(No Model.) 5 Sheets—Sheet 1.

J. M. BROWNING.

MAGAZINE FIREARM.

No. 550,778. Patented Dec. 3, 1895.

Fig. 1.

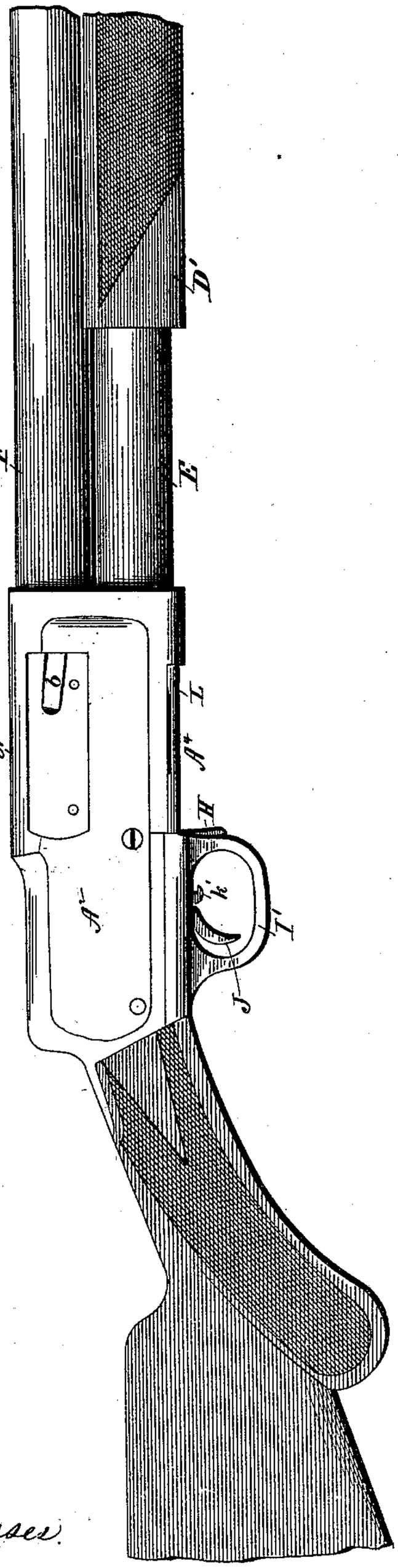
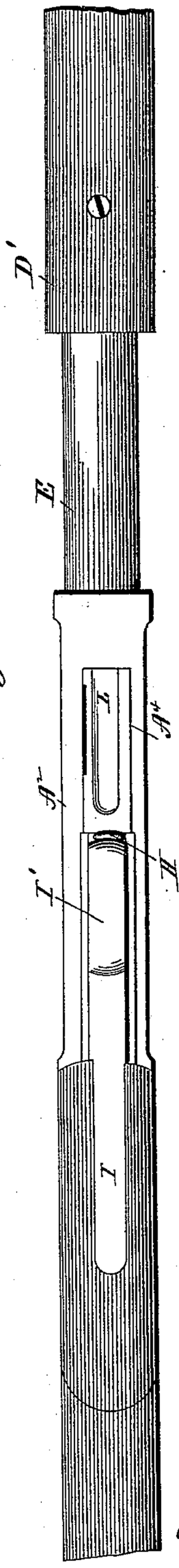


Fig. 2.



Witnesses:
J. H. Shumway
Lillian D. Kelley

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By Ally. Earle Seymour

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J. M. BROWNING.

MAGAZINE FIREARM.

No. 550,778. Patented Dec. 3, 1895.

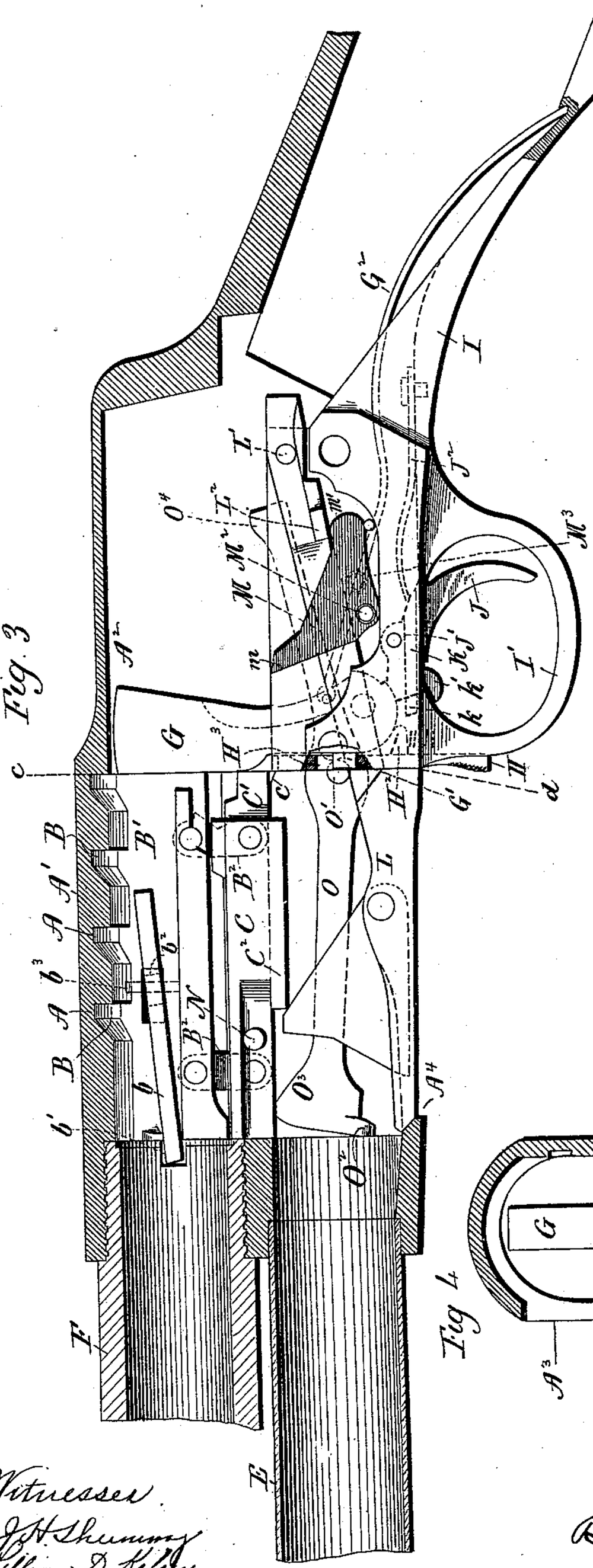

Fig. 3

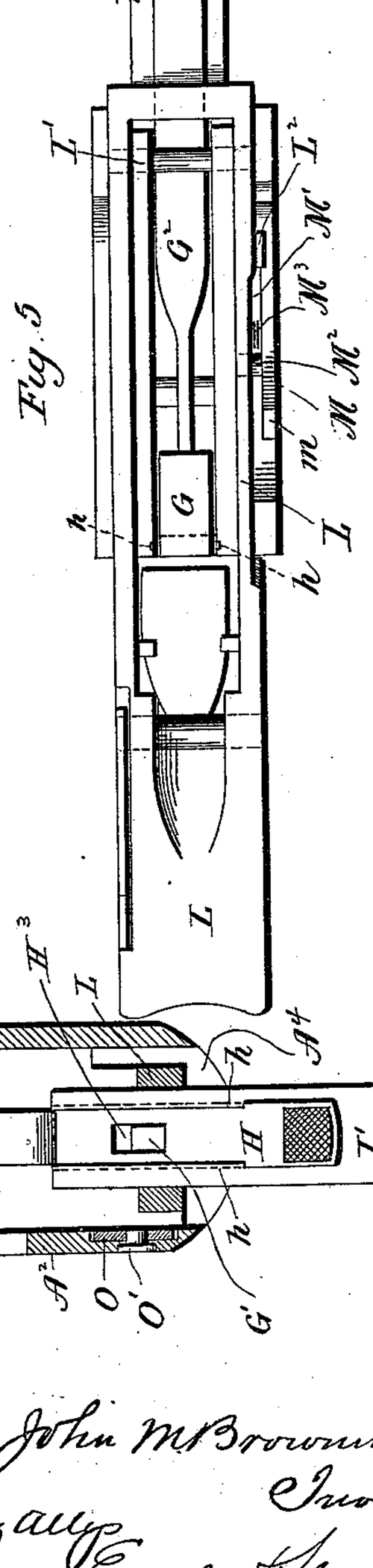

Fig. 5

Fig. 4

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(No Model.) 5 Sheets—Sheet 3.

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MAGAZINE FIREARM.

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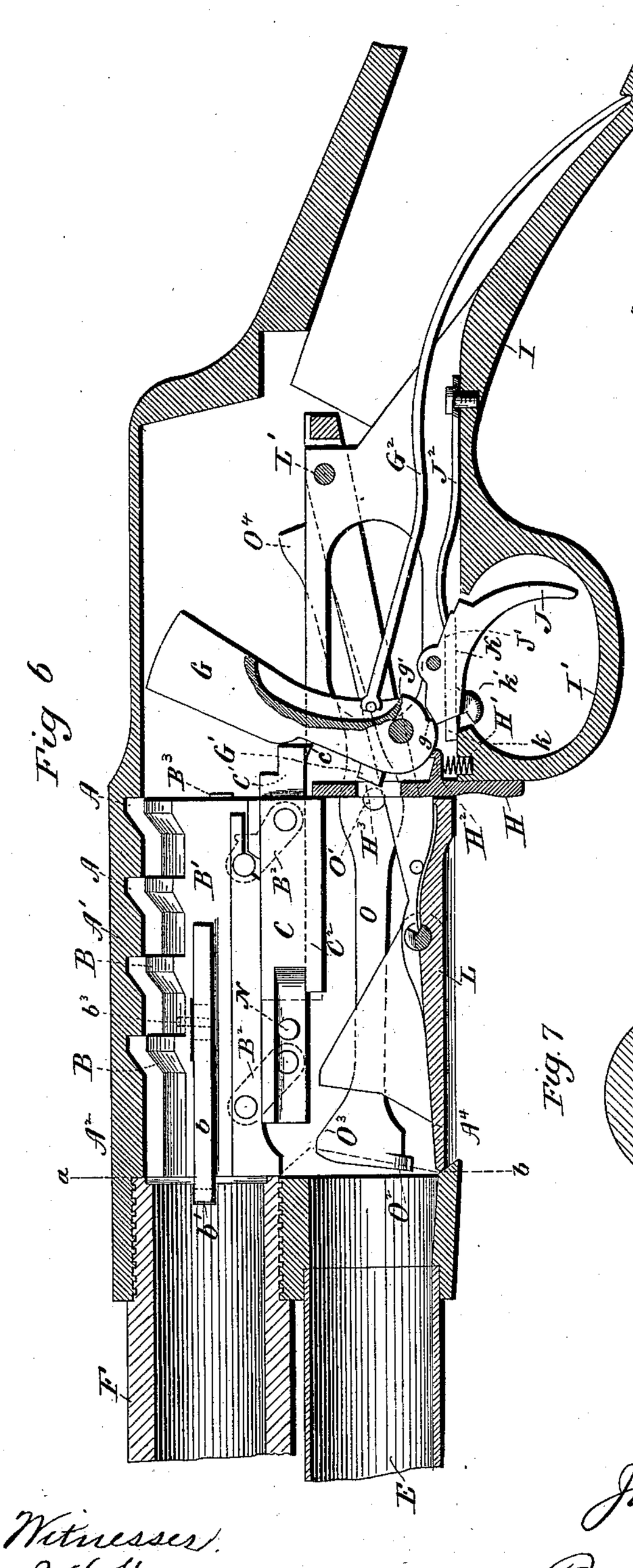

Fig 6

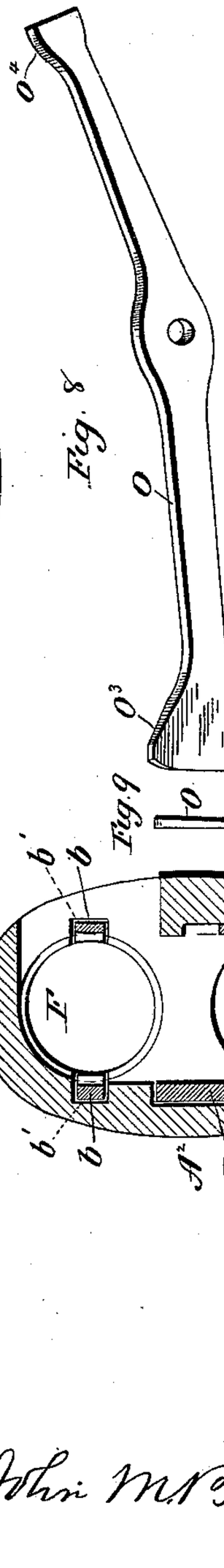

Fig. 8

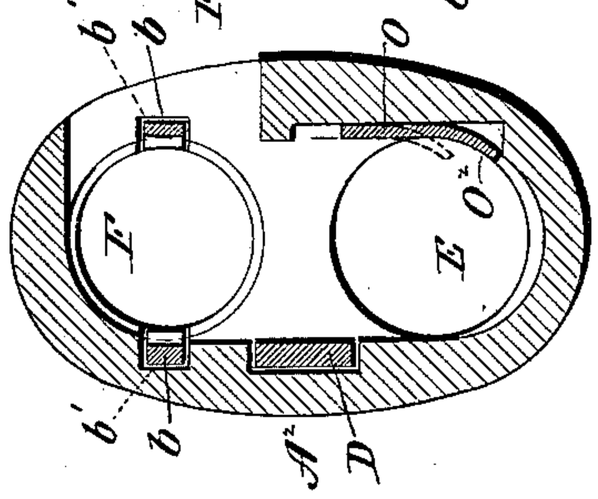

Fig. 7

Fig. 9

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(No Model.) 5 Sheets—Sheet 4.

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MAGAZINE FIREARM.

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Fig. 10

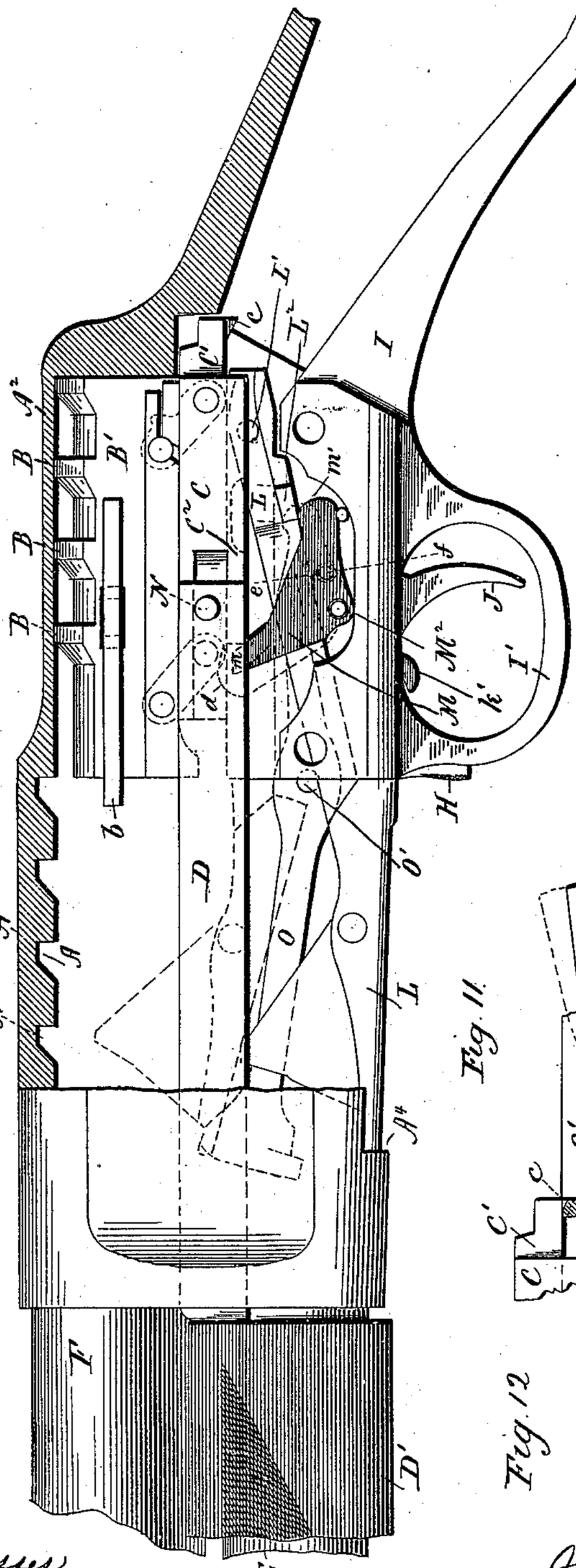


Fig. 11.

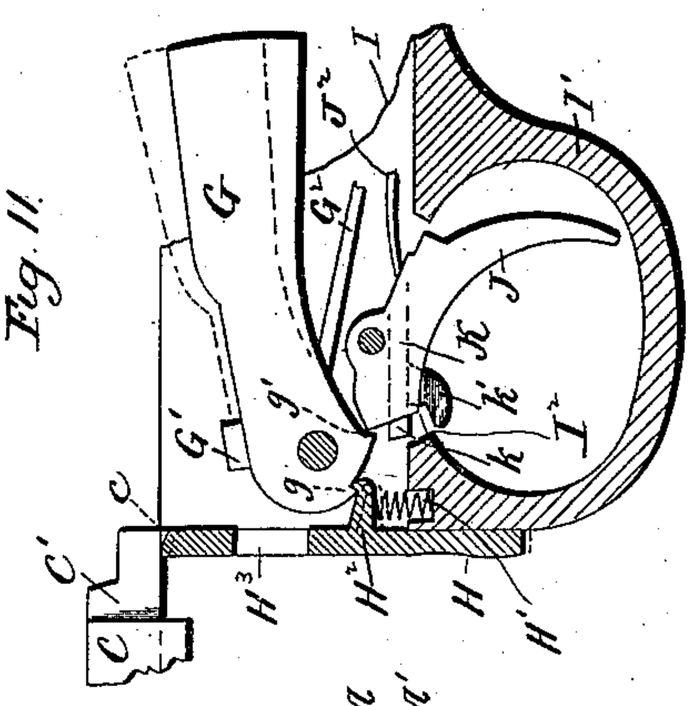
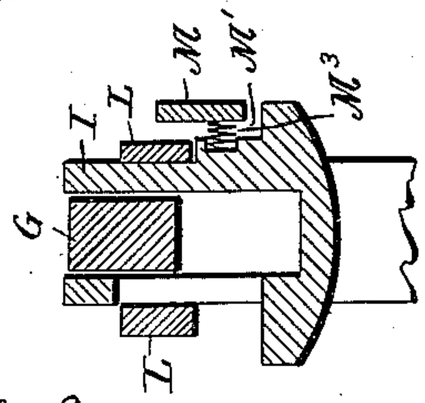


Fig. 12



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

J. M. BROWNING.

MAGAZINE FIREARM.

No. 550,778. Patented Dec. 3, 1895.

Fig. 14

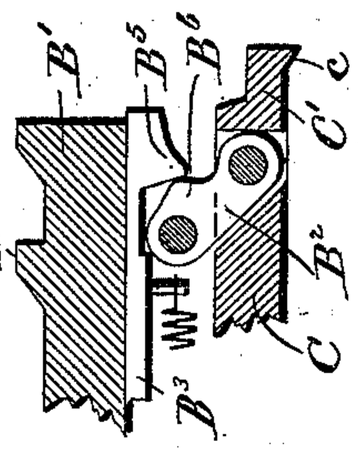


Fig. 13.

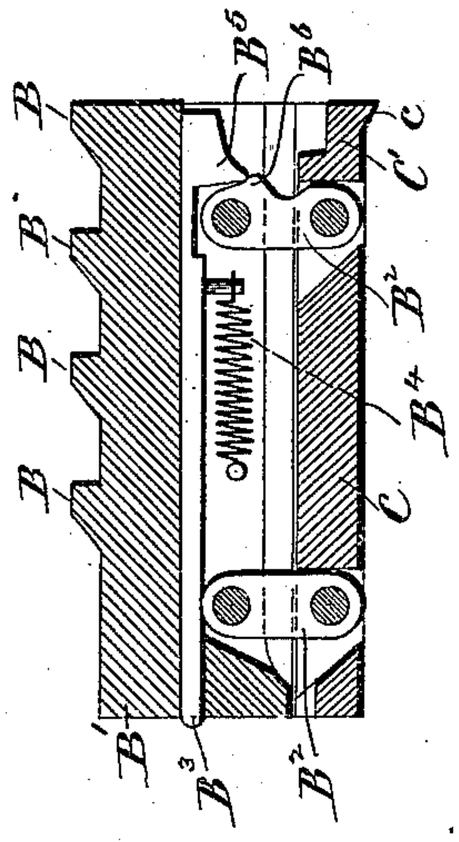


Fig 15

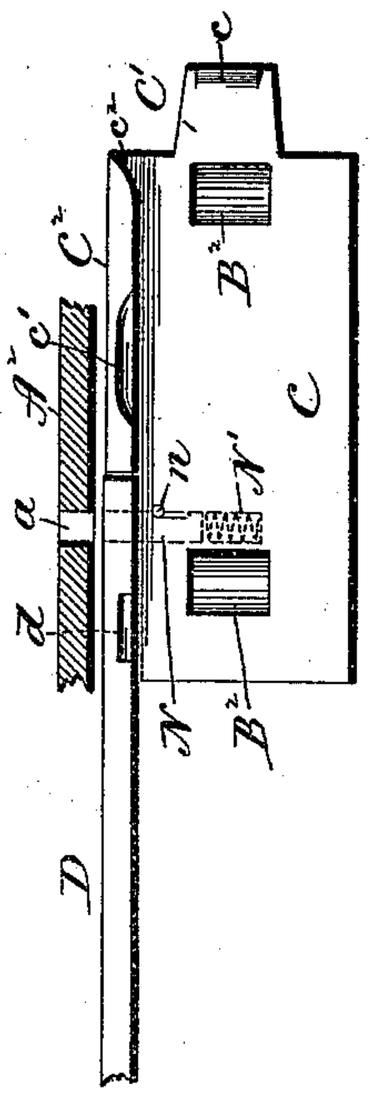
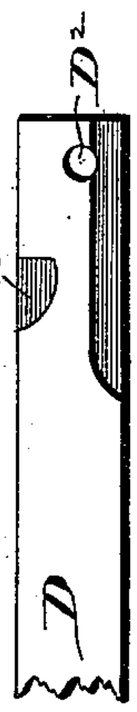


Fig 16



Witnesses.
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UNITED STATES PATENT OFFICE.

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MAGAZINE-FIREARM.

SPECIFICATION forming part of Letters Patent No. 550,778, dated December 3, 1895.

Application filed April 29, 1895. Serial No. 547,519. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. BROWNING, of Ogden, in the county of Weber and Territory of Utah, have invented a new Improvement in Breech-Loading 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 reverse plan view thereof; Fig. 3, a broken view of the arm in vertical longitudinal section, showing the position due to the several parts when the gun is closed; Fig. 4, a view in transverse section on the line *c d* of Fig. 3 and looking rearward; Fig. 5, a detached plan view of the lower tang and carrier; Fig. 6, a broken view of the gun in vertical longitudinal section, showing the several parts of the action mechanism in the positions due to them at the beginning of the opening movement of the gun and just after the slide has been moved rearward sufficiently to draw the breech-bolt down into its unlocked position and to have started throwing the hammer back into its cocked position; Fig. 7, a view of the arm in transverse section on the line *a b* of Fig. 6 and looking forward; Fig. 8, a detached view in perspective of the cartridge-stop; Fig. 9, a view thereof in front elevation; Fig. 10, a broken view of the arm in vertical longitudinal section, designed to show the breech-bolt in its open position, and the mechanism for lifting the carrier, which part is represented in its depressed position by full lines and in its elevated position by broken lines; Fig. 11, a detached broken view, partly in vertical section and partly in side elevation, showing the sliding safety-lock, the hammer, and the trigger, the breech-bolt slide, safety-lock, hammer, and trigger being in the positions which are due to them just before the slide moves into the limit of its forward movement and depresses the lock to release the hammer; Fig. 12, a broken sectional view on the line *e f* of Fig. 10, showing the rocking lever employed for lifting the carrier; Fig. 13, a detached view in vertical section of the breech-bolt and slide, which are shown in their closed and locked positions; Fig. 14, a similar but less comprehensive view showing the coaction of the rear link with the firing-pin; Fig. 15, a detached broken reverse plan view of the slide and the rear end of the action-bar; Fig. 16, a broken view in inside elevation of the rear end of the action-bar.

My invention relates to an improved breech-loading tubular-magazine concealed-hammer repeating firearm designed, primarily, to be used as a shotgun, the object being to produce a simple, strong, compact, reliable, and safe arm, constructed with particular reference to ease and convenience of operation, to the better inclosure and protection of the action mechanism, to locking the breech-bolt at a point close to the gun-barrel, to prevent the hand from being injured by the projection of the rear end of the breech-bolt through the frame when the gun is open, and to prevent the gases of explosion from being thrown back into the face of the sportsman.

With these ends in view my invention consists in a firearm having 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 four transversely-arranged locking notches or recesses A in the upper wall or top A′ of the frame A^2 of the arm, the said upper wall or top being unbroken throughout its length, as shown in Figs. 1 and 3. These recesses or notches receive a corresponding number of transverse upwardly-projecting locking-ribs B, formed upon the upper face of the breech-bolt B′, which is confined to longitudinal movement back and forth in the frame, except at the end of its forward movement, where it is permitted to move up and down for the entrance of its locking-ribs B into, and their clearance from, the locking notches or recesses A. I do not limit myself to employing four locking-recesses and four ribs, as the number thereof may be varied, as desired. Two links B^2 B^2, connected at their upper ends with the breech-bolt, from which they depend, are connected at their lower ends with a breech-bolt slide

C, which is moved back and forth in the frame of the arm by means of its connection, as will be described later on, with the rear end of an action-bar D, the forward end of which is attached to a sliding handle D′, mounted upon the tubular magazine E, located directly under the gun-barrel F, the said handle being therefore situated in front of the action mechanism of the arm and movable back and forth in line with the longitudinal axis of the gun-barrel. The breech-bolt reaches the limit of its forward movement before the slide reaches the limit of its forward movement, as shown in Fig. 6, which represents in broken lines the links connecting the breech-bolt and slide in inclined positions and with their upper ends in advance of their lower ends. When, therefore, the slide is moved forward to complete its forward movement, the links are brought into upright positions, as shown in Fig. 3, so that the breech-bolt is lifted vertically for a distance sufficient to enter all of its transverse locking-ribs into the locking notches or recesses in the frame, whereby the breech-bolt is firmly locked in its closed position. On the other hand, the slide begins its rearward movement before the breech-bolt, whereby the links are turned down into their inclined positions, as shown in Fig. 6, and the breech-bolt drawn downward to clear its locking-ribs from the locking-notches of the frame, after which it may be moved directly rearward into its full open position, as seen in Fig. 10.

By constructing the arm with locking notches or recesses and the breech-bolt with locking ribs or shoulders, as described, I am enabled to entirely dispense with the use of a recoil-block and means for operating the same, whereby I simplify the arm. Furthermore, I thus lock the breech-bolt at a point very near its forward end and close to the gun-barrel, whereby I secure a solid construction and reduce to a minimum the springing of the parts under the force of the recoil following the explosion of a cartridge. On the other hand, when a recoil-block is used it locks the breech-bolt at or near the extreme rear end thereof, giving a chance for the breech-bolt to spring throughout its entire length. By my invention, therefore, I secure superior resistance and stability in the arm under the shocks of use.

The breech-bolt is provided with two extractors *b*, respectively located in recesses formed in its opposite sides and projecting slightly forward of its forward face. When the breech-bolt reaches the limit of its forward movement and before it is lifted into its locked position, the said forward ends of the extractors enter notches *b′ b′*, formed to receive them, at opposite points in the rear end of the gun-barrel F, as shown in Fig. 7. In order therefore to provide for the vertical movement of the breech-bolt in locking it into and unlocking it from the frame after it reaches the limit of its forward movement, the extractors are flexibly connected or articulated with the breech-bolt, so that their rear ends may be lifted up and down while their forward ends remain entered in the said notches. It will be noticed that, as shown in Fig. 6 of the drawings, the extractor lies in a horizontal plane with its forward end entered into one of the notches in the gun-barrel, and that, as shown in Fig. 3 of the drawings, the extractor has been brought into an inclined position by the lifting of its rear end, consequent upon the lifting of the breech-bolt in locking it into the frame.

The particular construction of the breech-bolt and extractors for the flexible connection of the latter with the former may, of course, be widely varied, and I do not limit myself to any particular way of securing the result mentioned. The extractor shown in Figs. 3 and 6, for instance, is constructed near its rear end with a vertical slot b^2, receiving a vertical pin b^3, mounted in the breech-bolt. The other extractor, which is not shown, is adapted in any suitable manner to have its rear end moved up and down for the purpose set forth.

In order to prevent the firing-pin B^3, mounted in the breech-bolt B′, from being broken by the snapping of the concealed hammer G of the arm when there is no cartridge in the gun, I connect the said pin with a spring B^4, Figs. 13 and 14, located in the breech-bolt and arranged to exert a constant effort to pull the pin forward, so as to project its forward end beyond the forward face of the breech-bolt and draw its rear end slightly within the rear face of the breech-bolt, and therefore out of range of the action of the hammer, should the same be snapped without a cartridge in the gun. For the positive retraction of the firing-pin after the gun has been fired I provide the rear end of the pin with a depending nose B^5 and the rear face of the upper end of the rear link B^2 with a corresponding nose B^6. When the breech-bolt is in its locked position, the nose B^6 does not interfere with the proper longitudinal movement of the pin. In Fig. 13 of the drawings the breech-bolt is represented in its said locked position and the firing-pin is drawn forward by its spring B^4, whereby its forward end is projected beyond the front face of the breech-bolt and its rear end drawn within the same. With the breech-bolt and slide in the positions shown in this figure it is clear that if a cartridge were introduced into the gun, its head would push the firing-pin rearward against the tension of the spring B^4, so that the rear end of the firing-pin would project beyond the rear face of the breech-bolt, as shown in Fig. 14, and into position to be struck by the hammer for exploding the cartridge. When there is no cartridge in the gun, the spring will assert itself, as aforesaid, and hold the firing-pin in the position shown in Fig. 13; but just as soon as the slide C begins its rearward movement the nose B^6 of the rear link B^2 acts upon the depending nose B^5 of the firing-pin

so as to positively retract the same against the tension of the spring B^4, as shown in Fig. 14. The firing-pin being thus positively retracted by means of the rear link is held in such retracted position while the breech-bolt and slide are moving rearward into their open positions, and also while they are moving forward into their closed positions and until the links are brought into their vertical positions again by the final forward movement of the slide, when the breech-bolt is lifted into its locked position. The link then relieves the firing-pin, which is retained in its retracted position, with its rear end projecting beyond the rear face of the breech-bolt, by the cartridge in the gun-barrel, if one is there; but if there is no cartridge in the gun-barrel the spring B^4 asserts itself to draw the firing-pin inward into a position in which it is protected against injury from the snapping of the hammer.

For locking the slide and breech-bolt in their closed and locked positions and for preventing not only the premature snapping of the hammer, but any snapping of the hammer until the gun is closed, I employ a sliding safety-lock H, arranged for vertical movement and mounted in the lower tang I of the gun at a point just in front of the trigger-guard I′ thereof, the lower end of the lock being exposed and having its forward face roughened to facilitate its engagement by the fingers. By reference to Fig. 4 of the drawings it will be seen that the opposite edges of this sliding safety-lock are constructed with ribs *h*, taking into the ends of a guideway formed in the tang. The upper end of the lock coacts with a forwardly-inclined beveled locking-shoulder *c*, arranged transversely upon the extreme rear end of the lower face of a lug C′, extending rearwardly from the slide C. When the slide is in its closed position, the upper end of the sliding safety-lock extends up behind the said shoulder *c*, whereby the sliding lock locks the slide, and hence the breech-bolt, in its closed position. The sliding safety-lock is maintained in its normally elevated position by means of a spiral spring H′, located in part in a recess formed in the trigger-guard I′ and engaging at its upper end with a hook H^2, formed integral with the sliding lock and extending rearwardly from the rear face thereof. The sliding lock is further constructed at a point slightly above its longitudinal center with a slot H^3, which receives a lug G′, extending forward into it from the lower end of the concealed hammer G, the said lug and slot being constructed and arranged so that the lower edge of the lug engages with the lower end wall of the slot just before the hammer reaches its down position, and so that the hammer will during the completion of its forward movement push the sliding lock down against the tension of its spring H′ for a distance sufficient to clear its upper end from the beveled locking-shoulder *c* of the slide C. The snapping of the hammer in firing the gun therefore operates to depress the sliding lock and unlock the slide and breech-bolt preparatory to the opening of the gun after firing it. The hook H^2 of the sliding lock takes into a notch *g*, formed in the lower end of the hammer at a point in front of and above a notch *g′*, formed therein to receive the nose located at the forward end of the trigger J, the difference between the position and elevation of these two notches causing the hook of the sliding lock to act on the hammer before the trigger acts thereon, whereby the sliding lock will hold the hammer in a little lower position or a little farther back than the trigger will.

On account of the construction just above described the sliding safety-lock virtually takes the place of the trigger for holding the hammer in its cocked position until the breech-bolt and slide are in their closed positions when the gun is being fired as a repeater by holding back the trigger and operating the handle rapidly. When the gun is being fired in the manner described, with the trigger pulled back so as to entirely clear the hammer, the hook H^2 of the safety sliding lock springs into the notch *g* of the hammer, when the same is thrown back into its cocked position by the engagement of the slide C with its forward face in the rearward movement of the slide. The hammer is then held by the sliding safety-lock in its cocked position until the slide is virtually in its closed position, when the beveled shoulder upon the lower face of its extreme rear end engages with the upper end of the lock and pushes the same downward far enough to disengage the hook from the hammer, which is thus automatically released and allowed to fly forward under the action of its spring. This action of the slide in pushing down the lock and releasing the hammer takes place immediately before the slide comes to rest, which it has just time enough to do before the hammer springs forward. It is to be understood, furthermore, that by virtue of the direct coaction of my improved sliding safety-lock with the hammer the snapping of the same is prevented until the breech-bolt and slide are in their fully-closed positions, for the rearwardly-projecting hook of the lock is not disengaged from the hammer until the lock is pushed down by the going of the slide into its fully-closed position. Therefore, if the trigger is pulled to release the hammer before the slide has gone into its closed position, the hammer will not be released, so that the premature snapping of the hammer is prevented and any snapping of it rendered impossible until the gun is fully closed. Here I may say that it must be understood that the lock is always engaged, when the gun is open, in holding the hammer in its cocked position, for the reason that the sliding safety-lock is only pushed down out of engagement

with the hammer by the hammer itself or by the slide when the same is in its closed position.

The reason why the hook of the sliding safety-lock is always engaged with the hammer when the gun is open is because the notch *g* of the hammer is located forward of the notch *g'* and above the same when the hammer is in its cocked position, so that when the hook of the lock is holding the hammer in its cocked position the nose of the trigger, although it has entered into the notch *g'*, has done so without engaging the hammer so as to have any restraining action thereupon. It follows from this that when the sliding safety-lock is pushed downward by the going of the slide into its fully-closed position, whereby the hook is disengaged from the hammer, the same will be lifted a trifle by the hammer-spring G^2 before it is engaged by the trigger, which then holds the hammer in its cocked position, independent of the sliding safety-lock and until the gun is fired. I may also add that the gun may be closed without cocking the hammer by holding the trigger back during the forward movement of the breech-bolt slide, whereby the hammer is permitted to follow the breech-bolt slide forward without being caught either by the trigger or by the rearwardly-extending hook of the safety-lock. The function just described will be availed of when the gun is closed with a cartridge in the gun-barrel and it is desired to uncock the hammer without exploding the cartridge. For this purpose the safety-lock is pulled down by the fingers and the sliding handle moved rearward with the trigger held back. Then, during the following forward movement of the handle, the trigger being still held back, the hammer will follow the breech-bolt slide, and comes into its down position without being engaged by the trigger or the hook of the safety-lock, which will be lifted by its spring, but not elevated enough to lock the breech-bolt slide, which is left free to be moved back by the rearward movement of the handle. By preference the sliding safety-lock will be operated for unlocking the slide from the breech-bolt by drawing it down by grasping its projecting lower end with the fingers. I may add in this connection that the lug C' at the rear end of the slide engages with the forward face of the hammer at the base thereof in such a manner that it holds the hammer away from the firing-pin unless the slide is in its fully-closed position.

To prevent the gun from being fired after it is closed and the hammer is cocked, I provide the trigger with a safety-clutch K, for the reception of which the upper portion of the trigger is constructed with a longitudinal chamber J', open at both ends. The forward end of this clutch is constructed with two jaws *k* and *k'*, adapted when it is pushed forward to be engaged with a transverse web or tie I^2, Fig. 11, after which the trigger cannot be rocked on its pivot. The said jaw *k'* extends downward into the trigger-guard and has its face roughened or hatched so that it may be readily engaged by the fingers for pushing the clutch forward or back. The rear end of the clutch is engaged by the trigger-spring J^2, which thus has not only the function of operating the trigger, but also of holding the clutch in any position into which it may be moved by the sportsman.

For the purpose of lifting the carrier L, the rear end of which is pivotally connected with the lower tang I by means of a horizontally-arranged pin L', I employ a rocking lever M, which is located in a vertical recess M', Fig. 5, formed to receive it in the left-hand wall of the forward end of the said lower tang. This lever is fulcrumed upon a horizontal pin or stud M^2, mounted in the tang and projecting into the said recess, the lever being hung so loosely upon the pin or stud that it is free not only to rock back and forward in a vertical plane, but also to tip laterally in a plane at a right angle to the longitudinal plane of the gun. A spring M^3, interposed between the lever and the bottom of the said recess, exerts a constant effort to hold the lever in an upright position, in which it clears the bottom or inner wall of the recess. The forward end of this lever terminates in a finger *m*, which coacts with the lower edge of the rear end of the action-bar D and also with the lower edge of a flange C^2, depending from the left-hand side of the slide C. For the purpose of this coaction the said edge of the action-bar has a notch *d* formed in it, while the said flange C^2 has formed in it a clearance-space *c'* and an operating-bevel c^2, all shown in Fig. 15. At the beginning of the opening movement of the gun the bevel c^2, which is formed at the extreme rear end of the said flange C^2 of the slide C, engages with the finger *m* of the rocking lever M and tilts and crowds the same inward into its containing-recess M' against the tension of the spring M^3. After this the said finger of the lever virtually rides upon the inner face of the flange C^2 and upon the inner face of the rear end of the action-bar D until the notch *d* of the bar is brought into coincidence with the finger *m*, at which time the spring M^3 acts to lift the lever back into its vertical position and thus to move the said finger laterally outward into the said notch. The movement of the finger of the lever into the notch of the bar takes place just at the time when the slide reaches the extreme limit of its rearward movement. When, now, in the closing of the gun the slide and bar are moved forward, the rear wall of the said notch engages with the rear edge of the finger *m*, so as to cause the lever M to be rocked on its pivot, whereby the finger *m'* of the lever is lifted against a projection L^2, formed in right position at the rear end of the carrier, which is then lifted into its elevated or discharging position, as shown by broken lines in Fig. 10. When the carrier has thus been lifted into its elevated position,

the finger *m* of the rocking lever rides out of the notch *d*, but is held down so as to hold the carrier up by means of the flat lower edge of the action-bar and the flat lower edge of the flange of the slide. The lever is thus maintained in its rocked position until its finger *m* reaches the clearance-space *c'* in the flange C^2 of the slide. The clearance thus afforded permits the rocking lever to rock rearward on its pivot, its finger *m* rising into the said space. At the same time that the lever is rocking rearward, as described, the carrier is forced downward by the engagement of its forward end with the forward end of the slide. During the subsequent forward movement of the slide the finger *m* rides out of the clearance-space and upon the inner face of the rear end of the flange C^2 of the slide and over the operating-bevel c^2 thereof until, when the slide is in its fully-closed position, the said bevel stands in front of the said finger. At this time the spring M^3, before referred to, operates to push the rocking lever outward against the adjacent side wall of the frame. The next time the gun is opened the bevel c^2 engages with the finger *m* and crowds the lever inward again, and so on.

For connecting the rear end of the action-bar with the slide I provide the slide with a transversely-arranged spring-actuated coupling-pin N, Fig. 15, the longitudinal movement of which is controlled by a small stop-pin *n* and which is normally projected by means of a coiled spring N', engaging with its inner end. This pin, when projected, enters a suitable hole D^2 of corresponding diameter formed in the extreme rear end of the action-bar. For access to this pin the frame A^2 is provided in the right place with a very small aperture *a*. For disconnecting the slide and action-bar they are moved until the pin is brought into alignment with the opening *a*, through which a small wire or other similar object is then introduced for pushing the pin inward, so as to clear it from the action-bar, after which the bar and slide may be drawn apart. This spring-actuated pin therefore makes the connection and disconnection of the bar and slide a very easy matter.

The cartridge-stop which I employ in this gun consists of a long lever O, hung on a pin O' and bearing directly against the inner face of the right-hand wall of the frame. It is constructed at its forward end with a depending inwardly-turned stop-finger O^2 and with an operating-bevel O^3, the latter being located upon its upper edge in position to be engaged by the forward end of the slide C, so that when the slide is moved forward the forward end of the lever is depressed to retire the stop-finger, as shown in Fig. 7, and permit the cartridges to feed rearward out of the magazine E. On the other hand, when the slide is moved back into its open position its rear end engages with the operating-bevel O^4, formed at the rear end of the lever, which the slide depresses, so as to lift its forward end and raise its stop-finger into the position shown by broken lines in Fig. 7, where it engages with the head of the rearmost cartridge and holds in check the line of cartridges in the magazine. When the slide is in its forward position, the stop is pushed down out of the way, so that the rearmost cartridge in the magazine is free to move out of the same, which it does until stopped by engaging with the forward edge of the carrier, which is rounded out. The cartridge remains in this position until the slide, which is then located directly over it, is moved back. When this takes place, the upper edge of the cartridge is released, and the magazine-spring, which is not shown, acts on the cartridge to cause it to ride up over the rounded edge of the carrier and onto the same; but just before the cartridge next ahead of the one on the carrier emerges from the magazine the slide engages with the bevel O^4 at the rear end of the lever O, causing the forward end of the lever to be lifted and the stop-finger O^2 presented directly in front of the head of the rearmost cartridge in the magazine.

By reference to Fig. 4 of the drawings it will be seen that the frame incloses and protects the action mechanism in a degree unusual in this class of guns, inasmuch as it is solid except for the ejection-opening A^3, formed in its right-hand wall, and for the long opening A^4, formed in its bottom for the reception of the lower tang and for the feeding of cartridges into the magazine under the carrier, which is lifted for the purpose. I wish to call attention to the fact that the breech-bolt and slide are inclosed, and that neither of them projects through the frame when the gun is open, so that there is no danger to the sportsman of having his hands injured, and, furthermore, there is no danger to him from the gases of explosion, which sometimes fly back into the face of the sportsman in guns in which there are cuts in the top of the frame.

It is apparent from the suggestions made in the foregoing description and of other changes which may obviously be made, that I am not limited in carrying out my invention to the exact construction shown and described. Nor am I limited to using the several features of my invention in combination, for I may use them separately in different guns or in any combinations. Nor do I limit myself to their use in connection with tubular-magazine guns or repeating-guns. I would therefore have it understood that I 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 fire-arm, the combination with the frame thereof, of a breech-bolt constructed and arranged to move longitudinally back and forth in the said frame, and also to move vertically up and down therein when at the

limit of its forward movement, a breech-bolt slide located below the breech-bolt and movable longitudinally back and forth in the frame, one or more links connecting the breech-bolt and the said breech-bolt slide, and means for operating the latter, the breech-bolt and the frame of the arm being constructed to interlock when the breech-bolt is lifted at the limit of its forward movement, through the medium of the link or links connecting it with the breech-bolt slide, substantially as described.

2. In a fire-arm, the combination with the frame thereof, of a breech-bolt which is vertically movable at the limit of its forward movement, a breech-bolt slide located in the frame at a point below the breech-bolt, one or more links connecting the breech-bolt and the breech-bolt slide which does not reach the limit of its forward movement until after the breech-piece has reached the limit of its forward movement, a sliding handle located forward of the action-mechanism of the arm, and connection between the said sliding handle and the breech-bolt slide which raises and lowers the breech-bolt through the medium of the said link or links, the breech-bolt and the frame of the arm being constructed to interlock when the breech-bolt is so lifted, substantially as set forth.

3. In a fire-arm, the combination with the frame thereof having the inner face of its upper wall or top constructed with one or more locking notches or recesses, of a breech-bolt having longitudinal sliding movement, and also having vertical movement at the limit of its forward movement, and constructed with one or more locking ribs or shoulders to take into the said notches or recesses, a breech-bolt slide located within the said frame at a point below the said breech-bolt, one or more links for connecting the breech-bolt and slide, the said link or links being inclined except when the breech-bolt is at the limit of its forward movement and in its locked position, a sliding handle located forward of the action-mechanism of the gun, and an action-bar connecting the said handle with the said breech-bolt slide, substantially as described.

4. In a fire-arm, the combination with a frame having an imperforate upper wall or top, the inner face of which is constructed with one or more locking recesses; of a breech-bolt confined to sliding movement back and forth in a straight line, and to vertical movement at the limit of its forward movement, and constructed upon its upper face with one or more locking ribs or shoulders to take into the said recess or recesses; a breech-bolt slide located within the frame below the breech-bolt and corresponding or substantially corresponding to the same in length, connection between the bolt and slide for moving the bolt back and forth, and up and down when the bolt has reached the limit of its forward sliding movement, a sliding handle located forward of the frame, and movable back and forth in line with the longitudinal axis thereof, and an action-bar extending rearward from the said handle, and having detachable connection with the forward end of said slide, substantially as described.

5. In a fire-arm, the combination with the frame thereof, of a sliding breech-bolt having vertical movement at the limit of its forward sliding movement, means connected with the said breech-bolt for moving it back and forth and up and down, and one or more extractors applied to the breech-bolt and articulated thereto to permit the vertical movement thereof, after their forward ends have been entered into notches in the gun-barrel, substantially as described.

6. In a fire-arm, the combination with a sliding breech-bolt which is vertically movable at the limit of its forward movement, of a breech-bolt slide located within the frame at a point below the breech-bolt, one or more links connecting the breech-bolt with the said slide, means connected with the slide for actuating it and hence the breech-bolt back and forth, and a firing-pin located in the breech-bolt and adapted to be engaged directly with one of the said links for being positively retracted thereby when the gun is opened, substantially as described.

7. In a fire arm, the combination with a breech-bolt, of a firing-pin located therein, and a spring, also located in the breech-bolt and connected with the firing-pin to exert a constant effort to draw the same forward and retract its rear end within the rear face of the breech-bolt, substantially as set forth.

8. In a fire-arm, the combination with the frame thereof, of a sliding breech-bolt which is vertically movable at the limit of its forward movement, a breech-bolt slide located within the frame and below the breech-bolt, one or more links connecting the breech-bolt and the said slide, a firing-pin located in the breech-bolt and constructed at its rear end with a depending nose which engages with a nose formed upon one of the links, whereby the pin is positively retracted when the gun is opened, and a spring located in the breech-bolt and connected with the firing-pin to exert a constant effort to draw the same forward and retract its rear end within the rear face of the bolt, substantially as described.

9. In a fire arm, the combination with the frame thereof, of a sliding breech-bolt, which is movable up and down at the limit of its forward movement, a breech-bolt slide adapted to move back and forth in the frame, one or more links connecting the said slide and breech-bolt for moving the latter back and forth and up and down, and a handle located forward of the action mechanism of the arm, moving in line with the longitudinal axis of the gun-barrel, and having a rearwardly extending action-bar which is connected with the said slide, substantially as set forth.

10. In a fire arm, the combination with a sliding breech-bolt, movable up and down at

the limit of its forward movement, of a breech-bolt slide adapted to move back and forth with the breech-bolt, two links connecting the slide and breech-bolt, and operating to move the latter back and forth and up and down, a firing-pin located in the breech-bolt, and a spring also located in the breech-bolt and arranged to draw the firing-pin forward to clear its rear end from the rear face of the breech-bolt, one of the links coacting with the firing pin to positively retract the same when the gun is opened, substantially as set forth.

11. In a fire-arm, the combination with a sliding breech-bolt, of a breech-bolt slide, a sliding lock, the upper end of which coacts with the rear end of the said breech-bolt slide for locking the same in its closed position, and the lower end of which extends downward into position to be engaged by the fingers for its retraction and the unlocking of the said slide, a hammer adapted to be directly engaged by the said lock which holds it in its cocked position, and which in its flight into its down position engages with the said sliding lock for depressing the same to unlock the slide, and a trigger co-acting with the hammer, substantially as described.

12. In a fire arm, the combination with a breech-bolt, of a breech-bolt slide connected therewith and constructed at its rear end with a beveled locking shoulder, a vertically arranged sliding safety lock, adapted at its upper end to coact with the said shoulder for locking the said slide in its closed position extending downward and exposed for manual operation, and a hammer adapted to engage with the said sliding safety lock for pushing the same downward to unlock the slide, and means for automatically depressing the lock to disengage its hook from the hammer and permit the same to go into its down position, substantially as set forth.

13. In a fire arm, the combination with a vertically arranged sliding safety lock, constructed with a rearwardly extending hook and having its lower end extended downward and exposed for manual engagement and operation, of a spring arranged to exert a constant effort to lift the lock, a hammer constructed to engage with the said hook for being held in its cocked position thereby, and to engage with the lock to depress the same and unlock the slide, and means for automatically depressing the lock to disengage its hook from the handle and permit the same to go into its down position, substantially as set forth.

14. In a fire arm, the combination with a vertically arranged sliding safety lock, having its lower end extended downward and exposed for manual operation, and constructed with a rearwardly extending hook, of a spring for lifting the said sliding safety lock, and a hammer adapted to be engaged by the said hook when in its cocked position and held therein thereby, and as it reaches its down position to engage with the lock and push the same down into its unlocked position; a trigger, also adapted to engage with the hammer and hold the same in its cocked position, and means for engaging with the said sliding safety lock for depressing it to disengage its hook from the hammer, substantially as set forth.

15. In a fire arm, the combination with a vertically arranged sliding safety lock, extended downward and exposed for manual operation, and constructed with a slot, of a spring arranged to exert a constant effort to lift the said sliding safety lock, a hammer adapted to be engaged by the lock and held in its cocked position thereby, and provided with a forwardly extending lug which enters the slot in the said sliding safety lock and depresses the same into its unlocked position; a trigger, also coacting with the hammer, and means engaging with the sliding safety lock for depressing the same and disengaging the hook thereof from the said hammer, substantially as set forth.

16. In a fire arm, the combination with a sliding breech-bolt, of a breech-bolt slide connected therewith, a sliding handle located forward of the action mechanism and connected with the said breech-bolt slide for operating the same, and hence the breech-bolt, a vertically movable sliding safety lock adapted at its upper end to engage with the rear end of the said slide for locking the same in its closed position, and extended at its lower end into position for manual engagement and provided with a slot and a rearwardly extending hook, a spring coacting with the lock to lift it, a hammer having a notch into which the said hook takes and having a lug which enters the said slot in the said sliding safety lock, and a trigger, also coacting with the hammer through a notch therein, substantially as set forth.

17. In a fire-arm, the combination with a trigger and a trigger-spring, of a horizontally arranged safety clutch mounted in the upper portion of the body of the trigger at a point below the pivot thereof, and adapted at its rear end to be engaged with the trigger spring which thus operates the trigger and coacts with the clutch, which, when shot forward engages with a fixed portion of the arm and locks the trigger against pivotal movement, substantially as described.

18. In a fire arm, the combination with a pivotal carrier for lifting the cartridges into position to be introduced into the gun-barrel, of a rocking lever adapted to engage with the rear end of the carrier to lift the same, a handle located in front of the action-mechanism of the arm, sliding back and forth in line with the gun-barrel, and constructed with a rearwardly extending action-bar which coacts with the rocking lever for rocking the same on its pivot and lifting the carrier, substantially as set forth.

19. In a fire arm, the combination with a

sliding handle, located forward of the action mechanism and moving back and forth in line with the longitudinal axis of the gun-barrel and constructed with a rearwardly extending action-bar, of a breech-bolt, a breech-bolt slide connected with the said breech-bolt and with the action-bar, a carrier pivoted at its rear end, and a rocking lever adapted to tilt laterally, engaging with the carrier for lifting the same when it is rocked, and coacting with the breech-bolt slide and the rear end of the action-bar in being rocked to lift and support the carrier, substantially as set forth.

20. In a fire arm, the combination with a sliding handle having a rearwardly extending action-bar, of a breech-bolt slide connected with the said action-bar, a pivotal carrier pivotally hung at its rear end, and a rocking lever adapted to be laterally tilted and to be engaged with the carrier for lifting the same and coacting with the action-bar and breech-bolt slide, the action-bar being constructed for the purpose of such coaction with a notch and the breech-bolt slide with a clearance space and bevel, substantially as set forth.

21. In a fire arm, the combination with a sliding handle, located forward of the action mechanism, sliding back and forth in line with the longitudinal axis of the gun-barrel, and having a rearwardly extending action-bar, of a lower tang, a carrier pivoted at its rear end to the said tang, a rocking lever pivotally mounted in the tang so as to rock back and forth edgewise and tilt sidewise, and constructed with two fingers, of which the rear and lower finger is arranged to engage with the carrier for lifting the same, a breech-bolt slide connected with the rear end of the action-bar and constructed with a depending flange, located in line with the said bar and constructed with a clearance space and bevel to coact with the forward upper finger of the lever, to receive which the action-bar is notched, and a breech-bolt connected with the breech-bolt slide and operated thereby, substantially as set forth.

22. In a fire arm, the combination with a sliding handle, located forward of the action mechanism and movable back and forth in line with the longitudinal axis of the gun-barrel, and constructed with a rearwardly extending action-bar, which is provided at its rear end with a transverse open hole, of a breech-bolt slide, and a spring-actuated coupling pin, mounted in the said slide and entering the hole in the action-bar for coupling the same and the said slide together, substantially as set forth.

23. In a tubular magazine fire arm, the combination with the magazine thereof, of a cartridge stop, consisting of a lever pivoted to one of the side walls of the frame so as to move up and down in a vertical plane, and constructed at its forward end with a stop finger and an operating bevel and at its rear end with an operating bevel, and a breech-bolt slide which engages, when in its forward position, with the operating bevel at the forward end of the lever for retiring the stop finger, and which engages in its open position with the bevel at the rear end of the lever for bringing the stop finger into play, substantially as set forth.

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

JOHN M. BROWNING.

Witnesses:
JOHN E. RAMSDEN,
KATE LINEHAN.