(No Model.) 4 Sheets—Sheet 1.

J. M. & M. S. BROWNING.

BREECH LOADING FIREARM.

No. 486,272. Patented Nov. 15, 1892.

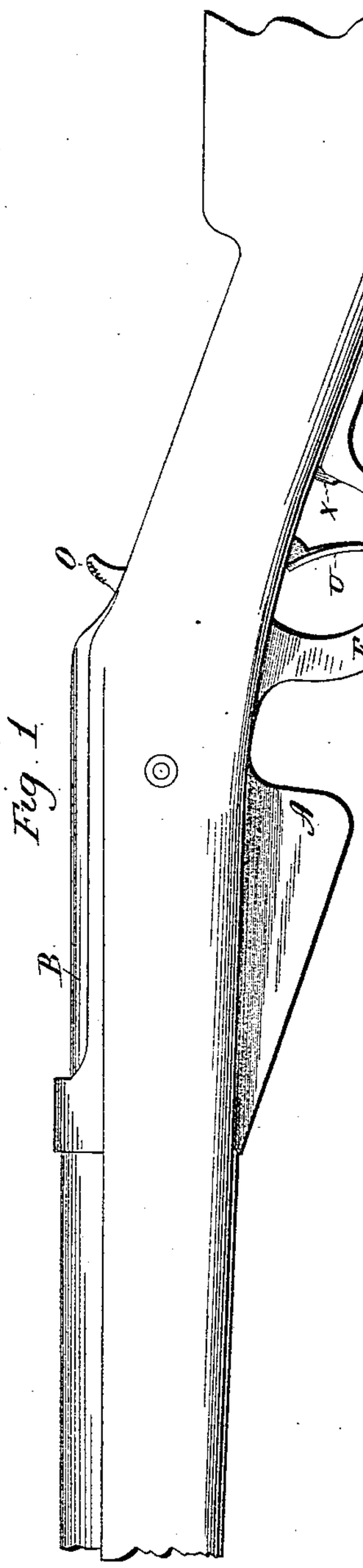

Fig. 1

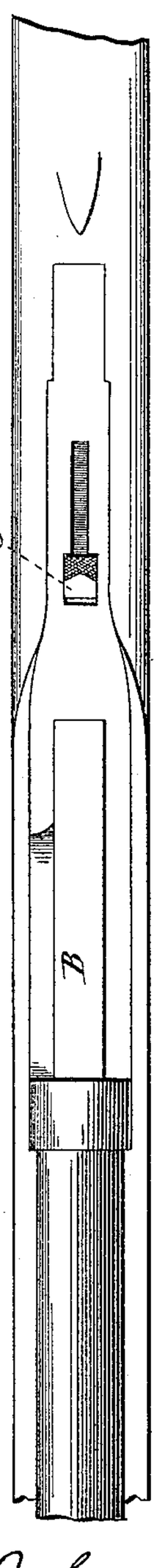

Fig. 2

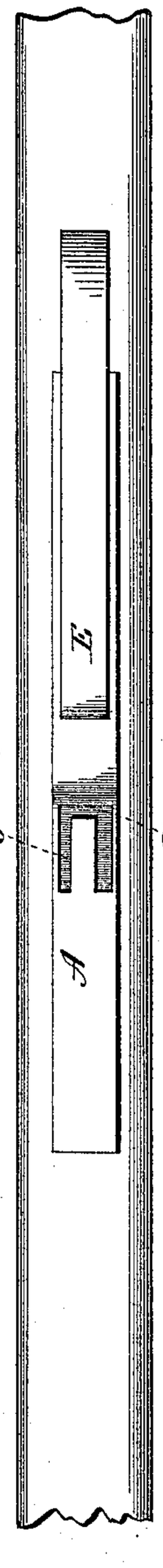

Fig. 3

Witnesses.
J. N. Shumway.
Lillian D. Kelsey.

John M. Browning
and Matthew S. Browning,
Inventors.
By atty Earle Seymour

(No Model.) 4 Sheets—Sheet 2.

J. M. & M. S. BROWNING.

BREECH LOADING FIREARM.

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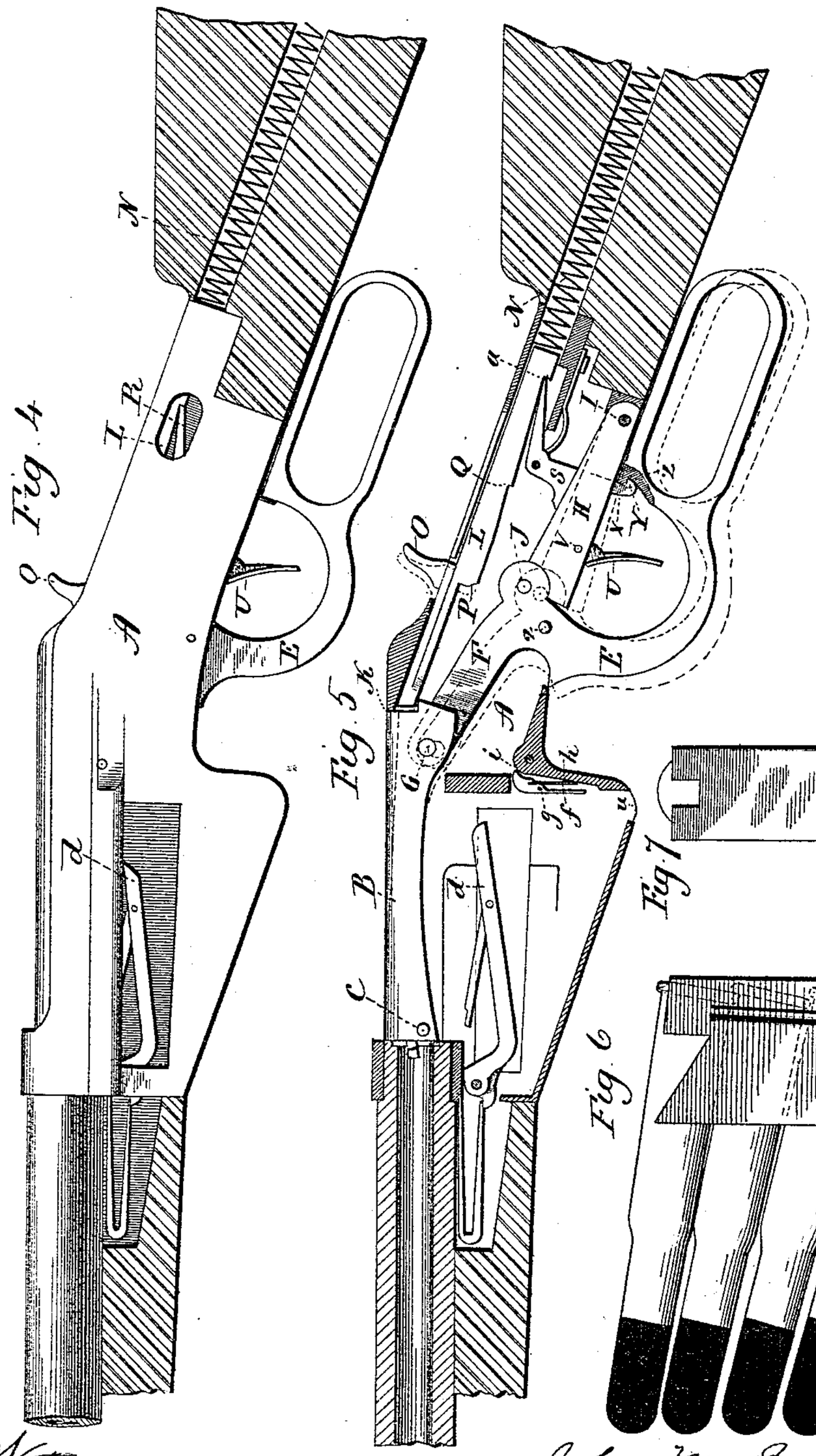

Witnesses.
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(No Model.)

4 Sheets—Sheet 3.

J. M. & M. S. BROWNING.

BREECH LOADING FIREARM

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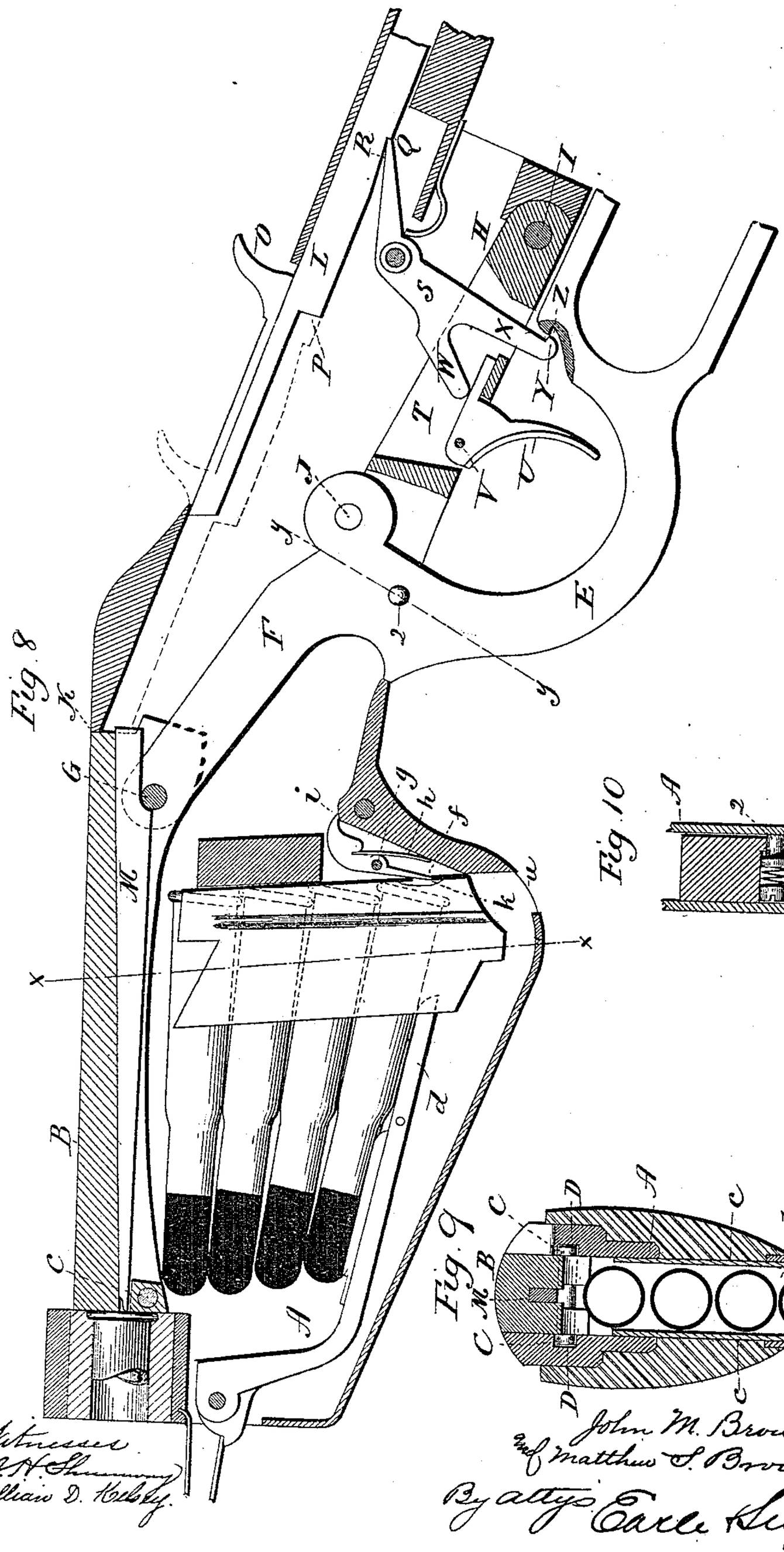

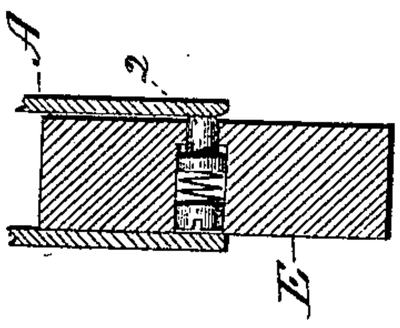

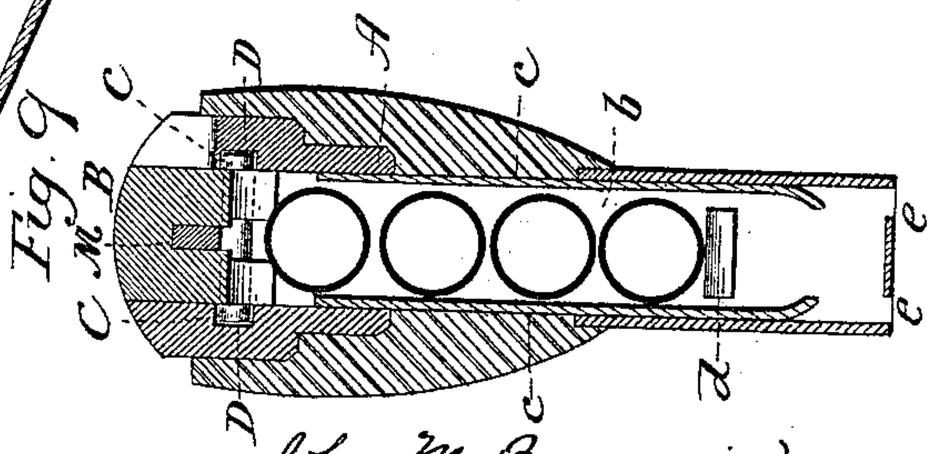

Witnesses.
S. N. Shumway
Lillian D. Kelley.

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By attys Earle & Seymour

(No Model.) 4 Sheets—Sheet 4.

J. M. & M. S. BROWNING.

BREECH LOADING FIREARM.

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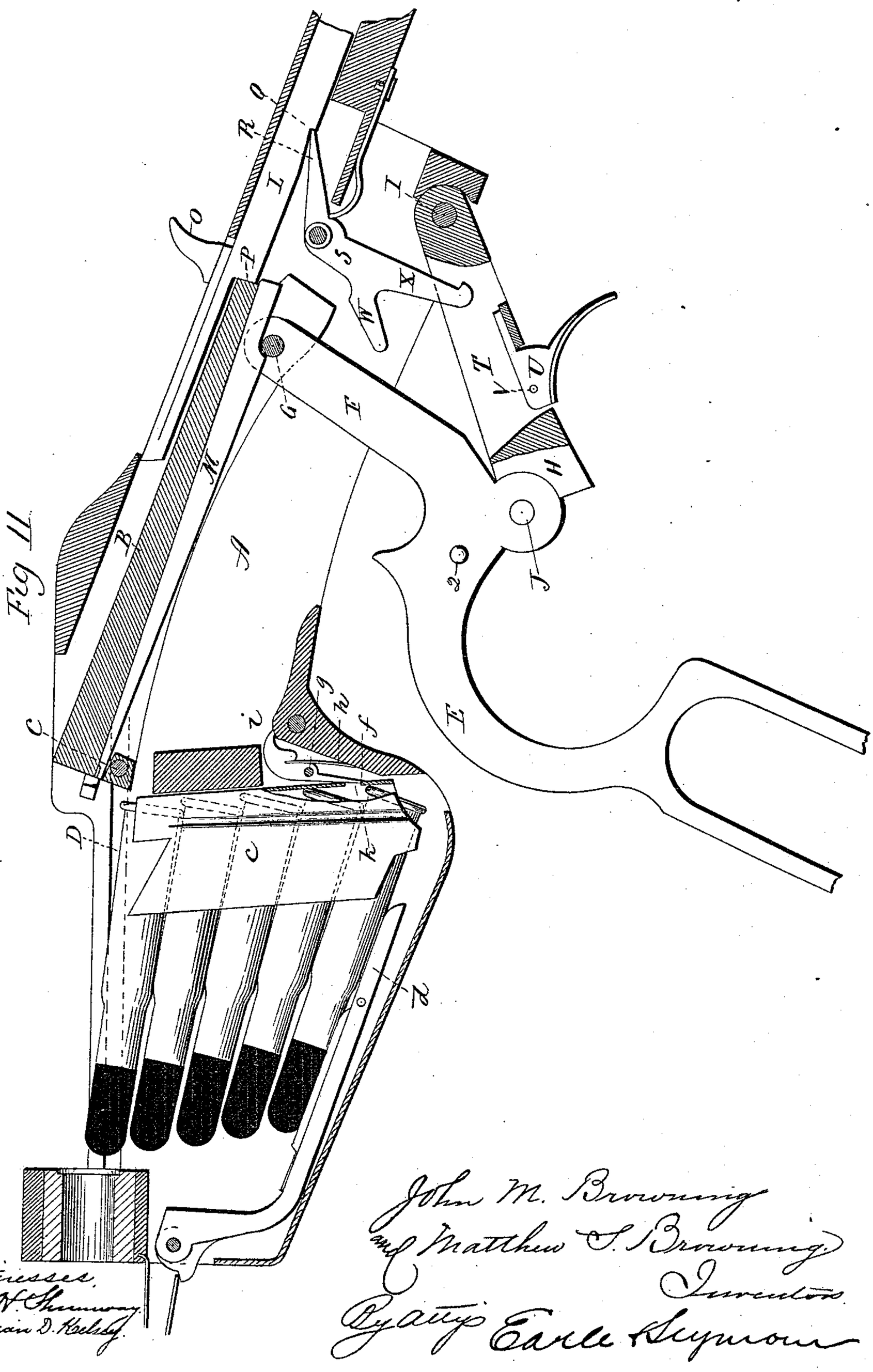

Fig 11.

Witnesses.
J. N. Shumway
Lillian D. Kelley

John M. Browning
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Inventors.
By their Attys Earle & Seymour

UNITED STATES PATENT OFFICE.

JOHN M. BROWNING AND MATTHEW S. BROWNING, OF OGDEN, UTAH TERRITORY, ASSIGNORS TO THE WINCHESTER REPEATING ARMS COMPANY, OF NEW HAVEN, CONNECTICUT.

BREECH-LOADING FIREARM.

SPECIFICATION forming part of Letters Patent No. 486,272, dated November 15, 1892.

Application filed June 6, 1892. Serial No. 435,704. (No model.)

To all whom it may concern:

Be it known that we, JOHN M. BROWNING and MATTHEW S. BROWNING, of Ogden, in the county of Weber and Territory of Utah, have invented a new Improvement in Firearms; and we do hereby declare the following, when taken in connection with 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 side view of the arm complete, but shortened at the front and rear; Fig. 2, a top view of the same; Fig. 3, an under side view of the same; Fig. 4, a longitudinal sectional view cutting through the stock, showing the receiver in side view; Fig. 5, a longitudinal sectional side view showing the mechanism in position, the breech-piece closed, and the parts locked; Fig. 6, a side view of the magazine detached; Fig. 7, a rear view of the same; Fig. 8, a sectional side view, enlarged, showing the hammer as in the cocked position with the breech-piece closed; Fig. 9, a vertical section on line *x x* of Fig. 8, looking forward; Fig. 10, a transverse section on line *y y* of Fig. 8; Fig. 11, the same as Fig. 8, but showing the parts as in the extreme open position.

This invention relates to an improvement in that class of firearms in which the breech-piece is arranged to move longitudinally backward and forward in opening and closing through the instrumentality of a lever forming the trigger-guard, and in which a hammer is arranged in the receiver at the rear of the breech-piece, adapted to operate upon a firing-pin which extends through the breech-piece, and with special reference to that class of magazine-firearms in which the magazine is removable from the arm and adapted to contain several cartridges, one above another, nearly parallel with each other, and so that the said magazine, with the cartridges, may be introduced into the receiver to a position below the breech-piece, and so that, the breech-piece being open, the column of cartridges will be raised to bring the uppermost cartridge forward of the front face of the breech-piece, and so that when the breech-piece is returned it will force the uppermost cartridge into the cartridge-chamber in the barrel, parts of the invention being applicable to single breech-loaders as well as to magazine-arms.

The invention has for its object to lock the mechanism of the arm in its closed or normal position and to lock the hammer in a position slightly withdrawn from the firing-pin, and also to lock the magazine or cartridge-holder securely in the receiver; and the invention consists in the construction as hereinafter described, and particularly recited in the claims.

A represents the receiver, within which the mechanism is arranged, and, as shown, the receiver is constructed of a width narrower than the width of the stock, and so as to be introduced into a mortise prepared for it in the stock, the stock being continuous from butt to fore-end. The barrel is attached to the forward end of the receiver and opens at its rear end into the receiver in the usual manner of breech-loading arms.

B represents the breech-piece, which is provided near its forward end on each side with laterally-projecting trunnions C, which are adapted to run in corresponding longitudinal grooves D upon the inside of the receiver, (see Figs. 9 and 11,) so that the forward end of the breech-piece is guided in substantially a longitudinal line, while its rear end is free to rise and fall.

E represents the lever below the receiver and which forms the trigger-guard. Its inner end is constructed with an arm F, which extends forward and is hung to the breech-piece near its rear end by a pivot G.

H represents the link or strut, which is hung by its rear end upon a pivot I at the rear end of the receiver and extending forward is hinged at its forward end to the lever E by a pivot J, the pivots G, I, and J being substantially in line with each other when the parts are in the closed position, as seen in Fig. 5. When the parts are in the closed position, as seen in Figs. 5 and 8, the rear end of the breech-piece abuts against a corresponding

shoulder K in the receiver, which forms an abutment to support the breech-piece against the action of recoil.

In opening the breech-piece the first part of the downward movement of the trigger-guard lever, as indicated in broken lines, Fig. 5, draws down the rear end of the breech-piece until it may escape the abutment K. The link or strut H also turns downward upon its fixed pivot I, and this downward movement of the trigger-guard lever is then continued, which produces the rear movement of the breech-piece to its full open position, as seen in Fig. 11. In the receiver in rear of the breech-piece the hammer L is arranged. This hammer is in the form of a sliding spindle, its forward end adapted to strike the firing-pin M, which is arranged longitudinally in the breech-piece. The hammer is provided with a spring N at the rear, which is compressed as the hammer moves rearward and so that by its reaction it will throw the hammer forward to impart its blow to the rear end of the firing-pin. The hammer is arranged in the grip part of the receiver and therefore stands in a position inclined downward and rearward from the breech-piece, as clearly seen in Fig. 5. As here represented, the hammer is provided with a thumb-piece O, by which it may be forced backward by hand should occasion require; but in the usual working of the arm the rear end of the breech-piece drops below the forward part of the hammer, and so that as it moves rearward it will at the proper time strike a shoulder P on the under side of the hammer and so that as the breech-piece continues its rear movement to the wide-open position it will force the hammer to full-cock, as seen in Fig. 11, where a notch Q on the hammer will engage the nose R of the sear S, as seen in Fig. 11, the sear-spring, as shown in Fig. 8, forcing the sear into the notch when it is presented thereto. This movement of the hammer compresses the spring accordingly. Upon the return of the trigger-guard lever the breech-piece moves forward, and when it reaches its extreme forward or closed position the final closing movement of the trigger-guard lever will raise the rear end of the breech-piece to bring it forward of the shoulder K, as seen in Fig. 8.

In a vertical mortise T through the link or strut H the trigger U is hung upon a pivot V, and when the parts are in the closed position, as seen in Fig. 8, the trigger stands directly under the tail W of the sear S and so that, the hammer being engaged by the nose R of the sear, as seen in Fig. 8, a pull upon the trigger will act upon the tail W of the sear so as to force the nose R of the sear out of engagement with the hammer to liberate the hammer, so that it may fly forward to impart its blow to the firing-pin.

From the sear is a downwardly-projecting dog X, which extends through the mortise T in the link H and is constructed with a shoulder Y upon its rear side, and this shoulder Y of the dog X is adapted to engage a corresponding shoulder Z in the trigger-guard lever when the dog is free so to do, as seen in Fig. 5. Such engagement of the dog with the trigger-guard lever locks the mechanism of the arm in the closed position and from which it cannot escape so long as the dog is thus engaged. The relation of the dog X to the nose R of the sear S is such that when the sear is engaged with the hammer, as seen in Fig. 8, the dog is forced out of engagement with the lever E and so that that lever is free to operate upon the under side of the hammer and will ride upon the nose of the sear, so that it will be impossible for the dog to engage the lever E unless a special provision is made for it so to do. To permit the dog to interlock with the lever E, the hammer is constructed near its rear end with a notch *a* deeper than the cock-notch Q, as seen in Fig. 5, and this notch *a* is in such a position with relation to the sear that the said notch *a* may engage the sear when the hammer is slightly withdrawn from the firing-pin, as seen in Fig. 5, and because this notch *a* is deeper than the cock-notch Q the sear is permitted to rise to so much greater extent than the cock-notch permits it to do that the dog turns rearward so much farther than it would do at the cock-notch that it will engage the lever E, as seen in Fig. 5. The notch *a* is preferably undercut, so as to make a hook engagement with the sear to prevent the sear from being withdrawn from that notch by a direct pull upon the trigger. The hammer is therefore locked in a slightly-retracted position, and engaging the sear as it does it prevents the possible accidental disengagement of the dog from the lever.

In the ordinary use of the arm when the trigger is pulled to release the hammer from full-cock the hammer flies forward so as to strike the firing-pin, and this forward movement takes the notch *a* to a position forward of the nose of the sear, as seen in broken lines, Fig. 5, so that when the hammer is in that extreme forward position the lever is unlocked and ready for operation, the locking of the breech-piece in its closed position only being permissible when the hammer is slightly retreated. Such retreating of the hammer will be produced by hand, it being impossible when the parts are locked as described to produce the rear movement of the hammer through the instrumentality of the trigger-guard lever; but when the hammer is in the extreme forward position, as seen in broken lines, Fig. 8, the arm may be operated the same as if there were no locking device. To retain the parts in their closed position when not thus positively locked, a spring-stud 2 is arranged transversely in the lever E and so as to project at one side, as seen in Fig. 10, this spring-stud being adapted to engage the inner surface of the receiver when the lever is in the

closed position and so as to offer a slight resistance to the manipulation of the lever, but not sufficient to interfere with its operation.

The arrangement of the sear and trigger with the locking arrangement for the lever may be employed in arms in which a similar lever is used, wherein the lever is hung upon a stationary pivot in the receiver instead of connected with the receiver by a link—as, for illustration, the lever of the well-known Winchester repeating-arm—provided, of course, that the reciprocating hammer be employed, and, as a further illustration, in Fig. 8 the link T may be supposed to be a stationary part of the receiver with the pivot J, on which the lever swings stationary in the receiver, the connection between the lever and the breech-piece being such, as is well understood, that the forward-swinging movement of the lever will impart a rearward movement to the breech-piece, and such rearward movement of the breech-piece will impart a corresponding rearward-sliding movement to the hammer. In such construction the operation of the trigger, sear, and dog with the corresponding notches of the hammer will be the same as already described.

The magazine consists of a case composed of a back *b* with two sides *c*, distant from each other corresponding to the diameter of the cartridges and of their heads, a groove being formed in the sides, so that the heads of the cartridges may lie therein, and the flange of each cartridge stands at the rear of the flange of the next cartridge above, as seen in Fig. 6. The two sides are short and the front end of the magazine open, so that the cartridges may project therefrom, as seen in Fig. 6. This magazine itself constitutes the subject of an independent application. The receiver is adapted for the introduction of the magazine into the arm when the breech-piece is in the open position, as seen in Fig. 11, and so that when the breech-piece is in that position the magazine may be introduced through the opening in the top into the receiver and forced down into the receiver upon a spring-follower *d*, as seen in Fig. 11, so as to depress that follower, but so that the follower may bear against the lower cartridge in the column with a tendency to raise the column, and so that as the upper cartridge is thrown forward out of the magazine the column will rise to present the next cartridge, and so on until all the cartridges are removed. The position of the upper cartridge in the magazine is, as seen in Fig. 11, so that its upper edge stands forward of the front face of the open breech-piece, and so that as the breech-piece next moves forward it will force the upper cartridge forward into its place in the magazine.

The magazine, as will be seen from the foregoing, is of U shape in transverse section, its open side forward. As one magazine is exhausted, it becomes necessary to introduce a second, and that one magazine may operate to force the preceding magazine from the receiver. The receiver is constructed with a U-shaped opening *e* through its under side, (see Figs. 3, 8, and 9,) which corresponds in position to the magazine when in place, and so that, one magazine having been exhausted, the second magazine with cartridges introduced will strike the upper end of the preceding magazine and force it downward through the opening *e* in the bottom of the receiver, the pressure of the spring-follower being sufficient to support the cartridges and the magazine in their proper position so long as there are any cartridges in the magazine.

To lock the magazine in its place in the receiver and hold it against the upward force produced by the follower upon the cartridges, a magazine-locking dog *f* is hung in the receiver upon a pivot *g* at the rear of the magazine-recess. This dog is provided with a spring *h*, the tendency of which is to force the nose of the dog forward. The tail of the dog above the pivot is adapted to rest upon a stop or shoulder *i* in the receiver when the nose of the dog is in the forward or locking position, and so as to prevent the nose of the dog from flying farther forward when the magazine is absent.

The back of the magazine is constructed with a notch *k*, and so that as the magazine is forced downward to its place the nose of the dog will in due time engage the notch *k* of the magazine, as seen in Fig. 8, and lock the magazine against upward movement, but leave the magazine free to be forced downward, the notch escaping from the dog as the magazine moves downward when the next magazine is inserted.

We claim—

1. In a firearm in which the barrel opens into the receiver at the rear, the combination therewith of a longitudinally-reciprocating breech-piece arranged in the receiver, the breech-piece provided with trunnions near its forward end and upon opposite sides, the receiver constructed with longitudinal grooves in which said trunnions may run, the breech-piece at the rear end free to swing up and down, a lever extending through the bottom of the receiver and rearward, an arm of the lever extending forward and hung to the breech-piece near its rear end, a link hung in the receiver at the rear of the breech-piece and so as to swing in a plane parallel with the plane of the lever, the link extending forward and hung to the receiver between the pivot which connects the lever to the breech-piece and the pivot by which the link is hung to the receiver, and the receiver constructed with a shoulder at the rear of the breech-piece and against which the breech-piece will abut when in the closed position, substantially as described, and whereby in the first part of the opening movement of the said lever the rear end of the breech-piece will be drawn down and away from its abutment on the receiver.

2. In a firearm in which the barrel opens

into the receiver at the rear, the combination therewith of a longitudinally-reciprocating breech-piece, a lever extending through the bottom of the receiver, an arm at its forward end hung to the rear end of the breech-piece, a link hung upon a pivot in the receiver and extending forward, hung to the said lever between the pivot which connects the lever with the breech-piece and the pivot by which the link is hung to the receiver, a hammer arranged in the receiver in rear of the breech-piece and adapted to slide longitudinally, the breech-piece being adapted in its rear movement to force the hammer to its cocked position, a sear hung to the receiver below the hammer, its nose adapted to engage the cock-notch of the hammer, and a trigger hung in a mortise in the said link, the tail of the sear adapted to engage the trigger when the parts are in the closed position, substantially as described.

3. In a firearm in which the barrel opens into the receiver at the rear, the combination therewith of a longitudinally-reciprocating breech-piece, a swinging lever adapted to impart reciprocating movement to said breech-piece, a reciprocating hammer in rear of the breech-piece, a sear hung in the receiver below the hammer, its nose adapted to engage the full-cock notch of the hammer, a trigger hung below the sear, the tail of the sear adapted to engage the trigger, so that a pull of the trigger will release the hammer, the hammer constructed with a notch in rear of the full-cock notch, but deeper than the full-cock notch, and the sear constructed with a downwardly-projecting dog adapted to make hooked engagement with the lever, the depth of the full-cock notch being such as to prevent such engagement of the dog and lever, while the deeper notch will permit the nose of the sear to rise to such an extent as to cause the engagement of the dog with the lever, substantially as described.

4. In a firearm in which the barrel opens into the receiver at the rear, a longitudinal breech-piece arranged in the receiver in rear of the barrel, the breech-piece constructed with trunnions upon opposite sides at its forward end, the receiver constructed with longitudinal grooves in which the said trunnions are adapted to run, while the breech-piece at the rear is adapted for up-and-down movement, the receiver constructed with a shoulder at the rear against which the rear end of the breech-piece may abut when in the closed position, a lever through the bottom of the receiver, having an arm extending forward and hung to the breech-piece near its rear end, a link hung at the rear upon a pivot in the receiver, the link extending forward, hung to the said lever between the connection of the lever with the breech-piece and the pivot on which the link is hung, the said link constructed with a vertical mortise, a trigger hung upon a pivot in said mortise, a longitudinally-reciprocating hammer above said link, a sear hung upon a pivot between said link and hammer, its nose adapted to engage the full-cock notch in the hammer and the tail of the sear adapted to engage the trigger, so that a pull upon the trigger will turn the sear from the full-cock notch, the sear constructed with a downwardly-projecting dog through the mortise in the link, the lever and dog constructed with corresponding notches to adapt them to engage with each other, and the hammer constructed with a notch in rear of and deeper than the full-cock notch, the depth of the full-cock notch being such as to prevent the dog from turning into engagement with the lever, but the increased depth of the notch at the rear being such as to permit such engagement between the notch and lever, substantially as described.

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

JOHN M. BROWNING.
MATTHEW S. BROWNING.

Witnesses:
JOHN E. RAMSDEN,
R. C. MCEWAN.