(No Model.)

3 Sheets—Sheet 1.

J. M. & M. S. BROWNING.

MAGAZINE FIREARM.

No. 487,659. Patented Dec. 6, 1892.

Fig 1

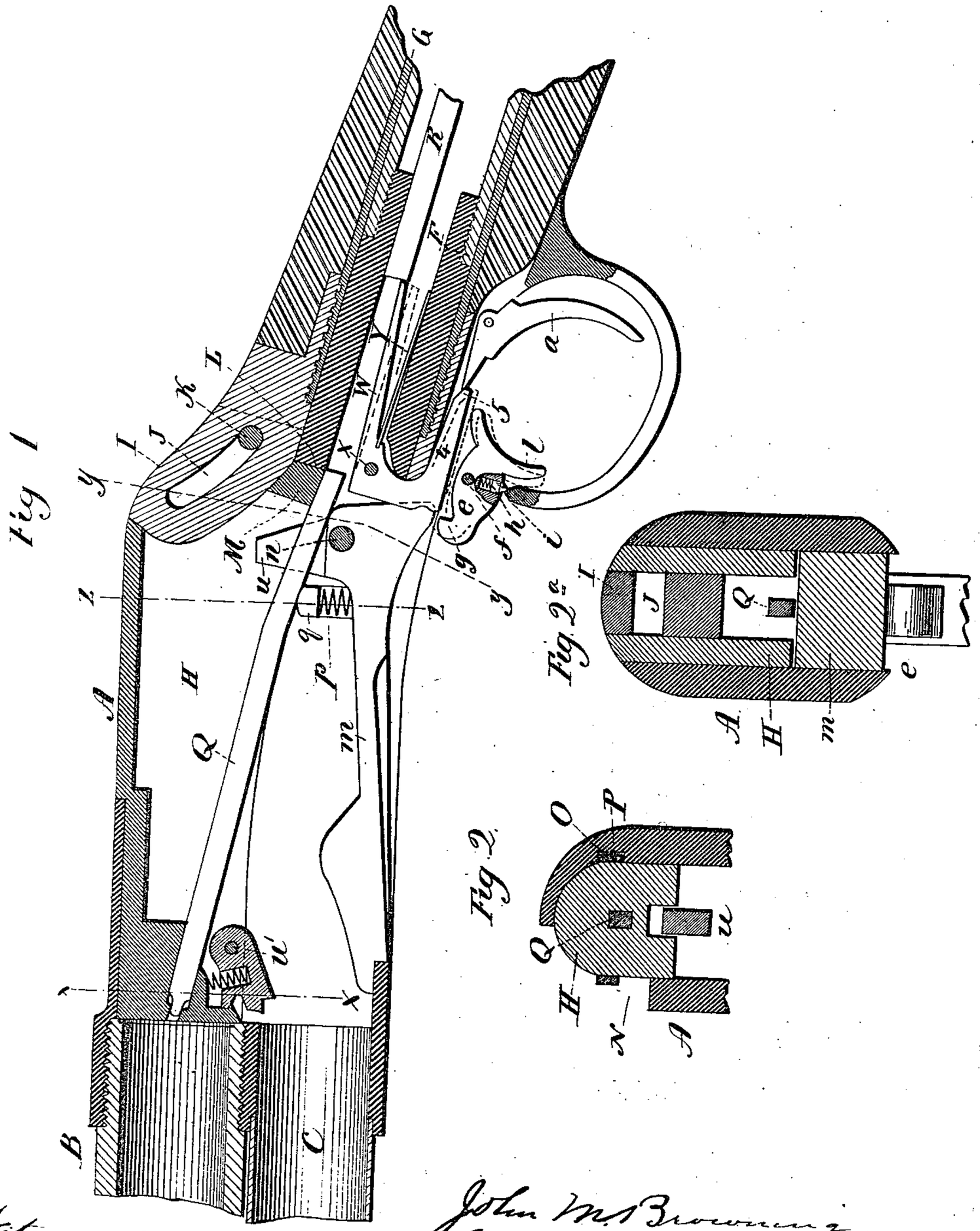

Fig 2a.

Fig 2.

Witnesses
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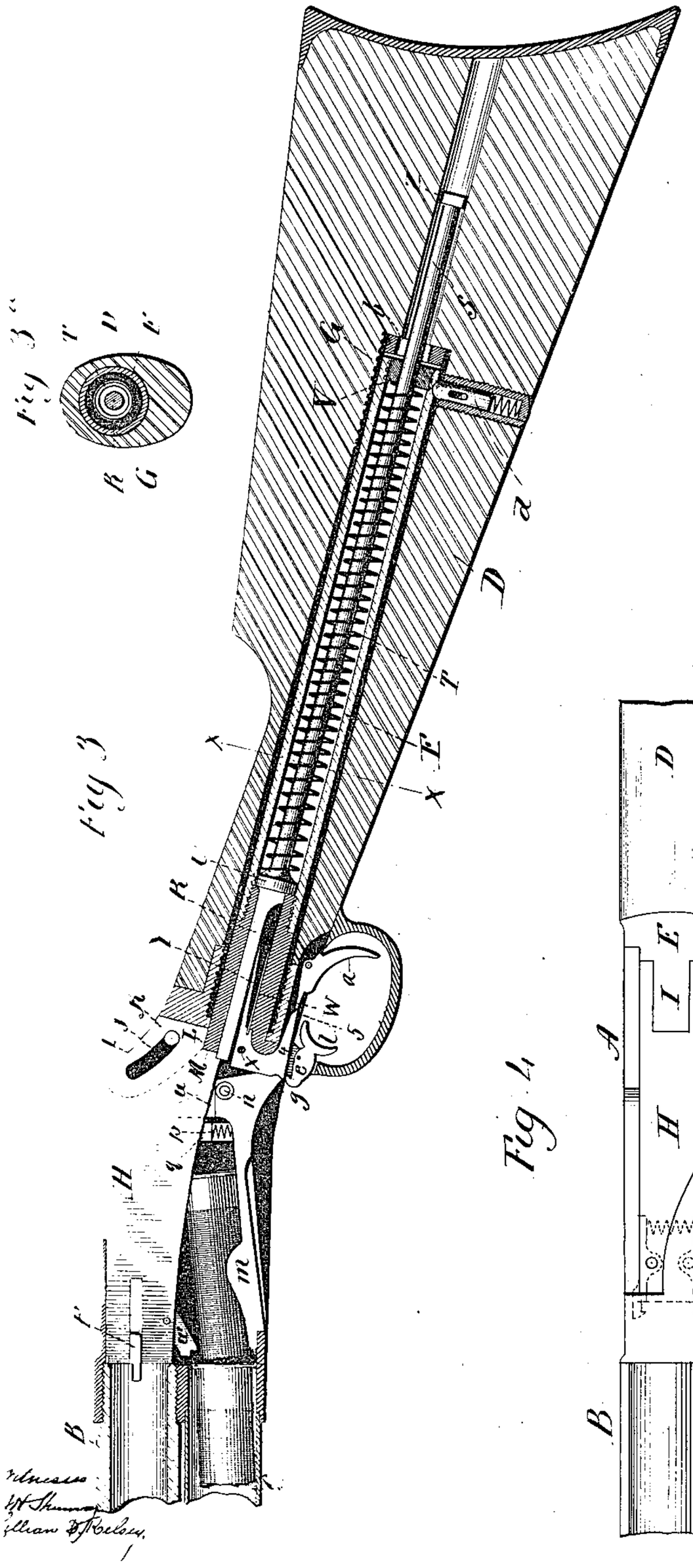

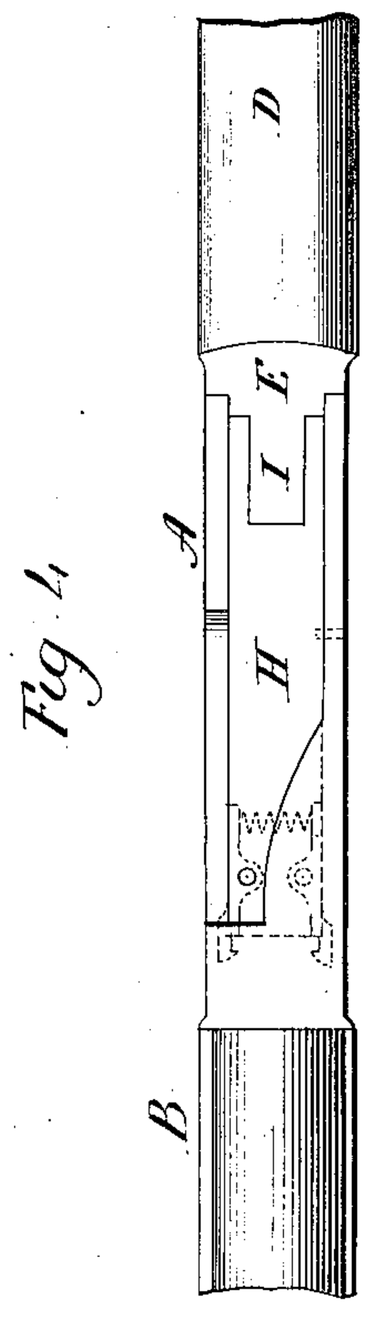

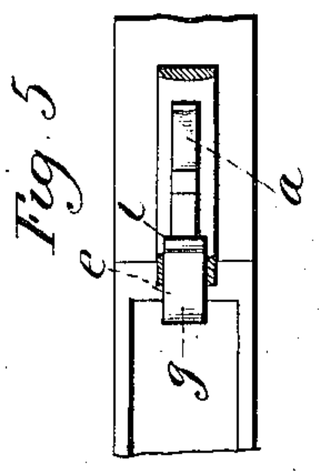

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No Model. 3 Sheets—Sheet 3.

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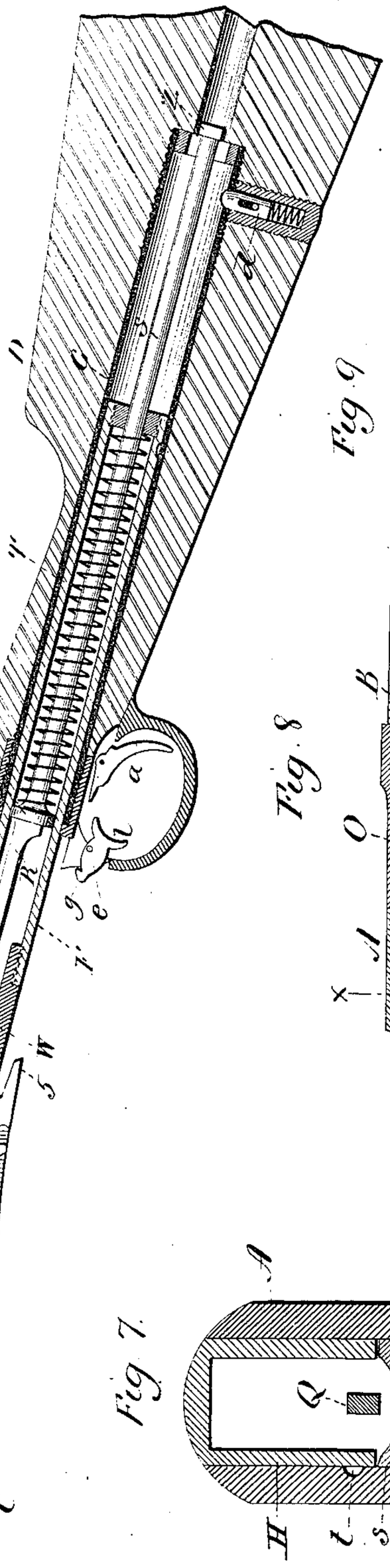
Fig 6



Witnesses
J. H. Shumway
Gilliam D. Kelsey

Fig 9

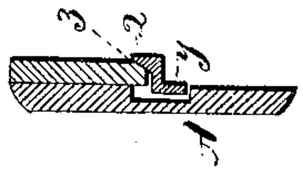


Fig 12.

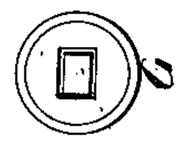


Fig 13

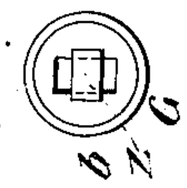


Fig 11

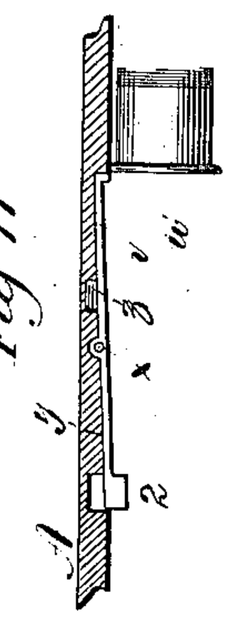


Fig 8

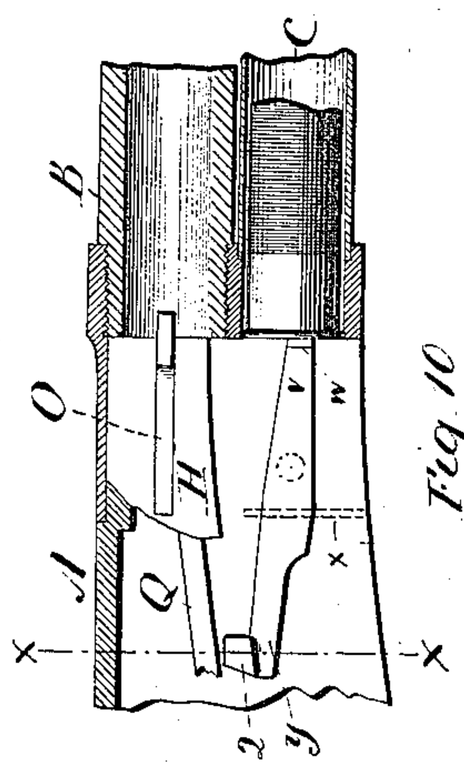


Fig 10

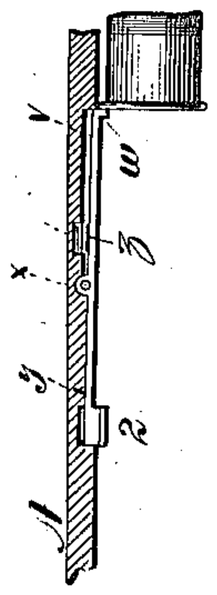
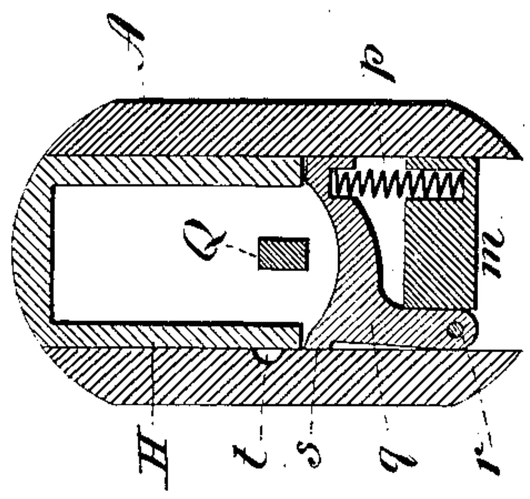


Fig 7.



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UNITED STATES PATENT OFFICE.

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MAGAZINE-FIREARM.

SPECIFICATION forming part of Letters Patent No. 487,659, dated December 6, 1892.

Application filed March 7, 1892. Serial No. 423,999. (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 Magazine-Firearms; and we do hereby declare the following, when taken in connection with accompanying drawings and the letters and figures 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 longitudinal sectional side view of the receiver, showing portions of the barrel and stock, with the mechanism in side view in partial section, the parts in the closed position; Fig. 2, a transverse section through the receiver and breech-piece cutting on line *x x* of Fig. 1; Fig. 2ª, a section cutting on line *y y* of Fig. 1, looking rearward; Fig. 3, the same as Fig. 1 on a reduced scale, showing the stock complete; Fig. 3ª, a transverse section on line *x x* of Fig. 3, looking rearward; Fig. 4, a top view of the receiver and portions of the stock and barrel; Fig. 5, an under side view at the junction of the stock and receiver, the guard broken away to show the dog which locks the receiver in its closed position, the same dog also serving to lock the sear; Fig. 6, the same as Fig. 3, but showing the parts in the open position; Fig. 7, a transverse section cutting on line *x x* of Fig. 1; Fig. 8, an inside view of the receiver, showing the breech-piece in longitudinal section and looking from the right; Fig. 9, a transverse section cutting on line *x x* of Fig. 8; Fig. 10, a longitudinal section of the receiver, showing a top view of the latch as in engagement with the cartridge-head in the magazine; Fig. 11, the same as Fig. 10, showing the latch as disengaged from the cartridge; Fig. 12, a rear end of the tubular guide in the stock, showing the head of the hammer-tail as in the position for detaching the parts; Fig. 13, the same as Fig. 12, showing the head engaged to prevent the detachment of the parts.

This invention relates to an improvement in that class of firearms in which the breech is opened by a forward sliding movement of the barrel, and, while the invention is specially adapted to magazine-firearms, it is also applicable to single-loaders, the object of the invention being the construction of an arm which may be readily operated from the shoulder for rapid firing.

The invention consists in the construction and combination of mechanism, as hereinafter described, and particularly recited in the the claims.

A represents the receiver, to the forward end of which the barrel B is attached in the usual manner and so as to open into the receiver at the rear.

C represents a magazine arranged beneath the barrel, also opening into the receiver at the rear.

Instead of the receiver being attached directly to the stock, as in the more general construction of firearms, the receiver is detached from the stock, and so that the receiver, with the barrel, may be drawn forward from the position seen in Fig. 1 to that seen in Fig. 3 and returned. The forward end of the stock D is provided with a plate E, against which the rear end of the receiver may abut, as seen in Fig. 4, when the receiver is in the rear position.

The receiver is constructed with a spindle F, projecting from its rear end and downwardly inclined according to the downward inclination of the stock. This spindle is made tubular, and within the stock is a tube G, opening through the plate E at the forward end and corresponding to the spindle F, and so that the spindle F may slide longitudinally therein as a guide for the forward and back movement of the receiver and barrel.

H represents the breech-piece, which is arranged longitudinally in the receiver and so as to be free longitudinally; but the breech-piece H stands between the two sides of the receiver, and so as to allow the receiver to move forward and back to take the barrel away from the forward end of the breech-piece. From the plate E is an upwardly and forwardly projecting arm I, which is constructed with an upwardly and forwardly in-

slot J. The rear end of the breech- is slotted corresponding to the arm I, s seen in Fig. 4, so as to embrace the and slide thereon, and through the -piece and the slot J in the arm I is a , which forms a connection between the -piece and the arm I, so that the slot the forward-and-back movement of the -piece. In the normal or closed posi- ie pin K stands at the lower end of the and so that a forward movement im- to the breech-piece will cause the pin ide forward and upward in the slot J, as to raise the rear end of the breech- as it is thus moved forward and as from sition seen in Fig. 3 to that seen in

he receiver, below the breech-piece, a ler L is formed. This appears in Fig. 3 forward end of the spindle, and the -piece is constructed with a correspond- oulder M, and so that when the breech- is in the closed position, as seen in Figs. 3, the shoulder of the breech-piece abuts t the shoulder L of the receiver, and so he breech-piece is locked in its closed n, so as to resist recoil.

barrel is provided with any suitable by which it may be moved forward ckward. (Not shown.) The stock be- ld and the barrel moved forward, the er, spindle, and breech-piece will all together, because the shoulder L en- the shoulder M of the breech-piece; but forward movement of the breech-piece r end will rise, because of the move- f the pin K in the slot J, as before de- d, and so as to take the shoulder M of eech-piece above the shoulder L of the er by the time the pin K has reached per end of the slot in the arm J, and so he breech-piece being there arrested, oulder L of the receiver may pass for- leaving the breech-piece stationary and s rear end in the raised position, the d of the breech-piece resting upon the side of the spindle, as seen in Fig. 6. the barrel is returned, the breech- till remains with its rear end in the ition and rides upon the upper side of ndle until the receiver has returned so to take the shoulder L to the rear of oulder M of the breech-piece. Then as rrel or forward end of the receiver the forward end of the breech-piece force the breech-piece rearward, and r end will be drawn down because of linination of the slot J until the shoul- has passed down forward of the shoul- f the receiver in the fully-closed po- f the breech-piece, and so as to lock eech-piece in that closed position recoil. The breech-piece fits closely n the sides of the receiver and upon n I, so that that connection between ech-piece, the stock, and the receiver ts the receiver and stock against any tendency to turn laterally upon the spindle as an axis. The breech-piece is provided at its forward end with extracting-hooks to engage the head of the cartridge-shell, so as to withdraw it when the breech is opened. The receiver has an opening N at one side, as seen in Fig. 2, through which the shell may be ejected and also through which a cartridge may be inserted when the arm is used as a single-loader, a common construction of receiver.

To support the breech-piece at its forward end and maintain it in its proper relation to the barrel, a longitudinal groove O is made in one side of the receiver, and on that side the extractor-hook P or other suitable projection extends into this groove. The groove is shown in Fig. 8 and is of a length sufficient only to permit the required forward movement of the receiver, the projection from the extractor or breech-piece into the groove working freely therein, and so as to permit the natural rising movement of the forward end of the breech-piece, while the rear end is held as before described, such rising movement being due to the inclination of the spindle with relation to the barrel.

Within the breech-piece the firing-pin Q is arranged, extending from the forward end of the breech-piece through to the rear end, as seen in Fig. 1.

R represents the hammer, arranged in the tubular spindle F. The tail S of the hammer extends rearward through the end of the spindle and through the end of the tube G, and within the spindle a spiral spring T is arranged around the tail of the hammer, adapted to bear forward against a shoulder U on the hammer and against a corresponding shoulder V at the rear end of the spindle, and so that as the hammer is forced rearward the spring will be compressed that the reaction of the spring may force the hammer forward. The nose of the hammer stands in such position with relation to the firing-pin that when the parts are in the closed position the hammer may strike the rear end of the firing-pin, as usual in the arrangement of hammers in other arms. Naturally the hammer will move backward and forward with the spindle, and this condition is taken advantage of as a means for cocking the hammer, and this is produced by means of a sear W, hung upon a pivot X at the rear end of the receiver and below the hammer, as seen in Fig. 3. The sear is provided with a spring Y, the tendency of which is to force the nose or rear end of the sear upward against the hammer.

The rear end of the tail of the hammer is provided with a head Z of larger diameter than the opening through the end of the tube G, and the length of the tail of the hammer is such that the head Z will strike the end of the tube G before the receiver shall have reached its extreme forward position, and, as seen in Fig. 6, thereby arresting the forward movement or advance of the hammer with

the receiver, and so that when the hammer is so arrested the receiver will continue its forward movement and compress the spring and the sear W may swing up forward of the hammer or the shoulder thereon, as seen in Fig. 6. Then when the receiver returns, as in the closing movement, the sear, being engaged with the hammer, as seen in Fig. 1, holds the hammer in the cocked position until the sear is released.

A trigger *a* is arranged in the usual manner and so that a pull upon the trigger will disengage the sear from the hammer, as indicated in broken lines in Fig. 1, and thus leave the hammer free to be thrown forward by the force of its spring, and in which forward movement the hammer will strike the firing-pin Q and communicate its blow to the primer of the cartridge.

In order to conveniently detach the barrel and receiver from the stock, the rear end of the tube G is constructed with an elongated opening *b*, (see Fig. 12,) and the head *Z* of the tail of the hammer is of a shape corresponding to the opening *b*, (see Fig. 13,) but normally stands at an angle to the said opening *b*. If, therefore, the receiver and spindle be turned to bring the head Z into line with the opening *b*, then the head of the tail of the hammer may freely pass through, so as to permit the spindle to be withdrawn, and then when returned after the head of the tail of the hammer has passed through the opening *b* in the rear end of the guide-tube G the receiver is turned into its proper plane with the stock, which brings the head of the tail of the hammer across the opening in the tube, so as to again interlock the hammer with the tube.

To permit the separation of the receiver from the stock, the pin K through the breech-piece is first removed, so as to disconnect the breech-piece from the stock. Then the parts are readily separated.

To engage the stock with the receiver, so as to prevent their accidental separation, a spring-bolt *d* is arranged (see Fig. 3) in the stock, with a beveled or rounded nose adapted to engage a corresponding notch in the spindle when the parts are in the closed position, but so as to yield to a force applied to draw the spindle from its home position. As a further lock to hold the receiver and stock in their closed position a dog *e* is hung in the stock or guard, as upon a pivot *f*, the nose *g* of which is adapted to engage the receiver, as seen in Fig. 5, and also to engage the sear when in the cocked position, as seen in broken lines, Fig. 1. The dog is provided with a spring-bolt *h*, working over a corresponding cam *i*, here represented as in the guard, to yieldingly hold it in either its engaged or disengaged position, and the tail of the dog extends into the guard and terminates in a finger-piece *l*, by which it may be conveniently operated by the same finger which pulls the trigger.

As thus far described the arm is applicable to single-loading purposes.

As a magazine-arm a carrier *m* is arranged in the receiver, below the breech-piece, and hung upon a pivot *n* at the rear, so as to swing in a vertical plane, as from the down position in Fig. 1 to that seen in Fig. 6. In the down position the carrier stands at the rear of the magazine C, and so that the rearmost cartridge in the magazine may pass onto the carrier in the usual manner, and then as the carrier rises that cartridge will be presented between the forward end of the open breech-piece and the rear end of the barrel, so that as the parts are closed the cartridge may be forced from the carrier into the barrel, as usual in magazine-firearms. The carrier at its rear end is provided with an upward extension *u*, by which it may be operated by coming in contact with the breech-piece at the extreme movements, as usual in this class of carriers, and so that as the breech-piece approaches its extreme rear position, as seen in Fig. 6, the carrier will be raised, and then as the parts are closed the projection *u* will strike the breech-piece and be returned to its down position.

To yieldingly hold the carrier in its down position, and so that it may serve as a trap or cover for the opening through the bottom of the receiver for the introduction of cartridges to the magazine, the carrier is provided with a spring *p*, which being engaged by the breech-piece in its closed position, as seen in Fig. 1, will yieldingly hold the carrier in its down position, but so that the carrier may be turned inward for the introduction of cartridges into the magazine. As here represented the spring *p* is employed in connection with an L-shaped lever *q*. (See Fig. 7.) This lever is hung to the carrier by its downwardly-projecting arm upon a pivot *r* and so as to swing in a horizontal vertical plane. The other arm of the lever extends across and bears upon the spring *p*. This lever is constructed with a nose *s*, which as the carrier rises is adapted to engage a corresponding notch *t* in the receiver, and so as to yieldingly hold the carrier in the up position during the transfer of a cartridge from the carrier to the barrel, the nose of the lever easily passing from its engagement with the receiver under the force of the closing movement, so as to release the carrier for its descent.

The breech-piece is provided with a spring-latch *u'* upon its under side, which engages the rear end of the last-inserted cartridge in the magazine, so as to normally hold the column of cartridges in the magazine, the latch yielding as each cartridge is inserted into the magazine, but so as to engage each successive cartridge, a common device in this class of arms. As the parts separate, the rearmost cartridge follows the latch *u'* until the cartridge reaches its position on the carrier.

To prevent the rear movement of the col-

umn of cartridges after the carrier has risen for the transfer of a cartridge to the barrel, a latch *v* (see Figs. 8, 9, 10, and 11) is provided in a recess in the side of the receiver, the nose *w* of the latch being adapted to extend inward, so as to engage the head of a cartridge, as seen in Fig. 10, but to be withdrawn therefrom, so as to leave the head of the cartridge free, as seen in Fig. 11. The latch is hung in the receiver upon a pivot *x*, so as to swing laterally, and extends longitudinally in the receiver.

The latch is provided with a rearwardly-projecting tail *y*, and combined with the latch is a spring *z*, the tendency of which is to force the latch into the engaging position. (Seen in Fig. 10.) At the rear end the tail of the latch is constructed with a beveled shoulder 2, and the breech-piece is constructed with a corresponding cam-shaped surface 3, and which cam-surface 3 as the breech-piece approaches its closed position will engage the shoulder 2 of the tail of the latch, and so as to force that tail inward and correspondingly turn the nose outward, as seen in Fig. 11, and so that the rearmost cartridge in the magazine may escape and pass onto the carrier. Then as the receiver is drawn forward from the breech-piece the cam 3 of the carrier escapes from the shoulder 2 of the latch, when the nose of the latch will be forced inward by its spring, so as to engage the head of the next cartridge, as seen in Fig. 10, which engagement will occur before the said rearmost cartridge shall have reached its rear position on the carrier.

For the convenience of rapid firing the tail 4 of the sear, with which the trigger engages, is beveled upon its rear end, as at 5, and so that should the trigger be held in the drawn position when the receiver is returned to the closed position the beveled end 5 will pass below the trigger, as seen in Fig. 3, so as to draw the sear out of engagement with the hammer. Thus the act of bringing the parts to the closed position will operate automatically to discharge the hammer, it only being necessary that the operator shall hold the trigger in the drawn position or that it be held in that position by some suitable device. Then the firing becomes practically automatic, and consequently limited only to the rapidity with which the barrel and receiver may be moved backward and forward while the operator holds the gun to the shoulder.

While preferring the mechanism described to be arranged in the receiver, it will be evident that various known mechanisms may be arranged in the receiver, so that the receiver, with its guiding-spindle, may operate in the forward movement of the receiver to produce the opening movement of the breech-piece and in the closing movement of the receiver to produce the closing movement of the breech-piece. It is also evident that other known arrangements of hammers may be substituted for the one described. Such modifications are too well known to require particular reference or illustration. The invention is therefore not to be understood as limited to the specific construction of parts, except as hereinafter particularly recited.

We claim—

1. In a firearm, the combination of a receiver carrying the barrel at the forward end, opening at the rear into the receiver, the receiver constructed with a spindle extending from its rear end into the stock, the stock provided with a suitable guide within which the said spindle may slide, substantially as described, and whereby the receiver and barrel are adapted to be moved forward from the stock in opening and toward the stock in closing.

2. In a firearm, the combination of a receiver carrying the barrel at its forward end, opening at the rear into the receiver, the receiver constructed with a spindle extending longitudinally rearward into the stock, the stock provided with a suitable guide for said spindle, a breech-piece arranged longitudinally in the receiver, and an arm projecting forwardly from the stock and constructed with an upwardly and forwardly inclined slot, the breech-piece constructed to embrace said arm and provided with a pin extending through said slot in the said arm and the breech-piece provided near its forward end with longitudinal guides in the receiver, substantially as described.

3. In a firearm, the combination of a receiver carrying the barrel at its forward end, opening at the rear into the receiver, the receiver constructed with a rearwardly and longitudinally projecting spindle extending into the stock, the stock provided with a suitable guide for said spindle to permit the longitudinal movement of the receiver and spindle, the said spindle tubular, a hammer arranged longitudinally in the said spindle, provided with a spring, a stop to limit the forward movement of the hammer in the spindle, and a sear hung in the receiver and adapted to engage the hammer in the closing movement of the parts, substantially as described.

4. In a firearm, the combination of a receiver, a barrel at the forward end of the receiver, opening at the rear into the receiver, the receiver constructed with a spindle extending rearward into the stock, the stock provided with a longitudinal guide for said spindle, and a breech-piece arranged longitudinally in said receiver, the breech-piece adapted for an upward-and-downward movement at its rear end, the stock constructed with an arm projecting from its forward end, and said arm constructed with an upwardly and forwardly inclined slot, the breech-piece embracing the said arm and having a pin through said slot, whereby in the forward movement of the receiver an upward and forward movement is imparted to the rear end of the breech-piece, the breech-piece constructed with a shoulder at its rear end and the receiver with

a corresponding shoulder, the said two shoulders adapted to engage as the parts are brought to the closed position, substantially as described.

5. In a firearm, the combination of a receiver having a barrel attached at its forward end, opening at the rear into the receiver, the receiver constructed with a spindle extending from its rear end longitudinally into the stock, the stock provided with a guide to receive and permit the longitudinal movement of said spindle, and whereby the receiver and barrel may be moved forward from the stock, and a breech-piece arranged in the receiver and adapted to be opened as the receiver is moved forward, with a hammer arranged in said spindle and a sear adapted to engage said hammer, substantially as described.

6. The combination of a receiver having a barrel attached at its forward end, opening at the rear into the receiver, the receiver constructed with a spindle extending from its rear end into the stock, the stock provided with a suitable guide for the back-and-forward movement of said receiver and spindle, and a spring-dog hung upon the stock and adapted to engage the said receiver in the closed position, substantially as described.

7. In a firearm, the combination of a receiver having a barrel at its forward end, opening at the rear into the receiver, the receiver constructed with a spindle extending from its rear end longitudinally into the stock, the stock provided with a guide for the back-and-forward movement of said receiver and its spindle, the spindle made tubular, a hammer arranged in said spindle and adapted for a limited extent of forward movement less than that of the receiver, a sear hung in the receiver and moving therewith and adapted to engage the hammer as the receiver is returned to the closed position, and so as to bring the hammer to full cock, and a dog hung in the stock and adapted to engage said sear in the rear or closed position and while the sear is in engagement with the hammer, substantially as described.

8. The combination, in a firearm, of the receiver having a barrel at its forward end, opening at its rear end into the receiver, a spindle extending from the rear end of the receiver longitudinally into the stock, the stock provided with a guide for the spindle, and so as to permit a forward-and-back movement of the receiver and spindle, and a spring-bolt in the stock adapted to engage the said spindle when the parts are in the closed position, substantially as described.

9. In a firearm, the combination of a receiver having a barrel attached at its forward end and opening at its rear end into the receiver, the receiver constructed with a spindle extending from its rear end into the stock, the stock provided with a tubular guide within which said spindle may move forward and backward in the opening-and-closing movement of the receiver, and a hammer arranged longitudinally in the said spindle, with a spring within the spindle adapted to force the hammer forward, the tail of the hammer extending through the rear end of the guide within which the spindle slides and provided at its rear end with an elongated head, the end of the guide through which the tail of the hammer extends constructed with an elongated slot corresponding in shape to the head of the tail of the hammer, but the said slot and head normally in angular positions with relation to each other, substantially as and for the purpose described.

10. In a firearm, the combination of a receiver carrying a barrel at its forward end, opening at the rear into the receiver, the receiver adapted for longitudinal forward-and-back movement with the barrel from and toward the stock, and a breech-piece arranged longitudinally in said receiver and provided with longitudinal guides at its forward end, the rear end of the receiver connected with the stock by an upwardly and forwardly inclined slot, whereby in the first part of the forward movement of the receiver the rear end of the breech-piece will rise, the breech-piece constructed with a shoulder at its rear end and the receiver with a corresponding shoulder, the said shoulders adapted to engage as the parts are returned to the closed position, substantially as described.

11. In a firearm, the combination of a receiver carrying a barrel at the forward end, opening at the rear into the receiver, the receiver adapted for longitudinal movement from and toward the stock in opening and closing, a breech-piece arranged longitudinally in the receiver and longitudinally guided therein at its forward end and at its rear end connected to the stock by an upwardly and forwardly inclined slot, whereby in the first part of the forward movement of the receiver the rear end of the breech-piece will be raised, a magazine beneath the barrel, opening at the rear into the receiver, a carrier hung below the breech-piece in the receiver, adapted to swing up and down for the transfer of a cartridge from the magazine to the barrel, and a spring between the breech-piece and the carrier adapted to yieldingly hold the carrier in the closed position, substantially as described.

12. In a firearm, the combination of a receiver carrying a barrel at the forward end, opening at the rear into the receiver, the receiver adapted for longitudinal movement from and toward the stock in opening and closing, a breech-piece arranged longitudinally in the receiver and longitudinally guided therein at its forward end and at its rear end connected to the stock by an upwardly and forwardly inclined slot, whereby in the first part of the forward movement of the receiver the rear end of the breech-piece will be raised, a magazine beneath the barrel, opening at the rear into the receiver, a carrier hung below the breech-piece in the receiver,

adapted to swing up and down for the transfer of a cartridge from the magazine to the barrel, and an L-shaped lever *q*, hung to the carrier and so as to swing in a plane at substantially right angles to the carrier, one arm of the lever extending across the carrier, with a spring between the carrier and the said arm, the said lever on its pivot side constructed with a nose *s* and the receiver with a corresponding notch *t*, substantially as and for the purpose described.

13. In a firearm, the combination of a receiver provided with a barrel at its forward end, opening at the rear into the receiver, and with a magazine below the barrel, also opening at the rear into the receiver, the receiver adapted for longitudinal movement from and toward the stock in opening and closing, a breech-piece arranged longitudinally in the receiver, hung by its rear end to an upwardly and forwardly inclined slot at the forward end of the stock, and whereby an upward and forward movement is produced upon the breech-piece in the first part of the opening movement and a corresponding rearward and downward movement to the said rear part of the breech-piece in the last part of the closing movement of the receiver, a lever *v*, hung in the side of the receiver and constructed with a nose *w*, adapted to engage the head of a cartridge, and a suitable spring the tendency of which is to force the said nose into engagement with the cartridge, the lever extending at the rear of the pivot and constructed with a cam-shaped projection 2 at its rear end, the breech-piece toward its rear end constructed with a corresponding cam-shaped surface 3, substantially as and for the purpose 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,
FRANK BROWNING.