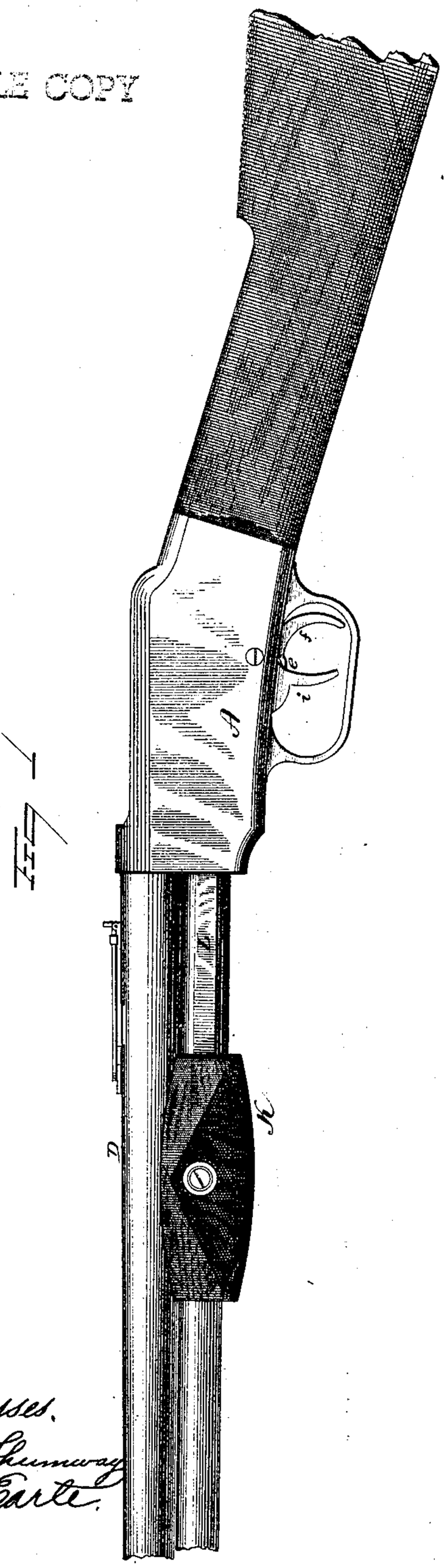
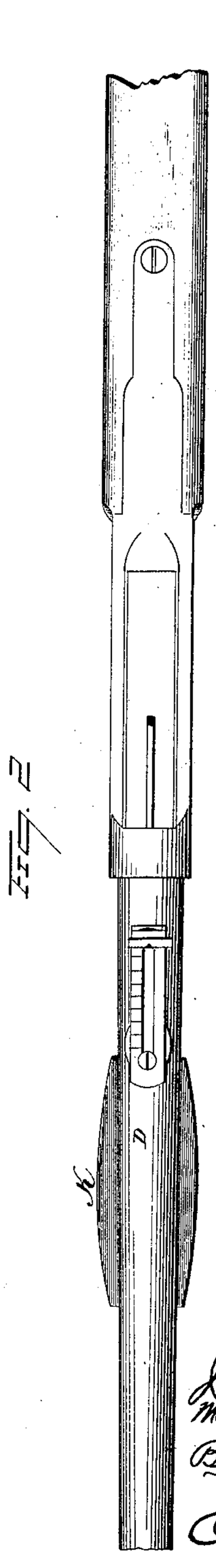
(Model.) 5 Sheets—Sheet 1.

J. M. & M. S. BROWNING.

MAGAZINE FIRE ARM.

No. 367,336. Patented July 26, 1887.





Witnesses.
J. H. Shumway
Fred C. Earle.

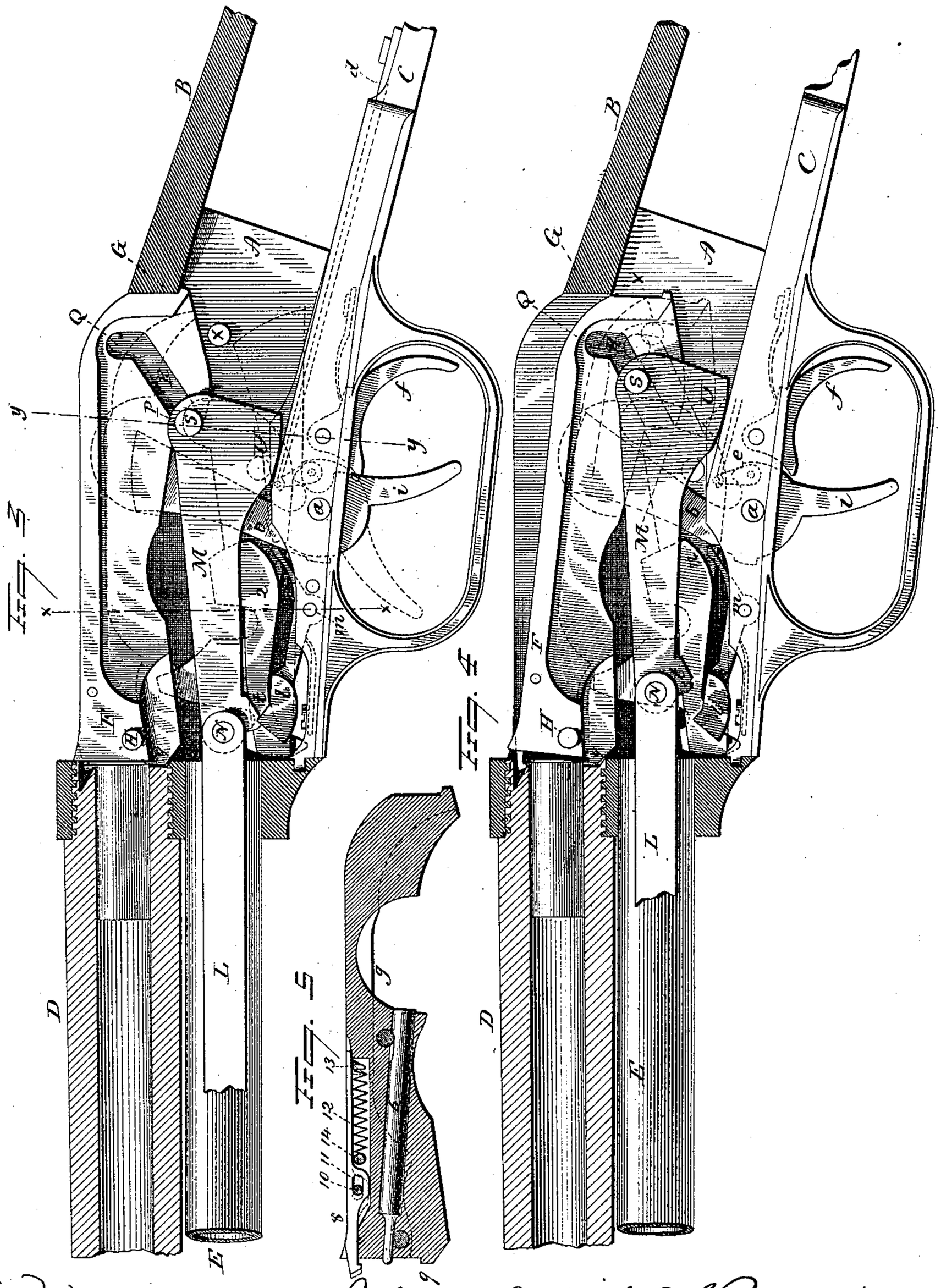
John M. and Matthew S. Browning. Inventors.
By Atty
Thos. C. Earle

(Model.) 5 Sheets—Sheet 2.

J. M. & M. S. BROWNING.

MAGAZINE FIRE ARM.

No. 367,336. Patented July 26, 1887.



Witnesses.
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Wm. C. Earle.

(Model.)

5 Sheets—Sheet 3.

J. M. & M. S. BROWNING.

MAGAZINE FIRE ARM.

No. 367,336. Patented July 26, 1887.

Fig. 6.

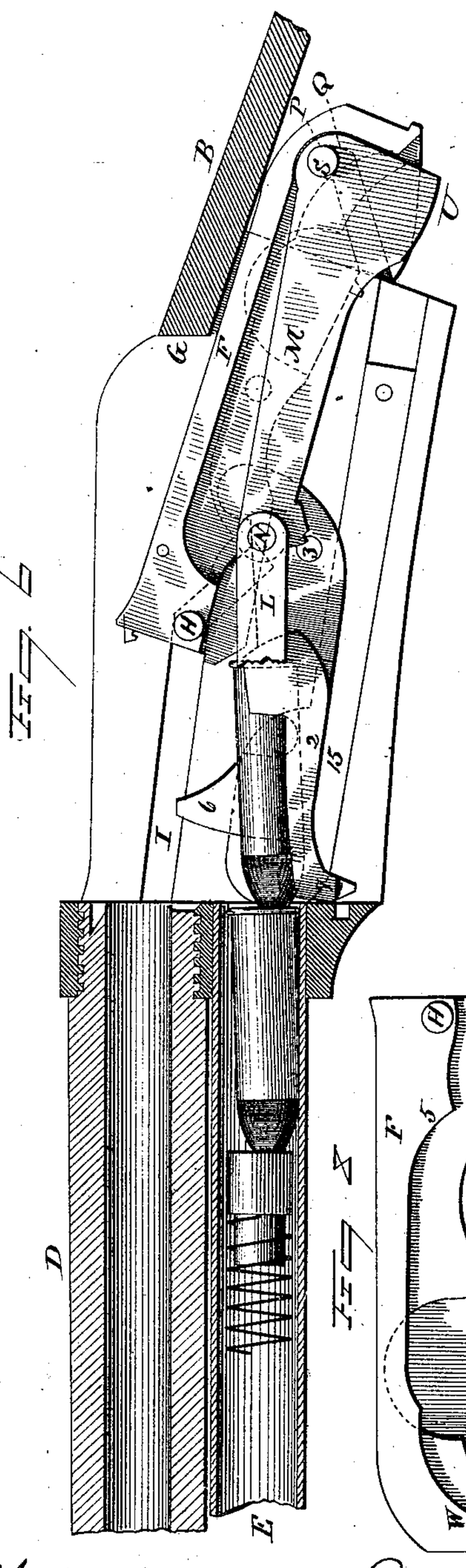

Fig. 7.

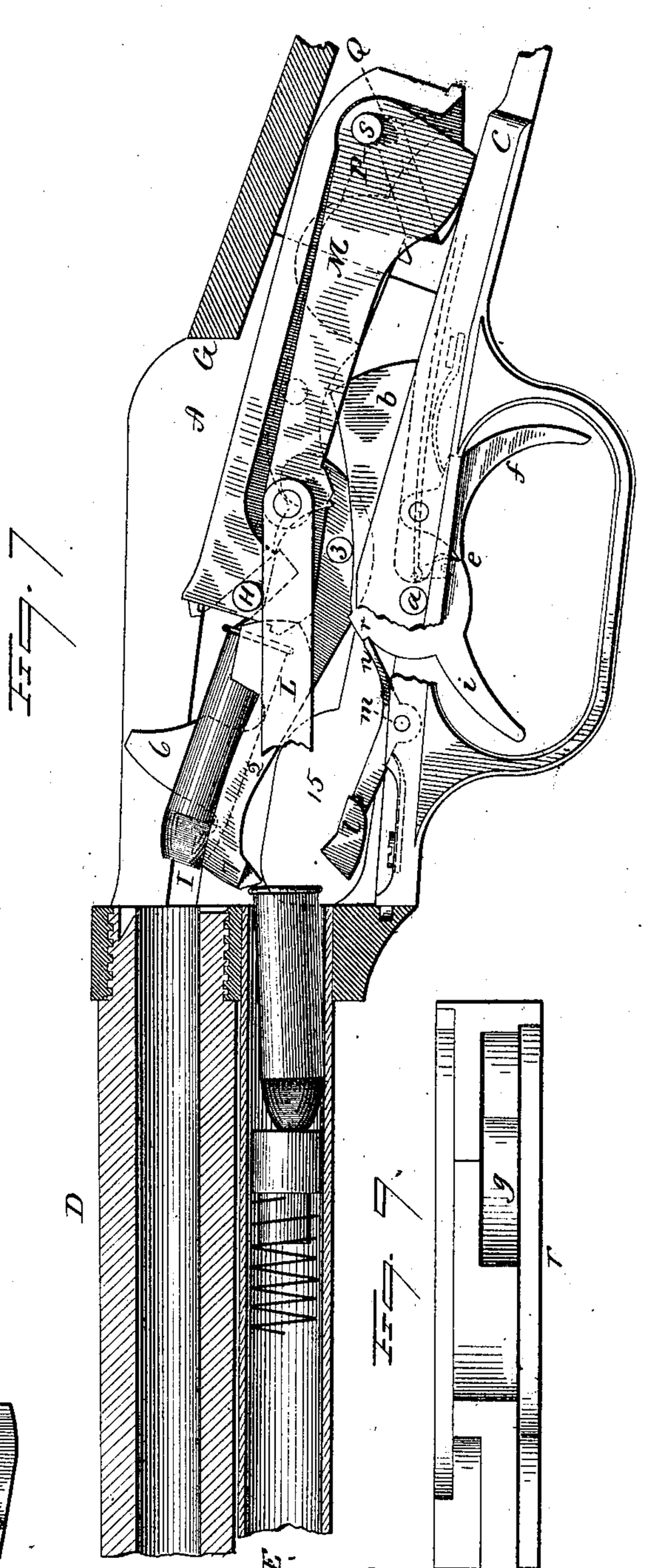

Fig. 7.

Witnesses
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MAGAZINE FIRE ARM.

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Fig. 10

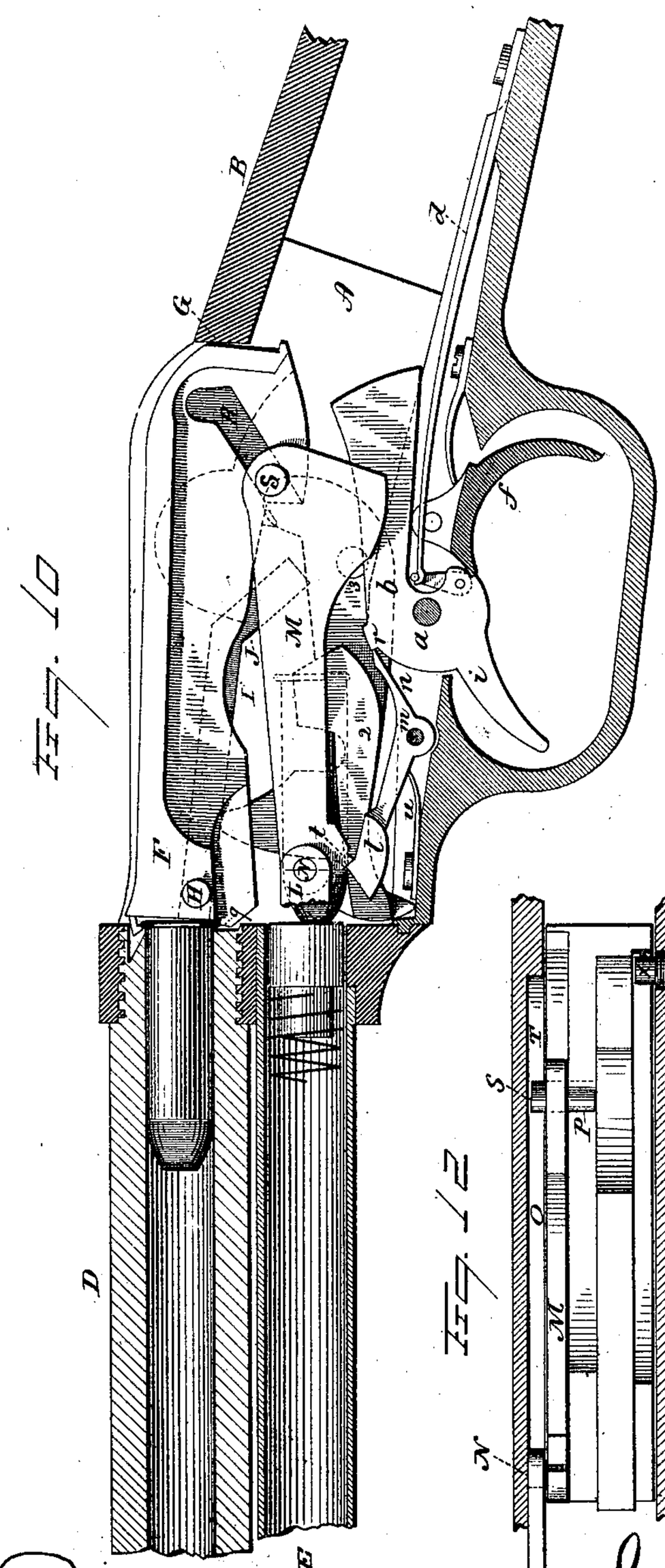


Fig. 11

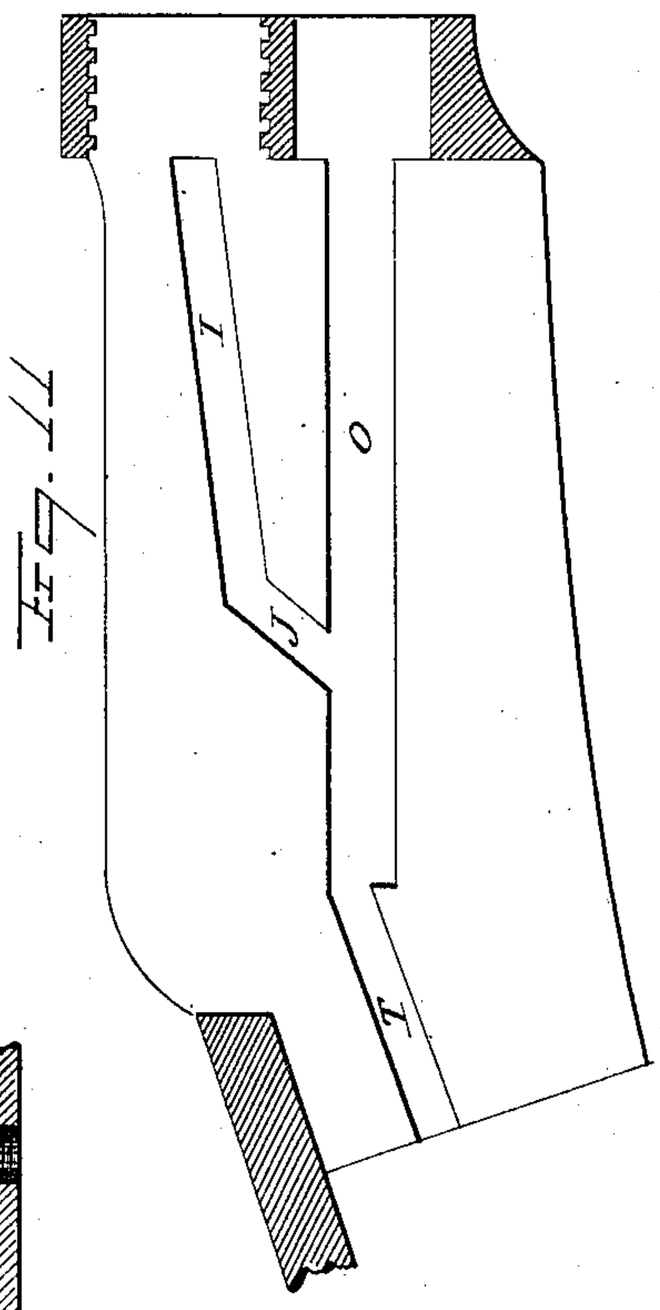


Fig. 12

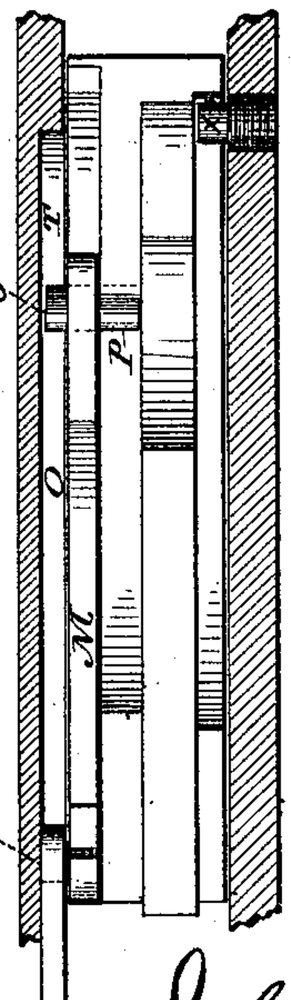
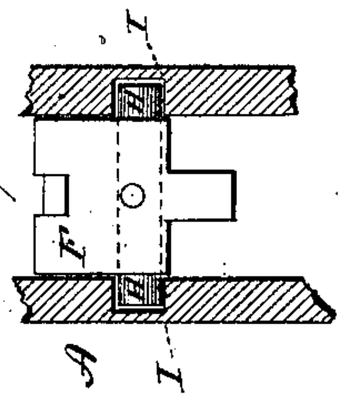


Fig. 13



Witnesses,
D. H. Shumway
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(Model.) 5 Sheets—Sheet 5

J. M. & M. S. BROWNING.

MAGAZINE FIRE ARM.

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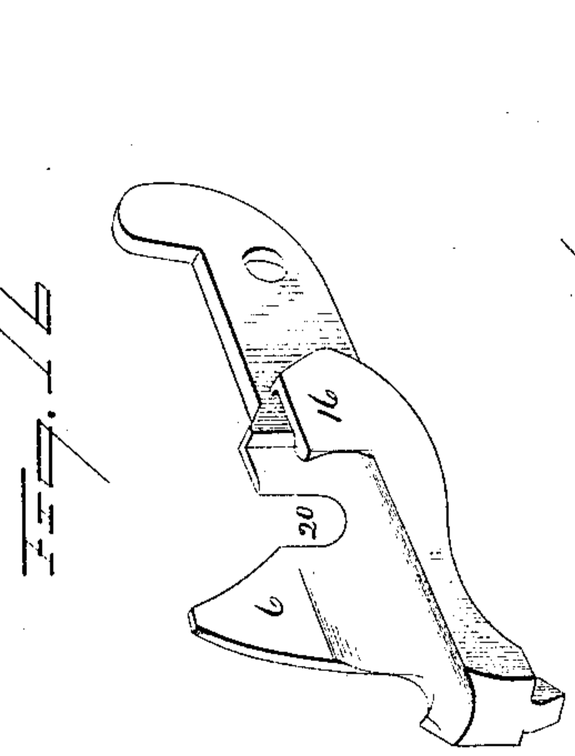

Fig. 16.

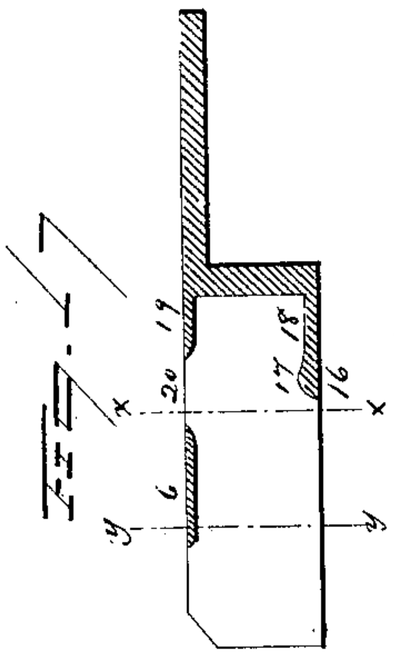

Fig. 17.

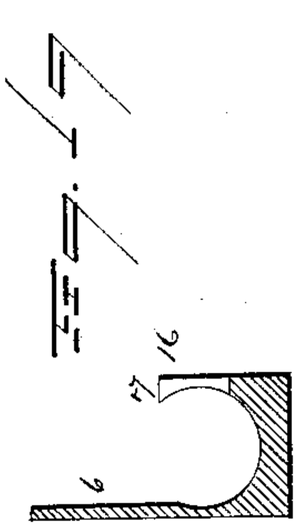

Fig. 18.

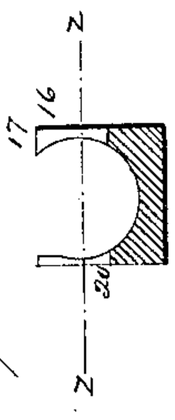

Fig. 19.

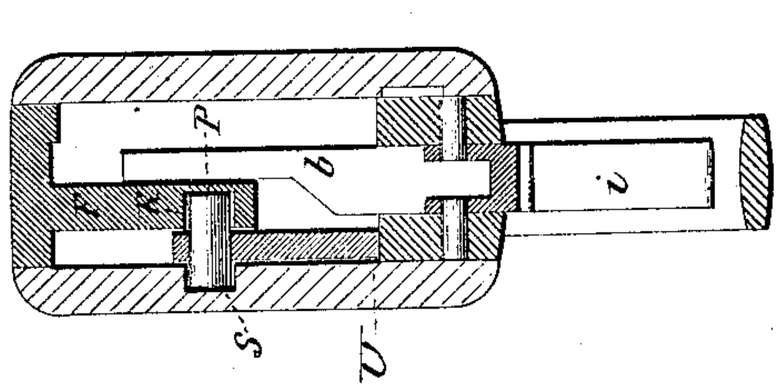

Fig. 20.

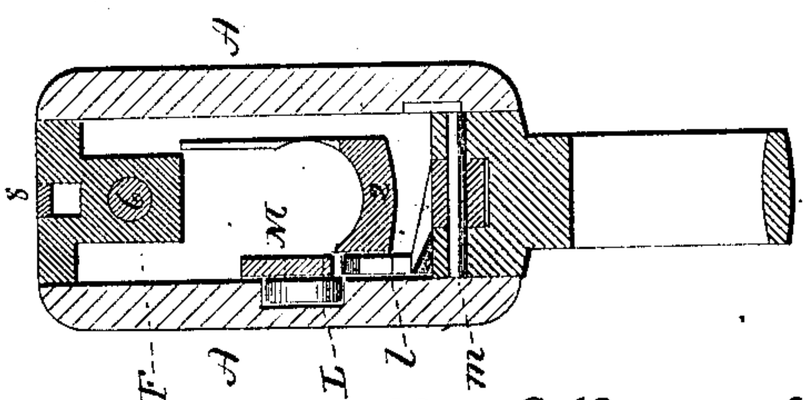

Fig. 21.

Witnesses.
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John M. and Matthew S. Browning
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By Atty.
Wm. C. Earle.

UNITED STATES PATENT OFFICE.

JOHN M. BROWNING AND MATTHEW S. BROWNING, OF OGDEN CITY, UTAH TERRITORY.

MAGAZINE FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 367,336, dated July 26, 1887.

Application filed July 12, 1886. Serial No. 207,733. (Model.)

To all whom it may concern:

Be it known that we, JOHN M. BROWNING and MATTHEW S. BROWNING, of Ogden City, in the county of Weber and Territory of Utah, have invented a new Improvement in Magazine Fire-Arms; and we do hereby declare the following, when taken in connection with accompanying five sheets of 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, broken at both ends; Fig. 2, a top view of the same; Fig. 3, a sectional view through the receiver and barrel, showing a side view of the mechanism of the arm, the parts in the closed or normal condition; Fig. 4, the same as Fig. 3, illustrating the first part of the opening movement in which the breech-piece is unlocked; Fig. 5, a longitudinal central section through the breech-piece; Fig. 6, the same as Fig. 3, showing the breech-piece as approaching its extreme rear position with the carrier down, the hammer mechanism omitted; Fig. 7, the same as Fig. 3, showing the parts in the fully-open position of the breech-piece; Fig. 8, a reverse side view of the breech-piece from that shown in previous figures; Fig. 9, an under side view of the breech-piece, looking upward; Fig. 10, the same section as Fig. 3, showing the breech-piece returned and just before it reaches its extreme closed position; Fig. 11, an inside view of the receiver in the reverse position from that shown in the preceding figures; Fig. 12, a longitudinal section through the receiver, showing an under side view of the breech-piece with its slide or link connection; Fig. 13, a transverse section showing front end view of the breech-piece; Fig. 14, a transverse section on line *x x* of Fig. 3, looking forward; Fig. 15, a transverse section on line *y y*, looking forward; Fig. 16, a perspective view of the carrier detached; Fig. 17, a longitudinal section through the carrier on line *z z* of Fig. 18, looking down; Fig. 18, a transverse section of the carrier on line *x x* of Fig. 17; Fig. 19, a transverse section of the carrier on line *y y* of Fig. 17.

This invention relates to an improvement in that class of magazine fire-arms in which the magazine is arranged longitudinally beneath the barrel and opens into the receiver at the rear below the barrel, and in which the breech-piece is arranged to move longitudinally rearward from the barrel in opening the breech and forward in closing, parts of the invention being applicable to single breech-loaders, the object of the invention being a simple construction, and in which may be combined the advantages of both a longitudinally-movable and a downward and backward swinging breech-piece; and the invention consists, principally, in a breech-piece hung in the receiver upon trunnions near its forward end, the said trunnions working in longitudinal grooves in the receiver and forming pivots upon which the breech-piece may be turned to raise or drop the rear end, and so as to permit the breech-piece after its rear end has dropped from an abutment on the receiver to pass rearward within the receiver to open the breech-piece, and forward to return, and when returned its rear end raised to the locked position, combined with mechanism for imparting opening and closing movement to the breech-piece, and in details of construction, more fully hereinafter described, and particularly recited in the claims.

A is the receiver, which is provided with the usual tang, B, above and, C, below for attachment to the stock. At the forward end the barrel D is attached, opening into the receiver in the usual manner, and beneath the barrel is the usual magazine, E.

F is the breech-piece, arranged in the receiver so that its forward end may abut against the rear end of the barrel to close the breech, as seen in Fig. 3, the breech-piece extending rearward and its rear end adapted to rest against an abutment, G, in the receiver when the breech-piece is in its closed position. Near the forward end of the breech-piece it is provided with a laterally-projecting trunnion, H, preferably one upon each side, as seen in Fig. 13, and in the corresponding sides of the receiver a groove, I, is formed, inclined downward and backward, as seen in Figs. 6 and 11, and so that as the breech-piece is moved rearward the trunnions will follow the said grooves

I and be supported thereby. At the rear end the grooves I turn downward, as seen at J, Fig. 11.

Beneath the barrel, and forward of the receiver, is a handle, K, suitably guided and so as to be grasped by the hand and moved longitudinally toward and from the receiver. From this handle a rod, L, extends rearward through the forward end of the receiver, and to the rear end of the rod a link, M, is hung, as at N, (see Figs. 3 and 4,) and so that the link, while movable longitudinally with the rod L, is also adapted for an up-and-down swinging movement. The rod L works in a groove, O, longitudinally upon the inside of the receiver, as indicated in Figs. 11 and 12.

Near the rear end of the link, and upon the inner side, is a stud, P, which extends and works in a groove, R, in the side of the breech-piece near its rear end, as seen in Fig. 3, the groove R inclined rearward and upward, and at its rear end turns upward to form a recess, Q, at nearly right angles to the axis of the breech-piece. On the outer side of the link M is a similar stud, S, which enters and works in a groove, T, in the side of the receiver, (see Fig. 11,) which groove inclines downward and backward and serves as a support and guide for the rear end of the link M. When the breech-piece is in its closed position and the link in its extreme forward position, as seen in Fig. 3, the stud P stands in the lower part of the groove R and supports the breech-piece in its up or closed position and against the abutment G. If, now, a rear movement be imparted to the handle, the link M will be correspondingly moved, and as the stud P works in the upward and rearwardly inclined groove R in the breech-piece it follows that the rear end of the breech-piece must be drawn downward; as the link cannot rise; hence in the first part of the rear movement of the link in opening, as from the position in Fig. 3 to that seen in Fig. 4, the stud P will operate in the groove R and turn the rear end of the breech-piece downward, as seen in Fig. 4, and until it can escape from the abutment G. The forward end of the breech-piece is, however, supported by its trunnions H in the grooves in the sides of the receiver, so that this first movement of the breech-piece is simply downward at the rear and without substantial longitudinal movement.

As the stud P on the link reaches the rear end of the groove R, as seen in broken lines, Fig. 4, the rear end of the breech-piece drops to bring the recess Q onto the stud P, and so as to bring the rear end of the breech-piece so far below the abutment G that the breech-piece may now pass rearward. Therefore the continued rear movement of the handle will throw the breech-piece toward its rear position, the breech-piece passing below the tang B, as seen in Fig. 6, the trunnions H on the breech-piece working through the grooves I, and until they reach the bend or downward turn J, that position being seen in Fig. 6. Still continuing the rear movement, the trunnions H follow into the downward turn J of the grooves I to the position seen in Fig. 7, thereby dropping the forward end of the breech-piece so that its upper forward end is below the axial line of the barrel, as seen in Fig. 7, and which is the wide-open position for the breech-piece. On the return or forward movement of the handle the link will also move forward, and because the stud P rests in the recess Q of the groove R the breech-piece will be correspondingly moved forward. Its forward trunnions, H, ride up the inclined part J of the grooves I to the position seen in Fig. 6, and then continue in the grooves I until they reach the forward position seen in Fig. 4, where the breech-piece comes against the rear end of the barrel, and which is the position to begin the locking movement of the breech-piece. As the breech-piece can advance no farther forward, its lower edge at the front rests against the barrel as a pivot, upon which its rear end may now rise, and the forward movement of the link continued, the stud P, working in the groove of the breech-piece, passes to its extreme forward position, (seen in Fig. 3,) which last movement forces the rear end of the breech-piece up forward of the abutment G, and so as to rest and be supported thereby against recoil.

To facilitate the locking or rising movement of the breech-piece, or, rather, to relieve the wear of the stud on the link which works in the groove in the receiver, the groove T is made parallel with the inner surface of the lower tang, and the link is constructed with a downward extension, U, to ride thereon, as seen in Fig. 4.

The shells by explosion frequently expand in the cartridge-chamber to a considerable extent, or from other cause stick, so as to require a very considerable power to start them, and this power must be exerted through the handle which operates the breech-piece. To increase the leverage between the handle and the shell to be extracted, or the power of the handle over the breech-piece, and whereby the starting of the cartridge will be facilitated, we construct the breech-piece with a downward and rearwardly curved shoulder, W, upon one side near its rear end, as seen in Fig. 8, and which, when the breech-piece is closed stands above a stationary stud, X, in the receiver, as seen in Fig. 12, and so that as the rear end of the breech-piece falls below the abutment G in its opening movement, as indicated in Fig. 4, this cam-like shoulder on the breech-piece will ride over the stud, and because of its cam shape, in passing over the said stud, a forced rear movement will be imparted to the breech-piece to a slight extent, but sufficient to start the cartridge. This cam action to give a start rearward to the breech-piece in its descent is produced by a very slight exertion upon the handle, much less than would be re-

quired to produce the start directly from the handle, and because of the aid afforded by the said cam-shaped shoulder on the breech-piece and the stationary stud on the receiver in giving the initial start to the breech-piece the wearing strain upon the studs of the link M and the groove in the breech-piece is to a very considerable extent relieved.

In the lower part of the receiver upon a pivot, *a*, the hammer *b* is hung, to which the mainspring *d* is hung in the usual manner, the hammer being adapted to turn downward and backward in cocking, and so that a notch, *e*, on the hub of the hammer may engage the trigger *f*, as seen in Fig. 7, and as indicated in broken lines, Fig. 3. The hammer extends up beneath the breech-piece, and its head end enters into a recess, *g*, upon the under side of the breech-piece, as seen in Fig. 5, and as also seen in broken lines, Fig. 3, and so that the head of the hammer may strike the rear end of the firing-pin *h* to produce the explosion. From the hub of the hammer a finger-piece, *i*, extends downward forward of the trigger, by means of which the hammer may be turned to full-cock, as indicated in broken lines, Fig. 3. This arrangement brings the hammer entirely within the receiver and unexposed. As the breech-piece is moved rearward in opening, as before described, it bears against the head end of the hammer, and so that in its rear movement it will turn the hammer to full-cock to engage the trigger, as seen in Fig. 7, where the hammer will remain when the breech-piece is returned until it be discharged.

To prevent the possibility of the release of the hammer until the breech-piece is in its fully-closed position, a locking-dog, *l*, is hung in the receiver forward of the hammer upon a pivot, *m*, the dog extending forward, its nose *n* rearward toward the hub of the hammer, and so as to engage a corresponding shoulder, *r*, on the hub of the hammer when the hammer is cocked, as seen in Figs. 7 and 10; but when the breech-piece is in the closed position the tail end of the dog rests against the downward projection *t* on the hub of the link M, and so as to hold the nose of the dog out of the path of the shoulder *r* on the hammer, as seen in Fig. 3, so that when the breech-piece is in the closed and locked position the hammer is free to be cocked or discharged; but as the link moves rearward, and before the breech-piece has moved from its abutment, the projection *t* escapes from the tail of the dog, as seen in Fig. 10, so as to permit the nose of the dog under the action of the dog-spring *u* to drop onto the hub of the hammer. Then so soon as the breech-piece has moved so far rearward as to bring the hammer to full-cock, as seen in Fig. 7, the hammer is engaged by the dog and will there be held until it be disengaged by the link, and this disengagement cannot occur until the projection *t* reaches the tail of the dog, as seen in Fig. 10, and after the locking of the breech-piece has commenced, and the unlocking of the dog is not completed until the breech-piece reaches its extreme locked position, as seen in Fig. 3, and is in position for the action of the hammer.

So far the construction described is applicable alike to single breech-loaders as well as to magazine-arms.

As a magazine-arm the carrier 2 is hung in the receiver at the rear beneath the breech-piece upon a pivot, 3, and so as to swing upward and downward. In its downward position, as seen in Fig. 3, it stands in rear of the magazine, and so that a cartridge may pass therefrom onto the carrier, as seen in Fig. 6.

On the carrier in rear of its pivot is an upward projection, 4, against which a shoulder, 5, on the breech-piece (see Fig. 5) is adapted to bear as the breech-piece approaches its closed position, as seen in Fig. 6, and so that as the breech-piece completes its rear movement, as from Fig. 6 to Fig. 7, the carrier is raised to present the cartridge received from the magazine forward of the front face of the breech-piece, as seen in Fig. 7, and so that as the breech-piece is next moved forward it will force the cartridge forward into the barrel, and as the breech-piece thus moves forward it will strike an upward projection, 6, on the carrier and force the carrier to its down position. At the forward end of the carrier it is constructed with a downward projection, 7, which serves as a guard or stop to prevent the next cartridge in the magazine from passing rearward until the carrier shall have reached its down position. The construction of the carrier may be any of the known constructions adapted to swing upward and downward and to be so moved as the breech-piece moves rearward and forward.

To prevent the cartridge from being forced from the carrier in its upward movement, we construct it, as seen in Fig. 16, with a wing, 16, upon one side—say the left-hand side—extending from its rear end forward, the wing having an inward overhang, 17, upon its upper edge, as seen in Fig. 18, the forward edge of the wing inclined outward nearly to a sharp edge, as indicated in Fig. 17, and with an inward projection near the forward end to form a recess, 18, at the rear, and upon the opposite side at the rear end is a shorter wing, 19, its forward edge inclined outward to nearly a sharp edge, as seen in Fig. 17. The upward projection 6, by which the carrier is depressed, is forward of the wing 19, and so as to leave a space, 20, between the wing 19 and the projection 6 opposite the inward projection near the forward end of the wing 16.

The distance between the inside of the wing 16 at its inwardly-projecting forward end and the inside plane of the wing 19 and projection 6 upon the opposite side is less than the diameter of the head of the cartridge; but the space between the wing 16 in rear of the said inward projection and the inside plane of the opposite wing, 19, is greater than the diameter of the head of the cartridge.

As the cartridge passes onto the carrier its

head on one side arrives at the forward end of the wing 16, and because of the inclined edge of that wing it is forced to the opposite side, bringing the head into the recess 20, and, still moving rearward, the opposite side of the head now strikes the forward inclined edge of the wing 19, which forces the cartridge to the opposite side, bringing the rear end of the cartridge into the recess 18 beneath the overhang 17, and the head of the cartridge comes to a rest at the rear end of the carrier. Thus the cartridge is brought beneath the overhang, and so that as the carrier rises the overhang will prevent the cartridge from being thrown upward from it, and as the breech-piece moves forward to transfer the cartridge to the barrel the head end of the cartridge makes the same movement to pass beyond the inwardly-projecting surface of the wing 16 as it did to pass onto the carrier, and so that it readily escapes from the grasp of the carrier.

Upon the top of the breech-piece the extractor-hook 8 is arranged, and beneath it, on the breech-piece, is a shoulder, 9, so that as the hook engages the upper edge of the cartridge-head, as seen in Fig. 3, the lower edge of the cartridge will rest on the shoulder 9, as in the usual construction of extractors; but because the breech-piece during the first part of its opening movement turns downward at the rear and as upon a pivot at its forward end, so that the upper face of the breech-piece turns away from the cartridge, while the lower edge bears against it, it is necessary to provide the extractor with a longitudinal movement, that it may yield to this first movement of the breech-piece. To this end it is adapted to slide longitudinally on the breech-piece, resting in a groove in the breech-piece, with a pin, 10, in the breech-piece through a longitudinal slot, 11, in the extractor, (see Fig. 5,) and beneath the rear portion of the extractor-hook is a spring, 12, against one end of which a shoulder, 13, on the extractor bears, the other end of the spring resting against a shoulder or stud, 14, in the breech-piece, and so that as the extractor moves forward, as indicated in broken lines, the spring will be compressed; but when released the spring will return it to its normal position. This arrangement permits the extractor to yield in the turning of the breech-piece, as from the position in Fig. 3 to that seen in Fig. 4, and so that it will maintain its hold upon the cartridge-head, and as it or the shell is drawn from the barrel it will follow the breech-piece, the forward end of the shell being supported in the barrel until it can escape at the rear end of the barrel. Then the reaction of the extractor-spring will tend to give the cartridge a quick upward turn and sufficient to eject it from the arm, so that the extractor itself becomes the ejector.

By dropping the forward end of the breech-piece, as described, by means of the downward-inclined portion J of the grooves I, it will be observed, as seen in Fig. 7, that the barrel is open to the rear and clear over the abutment G, so that the person using the arm may, as the breech-piece is drawn to its open position, look directly through the barrel without taking the arm from the shoulder, and thus at each discharge a clear inspection of the barrel is afforded. This also greatly facilitates the cleaning of the barrel from the breech end.

The magazine is charged by an opening through the side of the receiver, closed by a spring-cover, 15, (see Figs. 6 and 7,) this cover being free to open when the carrier is in its raised position, as seen in Fig. 7, the carrier itself serving as a latch to engage each cartridge as it is introduced.

We have represented the breech-piece as moved by a handle forward of the receiver beneath the barrel; but it may be otherwise operated—as, for illustration, by means of a lever beneath, as seen in Fig. 16, the link hung to the upper arm of the trigger-guard lever, and so that, turning the lever downward and forward in the usual manner of this class of levers, substantially the same movement will be imparted to the link as would be by the handle; consequently the operative parts of the arm move in the same manner. We therefore do not wish to be understood as limiting our invention to either of the known means for imparting the longitudinal reciprocating movement to the breech-piece.

Throughout the specification we have indicated the sliding piece M, which communicates both the swinging and reciprocating movement to the breech-piece, as a link, because of its being hung to the rod L at the forward end and making connection with the breech-piece at its rear end; but, it being guided in the receiver, it may be considered as a slide, having a stud-and-groove connection with the breech-piece at its rear end, the slide receiving a longitudinal reciprocating movement, which communicates both the up-and-down swinging movement and the longitudinal reciprocating movement to the breech-piece.

While we prefer to arrange the hammer, as described, beneath the breech-piece, and so that it will be concealed, it will be understood that the hammer may be hung—say upon the side of the receiver—to strike a firing-pin longitudinally through the breech-piece, as in many known arms—a construction too well known to require illustration.

We claim—

1. In a fire-arm having a barrel opening into the receiver at its rear end, a longitudinal breech-piece arranged in the receiver in rear of said barrel, the receiver constructed with an abutment to support the rear end of the breech-piece when in its closed position, the breech-piece hung upon trunnions at its forward end in longitudinal guides in the receiver, the said trunnions forming pivots upon which the breech-piece may swing up or down to bring its rear end against or take it from said abutment, the said longitudinal guides permitting the longitudinal reciprocating movement of the breech-piece in opening and closing, a

slide longitudinally guided in the receiver and in stud-and-groove connection with the said breech-piece at its rear end, with mechanism, substantially such as described, to impart longitudinal movement to said slide, substantially as specified, and whereby under the first part of the rear movement of the said slide a downward-swinging movement is imparted to the rear end of the breech-piece to release it from the abutment and then the longitudinal rear movement continued to bring the breech-piece to its extreme open position, and on the return movement of the slide the breech-piece is first brought to its forward position and then raised at the rear end to bring it against its abutment in the receiver.

2. In a fire-arm having a barrel opening into the receiver at its rear end, a longitudinal breech-piece arranged in the receiver in rear of said barrel, and the receiver constructed with an abutment to support the rear end of the breech-piece, the breech-piece hung upon trunnions at its forward end in longitudinal guides in the receiver, the said trunnions forming pivots upon which the breech-piece may swing up or down to bring its rear end against or take it from said abutment, said longitudinal guides permitting the longitudinal movement of the breech-piece in opening and closing, and the said guides for the trunnions inclined downward at their rear end, and whereby the forward end of the breech-piece is dropped as it approaches its extreme open position, a slide longitudinally guided in the receiver and in connection with the said breech-piece at its rear end, with mechanism, substantially such as described, to impart longitudinal reciprocating movement to said slide, substantially as specified.

3. In a fire-arm having the barrel opening into the receiver at the breech, the combination therewith of a breech-piece arranged longitudinally in the receiver in rear of the barrel, the breech-piece constructed with a laterally-projecting trunnion upon one or both sides near its forward end, and the receiver with corresponding longitudinal grooves in which said trunnions work and rest to support the said breech-piece, a slide arranged in the receiver to work in a plane parallel with the plane of the breech-piece, its rear end constructed with a laterally-projecting stud and the receiver with a corresponding groove in which said stud may work as a guide for the slide, the slide being adapted to move longitudinally with the breech-piece, the breech-piece constructed with a rearward and upwardly inclined groove, the said slide also constructed with a laterally-projecting stud to work in said inclined groove in the breech-piece, the receiver also constructed with an abutment at the rear of the breech-piece, against which the rear end of the breech-piece is adapted to rest when in its closed position, with mechanism, substantially such as described, to impart a back and forward movement to said link, substantially as specified, and whereby under the first part of the rear movement of the link the rear end of the breech-piece will be thrown downward and away from its abutment and then in the continued movement of the said link will pass rearward beneath the upper tang of the receiver to its fully-open position.

4. In a fire-arm having a barrel opening into the receiver at its rear end, a longitudinal breech-piece in the receiver in rear of the barrel, with an abutment in the receiver at the rear of the breech-piece to support said breech-piece in its closed position, the said breech-piece hung at its forward end upon trunnions, the said trunnions permitting an up-and-down swinging movement to the rear end of the breech-piece, and the said trunnions arranged in guides to permit longitudinal movement of the breech-piece, a hammer hung in the receiver below the breech-piece, its nose adapted to strike into a recess upon the under side of the breech-piece, with a longitudinal firing-pin in the breech-piece, its rear end in said recess and in the path of the said hammer when the breech-piece is in its closed position, with mechanism, substantially such as described, to impart the up-and-down swinging movement to the rear end of the breech-piece and its longitudinal opening and closing movement, substantially as described.

5. In a fire arm having a barrel opening into the receiver at the rear, the combination of the breech-piece F, hung upon trunnions at its forward end, the said trunnions resting in corresponding longitudinal grooves in the receiver, the said breech-piece also constructed with a groove, R, upon its side near the rear end inclined upward and backward, the receiver constructed with an abutment, G, against which the rear end of the said breech-piece is adapted to bear, a link, M, having a stud, S, upon its outer side, the receiver constructed with a corresponding groove, T, as a guide for the movement of said link, the said link also provided with a stud, P, adapted to work in said inclined groove R in the breech-piece, a longitudinally-sliding handle forward of the receiver, and a rod extending therefrom into connection with said link, substantially as described.

6. In a fire arm having a barrel opening into the receiver at the rear end, the breech-piece F, hung upon trunnions at its forward end, working in corresponding longitudinal guides in the receiver, an abutment, G, at the rear end, against which said breech-piece bears in its closed position, a link, M, arranged for longitudinal movement in the receiver and in connection with said breech-piece near its rear end, and adapted to impart an up-and-down swinging movement to the rear end of the breech-piece, and also a longitudinal reciprocating movement to the breech-piece, a hammer hung beneath the breech-piece, a firing-pin in the breech-piece, which the said hammer is adapted to strike, the dog *l*, hung forward of the hammer, its nose *n* adapted to engage a cor-

responding shoulder on the hub of the hammer, the tail of the dog extending forward beneath the link M, and the said link constructed with a projection, *t*, adapted to bear upon the tail of the said dog when the breech-piece is in its closed position, with mechanism, substantially such as described, to impart longitudinal movement to said link, substantially as described, and whereby the nose of the dog will be taken out of the path of the hammer as the breech-piece comes to its locked position, substantially as described.

7. In a magazine fire-arm in which the magazine is arranged beneath the barrel, both the barrel and magazine opening into the receiver at the rear, the combination therewith of a breech-piece hung upon trunnions near its forward end, the said trunnions arranged in longitudinal guides in the receiver, the receiver constructed with an abutment in rear of the breech-piece and against which the rear end of the breech-piece is adapted to abut when in its closed position, a longitudinally guided and reciprocating slide in the receiver parallel with the breech-piece, provided with a stud and the breech-piece with a corresponding upward and rearwardly inclined groove near its rear end, mechanism, substantially such as described, to impart the said longitudinal reciprocating movement to said slide, a carrier hung beneath the breech-piece, and adapted to swing up and down for the transfer of a cartridge from the magazine to the barrel, substantially as described.

8. In a magazine fire-arm having the magazine arranged beneath the barrel and both the barrel and magazine opening into the receiver at the rear, the longitudinal breech-piece arranged in the receiver in the rear of said barrel, the receiver constructed with an abutment to support the rear end of the breech-piece when in its closed position, the breech-piece hung upon trunnions at its forward end in longitudinal guides in the receiver, the said trunnions forming pivots upon which the breech-piece may swing up or down to bring its rear end against or take it from said abutment, the said longitudinal guides permitting the longitudinal reciprocating movement of the breech-piece for opening and closing, a slide longitudinally guided in the receiver and in stud-and-groove connection with said breech-piece at its rear end, mechanism, substantially such as described, to impart longitudinal movement to said slide, and a carrier hung at the rear beneath said breech-piece and adapted to swing up and down in the transfer of a cartridge from the magazine, the said carrier constructed with an upward projection in rear of its pivot in the path of the breech-piece in its opening movement, and also constructed with a projection forward of its pivot in the path of the breech-piece in its closing movement, substantially as described.

9. In a magazine fire-arm in which the magazine is arranged beneath the barrel and both the barrel and magazine opening into the receiver at the rear, the combination therewith of the longitudinal breech-piece F, the receiver constructed with an abutment, G, at the rear, against which the breech-piece may bear in its closed position, the sliding handle K beneath the barrel, the rod L, extending from the handle into the receiver, the link M, its forward end hung to said rod and its rear end in stud-and-groove connection with said breech-piece, the hammer *b*, hung beneath the breech-piece and extending upward, adapted to enter a recess in the under side of the breech-piece, a firing-pin in said breech-piece, the rear end of which extends into said recess and against which the hammer may strike, the hammer constructed with a finger-piece, I, extending through into the trigger-guard, and with a carrier beneath the breech-piece, arranged to swing up and down in the transfer of a cartridge from the magazine to the barrel, all substantially as described.

10. In a magazine fire-arm in which the magazine is arranged beneath the barrel and both the barrel and magazine open into the receiver at the rear, a carrier hung in the receiver at the rear and adapted to swing up and down in the transfer of a cartridge from the magazine to the barrel, the said carrier constructed with a wing, 19, upon one side at its rear end, and an upward projection, 6, forward of said wing, leaving a recess, 20, between said wing and projection, the forward edge of the said wing inclined outward, with a wing, 16, upon the opposite side at the rear end and extending forward to a point opposite said recess 20, the said wing having an inward overhang at the top, and with an inward projection at its forward end, so as to form a recess, 18, at the rear, the extreme forward edge of the said wing inclined outward, substantially as and for the purpose described.

11. In a fire-arm in which the barrel is open into the receiver at the rear, and having a longitudinal breech-piece arranged to abut against a shoulder in the receiver at the rear, and in which the first movement of the breech-piece in opening is downward at the rear to escape from the abutment and then longitudinally rearward, the combination therewith of an extractor arranged on the top of the breech-piece and guided for longitudinal movement, a spring the action of which is to force the said hook rearward, but yield to permit its forward longitudinal movement, and the breech-piece constructed with a shoulder on its face below said hook, and upon which the lower edge of the head of the cartridge may rest while the upper edge is engaged by said hook, substantially as described.

JOHN M. BROWNING.
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Witnesses:
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A. S. MERCER.