending therefrom to engage the perforation in the projection *K*, the cone-shaped nut to engage a cone-shaped opening in the sleeve, and a threaded bolt passing through the sleeve to engage the nut, all substantially as described.

12. The combination of the stock, the barrels having the projection *n* formed thereon, the separate locking-frame slotted at its outer end to engage the projection and at its inner end curved to engage the forward part of the breech-frame, the bar *l*, mounted therein, and a pawl *j*, mounted on the bar to engage the projection on the barrels to hold the barrels connected with the stock, as set forth.

13. The combination of the stock, the barrels having the projection formed thereon, the separate locking-frame slotted at its end to engage the projection and at its inner end curved to engage the forward part of the breech-frame, the bar *l*, mounted on the locking-frame, the pawl *j*, mounted on the bar to engage the projection on the barrels, and the adjusting-nut *m*, engaging a screw-thread on the rear end of the bar for adjusting said bar endwise, substantially as described.

ROBERT ISBELL HAMPTON.

Witnesses:

J. S. WITHFORD,
A. E. GRIFFETH.

Corrections in Letters Patent No. 375,626.

It is hereby certified that in Letters Patent No. 375,626, granted December 27, 1887, upon the application of Robert Isbell Hampton, of Athens, Georgia, for an improvement in "Breech-Loading Fire-Arms," errors appear in the printed specification requiring the following corrections: On page 2, in line 70, the word "tubular" should read *tumbler*; in line 112, the words and reference letter, *sector S to bring pressure against*, should be inserted before the word "annular," and in line 123, the reference letter *V* should read *U*; and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 31st day of January, A. D. 1888.

[SEAL.]

Countersigned:

BENTON J. HALL,

Commissioner of Patents.

D. L. HAWKINS,
Acting Secretary of the Interior.

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