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# J. M. & M. S. BROWNING.

## MAGAZINE FIRE ARM.

No. 336,287. Patented Feb. 16, 1886.

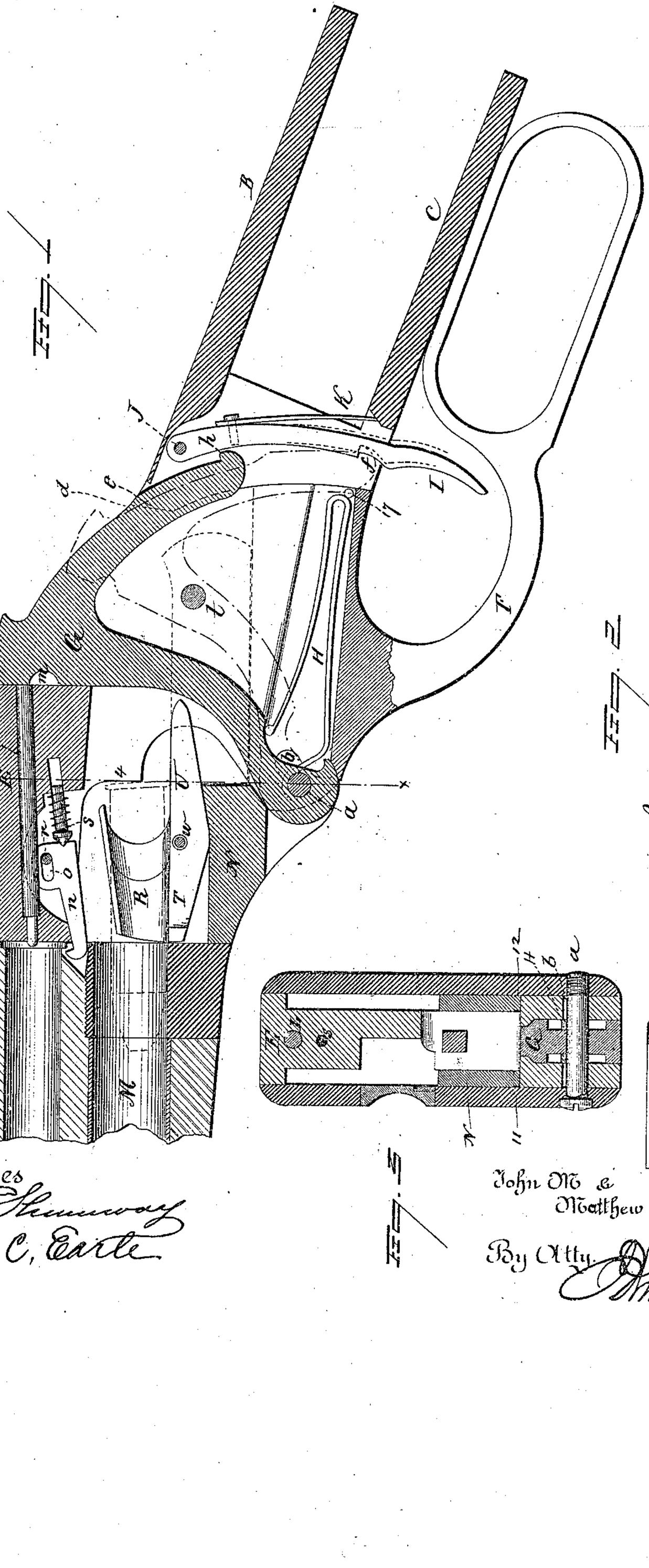

Fig. 1.

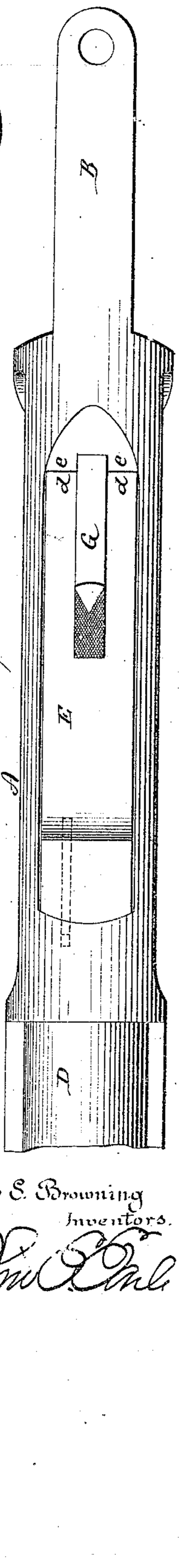

Fig. 2.



Fig. 3.

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## MAGAZINE FIRE ARM.

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Fig. 5.

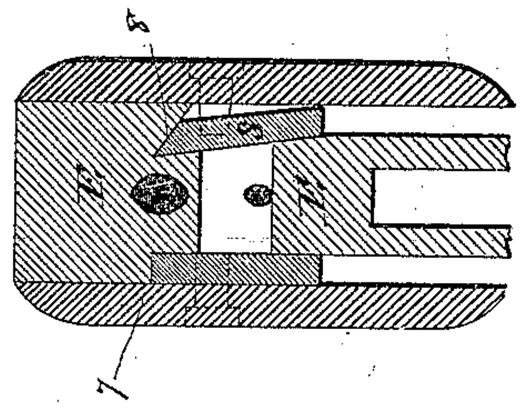

Fig. 7.

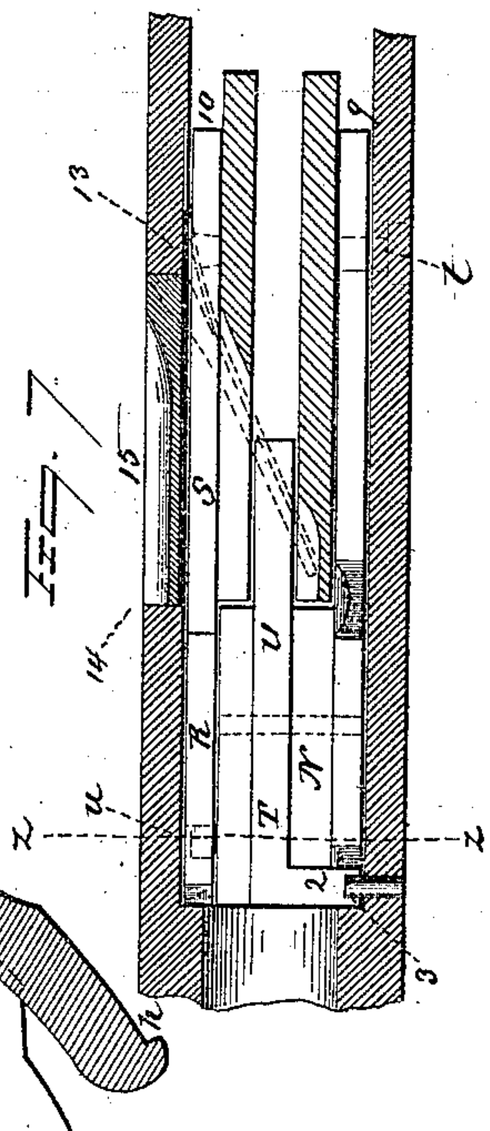

Fig. 4.

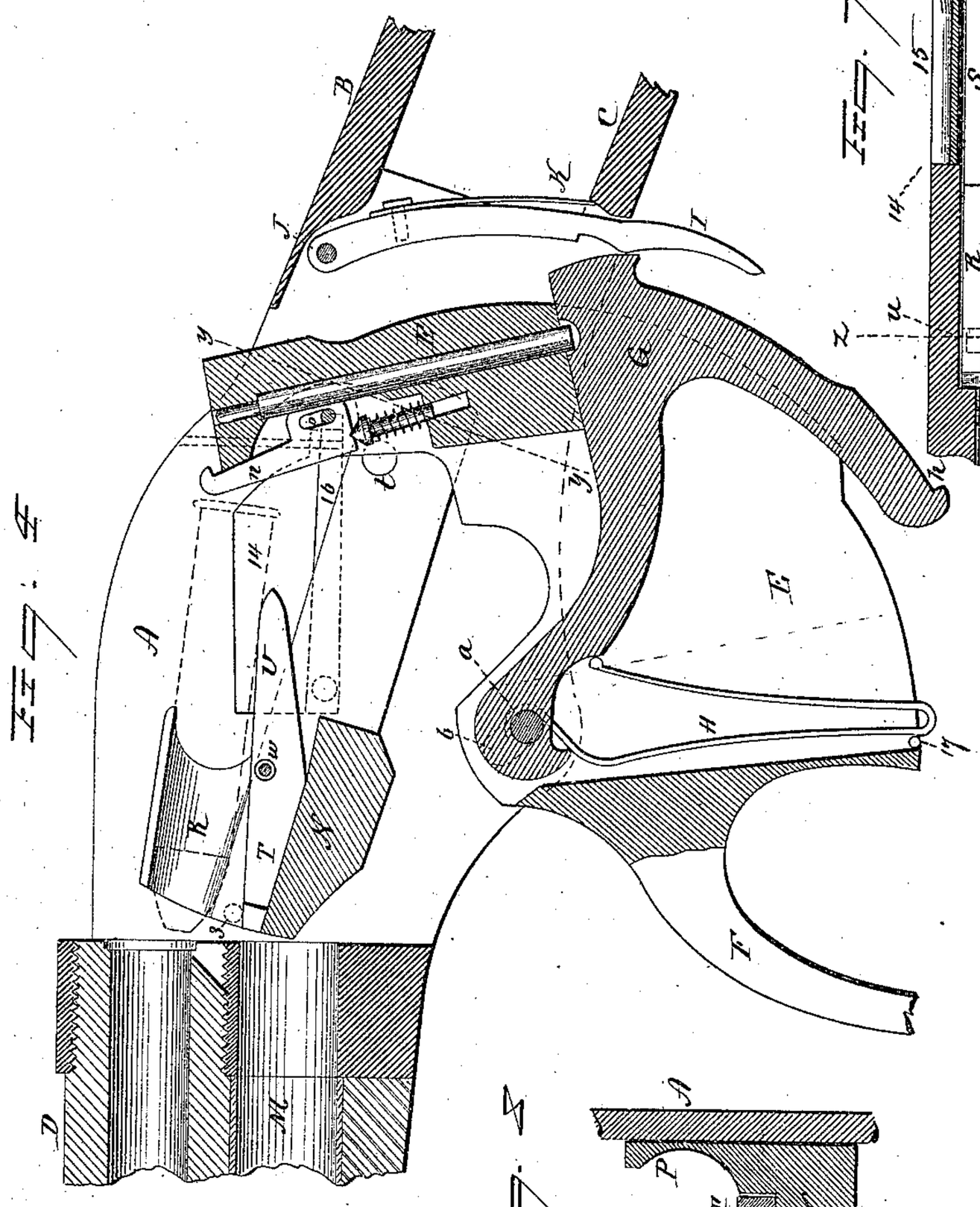

Fig. 6.



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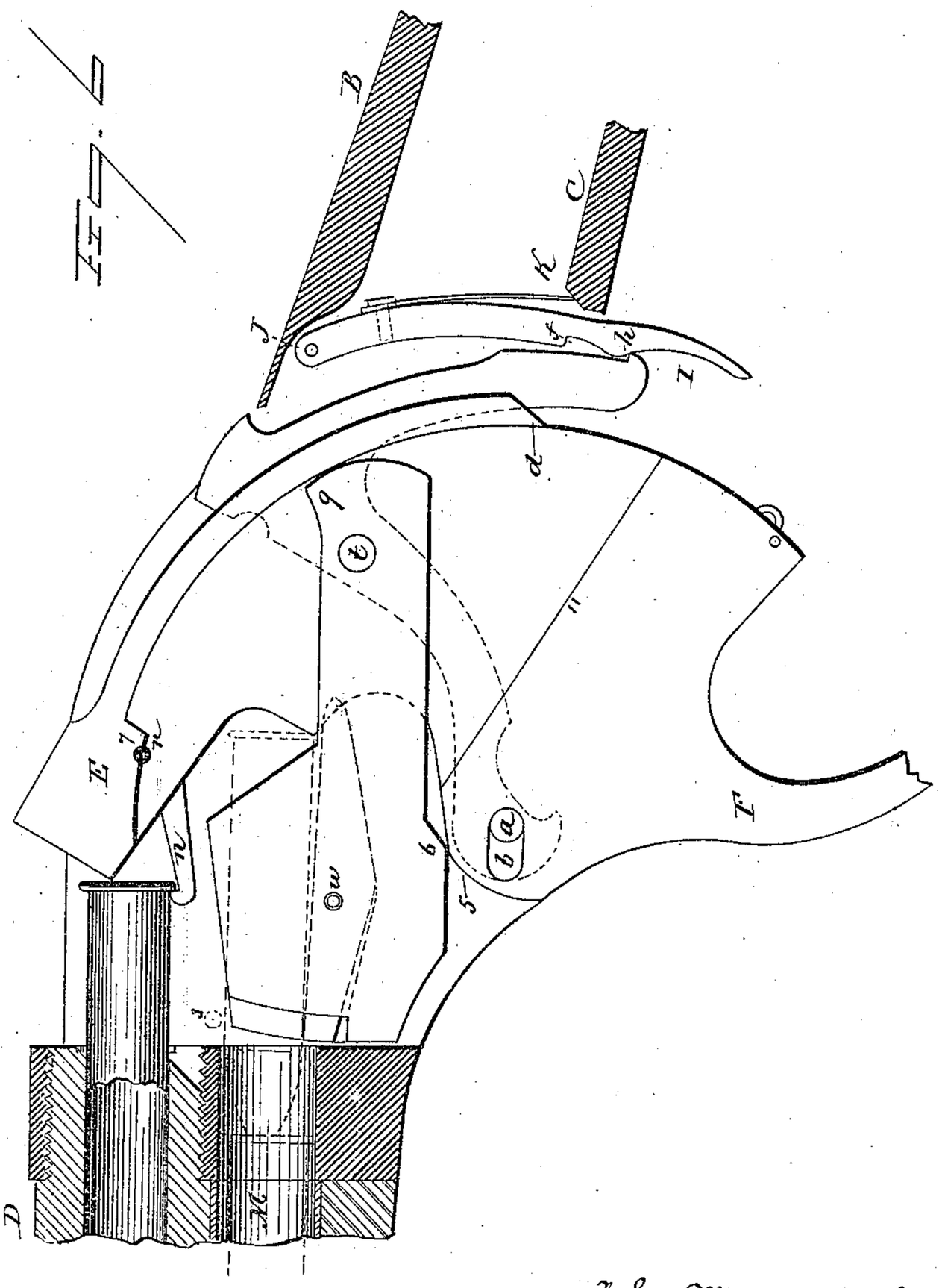
## MAGAZINE FIRE ARM.

No. 336,287. Patented Feb. 16, 1886.

Fig. 7.

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## MAGAZINE FIRE ARM.

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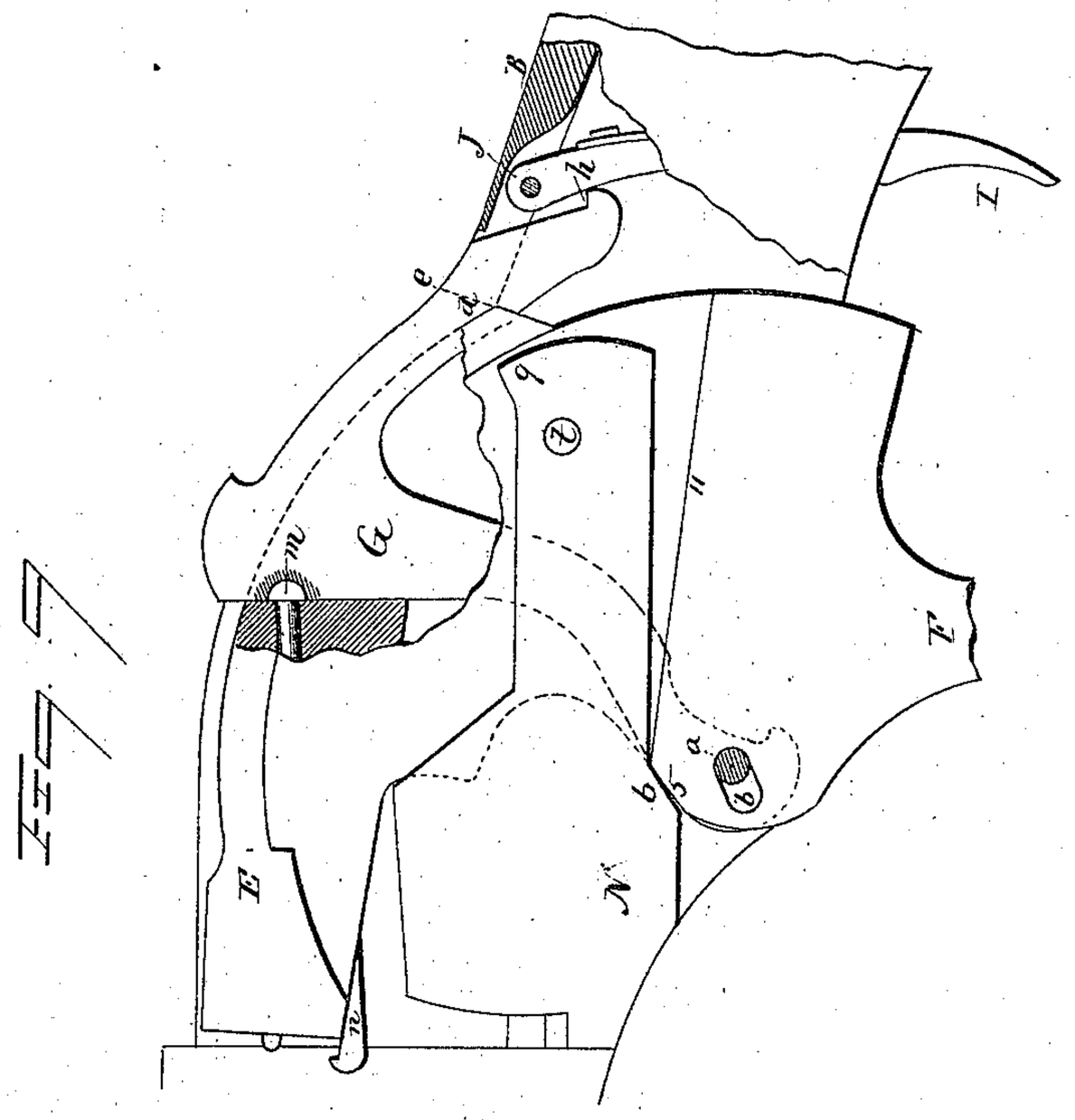


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L. A. Shumway
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# UNITED STATES PATENT OFFICE.

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

## MAGAZINE FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 336,287, dated February 16, 1886.

Application filed June 15, 1885. Serial No. 168,738. (No 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 four 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 sectional side view showing the mechanism in the normal or closed condition; Fig. 2, a top view of the same complete; Fig. 3, a vertical section on line *x x*, looking rearward; Fig. 4, the same as Fig. 1, showing the parts in the extreme open position; Fig. 5, a transverse section on line *y y* of Fig. 4, looking forward; Fig. 6, a longitudinal sectional view of the receiver, showing a side view of the breech-piece and carrier as in the opening movement; Fig. 7, a longitudinal section cutting through the opening for charging the magazine, and showing a top view of the carrier; Fig. 8, a transverse section through the carrier and receiver on line *z z* of Fig. 7, looking rearward; Fig. 9, a sectional side view showing the parts as in the position of the first part of the opening movement, under the action of the slot *b* and before the turning upon the pivot commences.

This invention relates to an improvement in that class of arms in which the breech-piece is adapted to swing rearward and downward in opening the breech for the introduction of a cartridge to the barrel, or its removal therefrom, and in which the breech-piece is actuated by means of a lever beneath the receiver, and which lever forms the trigger-guard, and while the improvement is specially adapted to magazine fire-arms having a magazine arranged longitudinally beneath the barrel, opening into the receiver below the barrel, parts of the invention are applicable to single breech-loaders; and the invention consists in the construction, arrangement, and combination of parts, making a complete organized arm, as hereinafter described, and more particularly recited in the claims.

A is the receiver, which is constructed with a tang, B, extending from the upper surface at the rear, and a similar tang, C, below, for the purpose of securing the receiver to the stock—a common construction in this class of arm. At the forward end of the receiver the barrel D is secured in the usual manner, opening into the receiver at the rear, the receiver in rear of the barrel constructed with a vertical opening through it, in which the operative mechanism of the arm is arranged.

E is the breech-piece, formed as a part of the trigger-guard lever F, and is hung upon a pivot, *a*, in the lower part of the receiver, so that under the movement of the lever the breech-piece is turned backward and downward, as from the position in Fig. 1 to that in Fig. 4. At the pivot *a* the breech-piece is constructed with a slot, *b*, to form the bearing upon the pivot, and so that a certain extent of radial movement is imparted to the breech-piece, combined with its rotative movement. The back of the breech-piece is segment-shaped, as seen in Fig. 6, and on this segmental portion a shoulder, *d*, is formed, which, when the breech-piece is in its closed position, rests against a corresponding shoulder, *e*, in the receiver, (the shoulder seen in broken lines, Fig. 1,) these shoulders forming the resistance to support the breech-piece in its closed position against the recoil of the charge. When the breech-piece is in its closed position, with the shoulder engaged, as seen in broken lines, Fig. 1, the lever below is drawn up to its place against the receiver, bringing the lower end of the slot *b* substantially against the pivot, the slot then extending diagonally upward and rearward from the pivot, as indicated in Fig. 1. In the first movement, preparatory to opening the breech-piece, the lever is turned downward, as indicated in Fig. 9, the slot permitting such movement without material movement of the breech-piece, and until the upper end of the slot comes to a bearing upon the pivot, as seen in that figure. This first preliminary movement of the lever takes the shoulder *d* down and away from the shoulder *e* in the receiver, and so as to release the breech-piece from its supporting engagement; then,

continuing the movement of the lever, the breech-piece may be turned rearward to its full open position, as indicated in Fig. 4, the lever turning upon the pivot in such movement. In the rear portion of the breech-piece a vertical recess is made, in which the hammer G is set, the hammer hung upon the same pivot, *a*, as the lever and breech-piece, and so that in the opening movement of the lever and breech-piece the hammer will turn upon the same pivot as the breech-piece. The nose of the hammer is adapted to abut against the forward end of the recess or striking-face in the breech-piece and bear toward the forward face of the breech-piece. In the breech-piece the main spring H is arranged, which is of substantially usual form, and adapted to bear the nose of the hammer with force toward its striking-point on the breech-piece. The trigger I is hung upon a pivot, J, near the top of the receiver and in rear of the hammer. The back of the hammer is of segment shape, of which its pivot is the center. Upon the front face of the trigger is a notch, *f*, and upon the back of the hammer is a shoulder, *h*, and so that as the hammer is turned backward the shoulder *h* on the hammer will engage the notch *f* in the trigger and be there caught under the influence of the trigger-spring K, as indicated in broken lines, Fig. 1. The hammer may be brought to this position while the breech-piece is closed, and discharged by the pull of the trigger in the usual manner. In the breech-piece, forward of the striking-face of the hammer, the firing-pin L is arranged longitudinally through that portion of the breech-piece, and so that the face of the hammer may strike the rear end of the firing-pin and force it forward to deliver the blow of the hammer, in the usual manner of communicating the blow of the hammer through the breech-piece to the cartridge in the barrel. As the breech-piece is thrown wide open for the introduction of the cartridge to the barrel, the hammer moves with it beyond the point of engagement with the trigger, as seen in Fig. 4, and after the cartridge has been introduced to the barrel the breech-piece is returned to its closed position, and in such return the shoulder *h* on the hammer will engage the notch *f* of the trigger before the breech-piece has fully closed, and will be retained by the trigger in that cocked position unless the operator prefers the hammer to follow the breech-piece. In that case he pulls the trigger out of the path of the hammer, and so that the hammer may continue its closing movement with the breech-piece. On the front face of the hammer is a notch, *m*, immediately below the point where the face of the hammer strikes the rear end of the firing-pin. In the first part of the opening movement of the breech-piece, as indicated in Fig. 9, the striking-face of the breech-piece drops to such an extent as to bring the rear end of the pin to the notch *m* on the face of the hammer, so that the force of the hammer upon the firing-pin is removed before the actual rear movement of the parts commences, and this non-contact of the hammer and firing-pin is maintained to its extreme rear position, as indicated in Fig. 4. From this it follows that in the closing movement of the breech-piece the hammer and firing-pin will retain the same relative position until the breech-piece is closed, as seen in Fig. 9, and the locking movement of the breech-piece commences. The final locking movement of the breech-piece raises the striking-face of the breech-piece, so as to bring the rear end of the firing-pin into striking contact with the face of the hammer, as seen in Fig. 1.

Upon the under side of the breech-piece proper the extractor is arranged. This consists of a lever, *n*, hung by a longitudinal slot, *o*, to a fixed pivot, *r*, in the breech-piece, (See Fig. 1.) The lever projects beyond the front face of the breech-piece and terminates in the usual hook shape. In rear of the extractor-lever, and in a line below the pivot, a spring-spindle, *s*, is provided to bear forward against the rear end of the lever *n*, to hold it in its extreme forward position, and so that when the breech-piece is in its closed position, as indicated in Fig. 1, the hooked portion of the extractor is forward of the front face of the flange of the cartridge. The spring-spindle *s* permits the extractor to turn upon its pivot, so that as a cartridge or shell is being withdrawn from the barrel the extractor still maintains its engagement with the shell, the hook portion following in the straight or longitudinal line of the outwardly-moving shell, as seen in Fig. 6, while the breech-piece follows the segmental path. The extractor is arranged at one side of the center, as indicated in broken lines, Fig. 2, first, that it may not interfere with the movement of the firing-pin, and, second, that in the closing movement of the breech-piece the nose of the extractor may be out of line of the primer of a cartridge, so that by no possibility can the primer be struck by the extractor.

We have thus far described the invention without reference to the magazine appliances, and to this extent the mechanism of the arm is adapted to a single breech-loader. Beneath the barrel the magazine M is arranged in the usual longitudinal position, opening into the receiver directly below the rear open end of the barrel. In the receiver, and below the breech-piece, the carrier N is arranged. It extends rearward and is hung upon a pivot, *t*. Its rear end is bifurcated, so as to permit the swinging part of the lever and breech-piece to work through it, as seen in Fig. 3. Near the forward end of the carrier wings P R are arranged—one upon one side and the other upon the opposite side—adapted to receive a cartridge from the magazine between them. The two wings are curved upon the inner side. The one wing, R, is laterally movable toward and from the other, as indicated in broken lines, Fig. 8. That it may be so moved, that side of the carrier is formed in a separate

piece, S, (see Fig. 5,) but corresponding to the opposite side of the carrier, and it is hung near its forward end to the carrier upon a stud, *u*, (see Figs. 7 and 8,) and so that the wing R may be rocked laterally toward and from the other wing, P, as indicated in broken lines, Fig. 8. When in the extreme down position, the wings stand separated, as seen in Fig. 8, and so that a cartridge may pass from the magazine between them. Upon the upper face of the carrier, at its forward end and between the wings, a two-armed lever, T U, is hung in a longitudinal position upon a pivot, *w*, and so that it may swing in a vertical plane. When the carrier is in its down position, as seen in Fig. 1, the upper surface of this lever T U stands flush with the bottom of the carrier, as seen in Figs. 1 and 8, and in line with the bottom surface of the magazine, the rear arm, U, of the lever taking a bearing upon the carrier below. The forward end of the arm T of the lever is turned outward toward the side of the receiver, as at 2, Fig. 7. Above the magazine at that side of the receiver is an inwardly-projecting stud, 3, (see Fig. 7, and in broken lines, Fig. 4,) and so that as the carrier is turned from the position seen in Fig. 1 to that seen in Fig. 4 the arm 2 from the lever will strike the said stud, arresting the further movement of that end of the lever, thereby causing the rear end to turn upward, as seen in Fig. 4, which will raise the rear end of the cartridge, as indicated in broken lines, Fig. 4, and bring it into nearly longitudinal line with the bore of the barrel. Upon the under side of the breech-piece a shoulder, 4, is formed, against which a shell passing from the magazine onto the carrier will strike before the cartridge shall have passed entirely from the magazine, and so that the cartridge so standing will hold the first cartridge at some considerable distance forward of the rear end of the magazine, as indicated in Fig. 1; but as the breech-piece commences its opening movement the shoulder 4 moves rearward, as indicated in Fig. 6, so as to permit the cartridge to have passed entirely onto the carrier; but during the time the cartridge has been thus completing its movement onto the carrier the carrier has been raised, so as to take the forward end of the carrier to a point above the bottom of the magazine, as indicated in Fig. 6, so that that portion of the carrier will serve as a stop for the said next cartridge, and the carrier is thus moved by a cam-surface, 5, formed upon the hub of the lever or breech-piece, which strikes a corresponding surface, 6, on the carrier immediately after the unlocking movement of the breech-piece, (see Fig. 5,) and then in the first part of the opening movement of the breech-piece the said cam-surface raises the carrier from the position seen in Fig. 1 to that seen in Fig. 6. In that position the carrier will stand until the breech-piece approaches its extreme rear or open position, and as the breech-piece approaches its extreme rear position shoulders 7 8 on the breech-piece strike the ends 9 10 of the carrier, which project rearward beyond the pivots on which the carrier turns, and thereby force the carrier to its up or delivery position, as seen in Fig. 4. Then the breech-piece is closed, and in its closing movement strikes the rear end of the cartridge and carries it forward through the carrier into its place in the barrel, and in the closing movement of the breech-piece shoulders 11 and 12 on the sides of the breech-piece strike the under side of the rear portion of the carrier and bring it to its down position, as seen in Fig. 1. To give to the wing R of the receiver its rocking movement, before referred to, the shoulder 8 on the breech-piece, which strikes that arm of the receiver, is inclined downward and outward, as seen in Fig. 5, and the upper edge of the arm S of the wing is correspondingly inclined, as seen in same figure, and so that as the shoulders come onto the respective arms or sides of the carrier in rear of the pivot the inclined shoulder 8 on the carrier, striking the corresponding incline on the arm S of the wing R, will cause that arm to rock upon its pivots transversely and move inward, as indicated in broken lines, Fig. 8. The two arms of the carrier at the rear are hung upon like pivots, the one, T, as before described, and the arm S upon a pivot, 13. As this rocking movement of the wing occurs during the upward movement of the breech-piece, the wing swings over the cartridge to embrace it to such an extent as to prevent it being thrown outward by the upward movement or momentum of the carrier, but not so as to interfere with the transfer of the cartridge from the carrier to the barrel.

To charge the magazine, the opening 14 is made in the side of the receiver, (see Fig. 7,) and in that opening a cover, 15, is hung, (see Fig. 4,) provided with a spring, 16, so that the cover may turn inward, the breech-piece being recessed, as indicated in Fig. 7, to permit such inward movement of the cover, so as to open a passage through the carrier to the magazine, as indicated in Fig. 7.

As an additional lock for the breech-piece in its closed position, or, rather, as a device to temporarily hold the breech-piece in its closed position, we make the mainspring of V shape, one arm hung upon the pivot of the hammer, the other arm bearing directly against the hammer, the spring extending within the breech-piece to the rear, and near its rear end we arrange within the breech-piece a fixed pin, stud, or shoulder, 17, and which, when the breech-piece is in its closed position, lies beneath the rear end of the mainspring, but in the first movement of the breech-piece the stud 17 passes below the end of the mainspring, and so as to escape therefrom, as seen in Fig. 4; but as the breech-piece is returned, and in the final closing movement due to the inclined slot *b*, the stud 17 will be again brought into the rear of the spring, and there serve as a stop

to offer a slight resistance to the opening movement of the breech-piece.

While we prefer to employ the lever T U in the bottom of the carrier as a means to elevate the rear end of the cartridge, this is not essential to the successful working of the arm, and may be omitted. The wing R may also be made as a rigid part of the carrier, the same as the wing P, the two arms from the wings or parts of the carrier extending rearward and both hung alike upon pivots; but we prefer the locking movement as a protection against the accidental displacement of the cartridge.

We are aware that an arm has been constructed with a breech-piece hung to turn upon a pivot swinging backward and downward in opening, with a lever attached thereto for such movement, and that the breech-piece has been locked by constructing the breech-piece with a slot to adapt the breech-piece to work upon a pivot, so that the bearing-surface of the breech-piece may be brought against a corresponding bearing on the receiver to resist recoil, and therefore do not claim, broadly, such construction.

We claim—

1. In a fire-arm, the combination of the barrel open at its rear end, a breech piece hung in the receiver in rear of said barrel, upon an axis at right angles to the barrel, and so as to swing downward and backward in opening, and a lever extending from said breech-piece below the receiver as a handle by which the breech-piece may be opened and closed, the breech-piece constructed with a slot inclined upward and backward from its pivot when the breech-piece is in its closed condition, the breech-piece also constructed with a shoulder, *d*, and the receiver with a corresponding shoulder, *e*, against which said shoulder *d* will abut, when the breech-piece is in its closed position, to resist recoil, substantially as described.

2. The combination of the barrel open at its rear end, a breech-piece hung upon a pivot in the receiver in rear of the barrel and so as to swing backward and downward in opening, the said breech-piece constructed with a lever extending beneath the receiver, and by which the breech-piece may be turned upon its pivot, the breech-piece also constructed with a slot at the pivot, inclined upward and rearward when the breech-piece is in its closed position, and also constructed with a shoulder, *d*, and the receiver with a corresponding shoulder, *e*, against which said shoulder *d* will abut, when the breech-piece is in its closed position, to resist recoil, a hammer hung within the breech-piece and upon the same pivot as the breech-piece, a mainspring also arranged within the said breech-piece and adapted to bear said hammer upon the striking-face of the breech-piece, with a firing-pin extending longitudinally through the breech-piece from its striking-face forward, and a trigger hung in rear of the hammer and adapted to engage a shoulder thereon when the hammer is in the cocked position, substantially as described.

3. The combination of the barrel open at its rear end, a breech-piece hung in rear of the barrel adapted to swing backward and downward in opening, constructed with a lever extending beneath the receiver, by which the breech-piece may be turned upon its pivot, a hammer hung within the breech-piece upon the same pivot as the breech-piece, a mainspring adapted to bear the said hammer against the striking-face of the breech-piece, a trigger arranged to engage the hammer in its cocked position, a firing-pin extending longitudinally through the breech-piece from the striking-face forward, and the extractor-lever *n*, hung in the breech-piece and adapted to swing in a vertical plane, with a spring arranged to bear the nose of the extractor upward and toward the barrel, substantially as described.

4. The combination of a barrel open at its rear end, a breech-piece hung upon the pivot in rear of the barrel and arranged to swing backward and downward in opening, constructed with a lever extending therefrom beneath the receiver, and by which it may be turned upon its pivot, said breech-piece also constructed with a slot at the pivot, inclined upward and rearward therefrom when the breech-piece is in its closed position, the breech-piece also constructed with a shoulder adapted to engage a corresponding shoulder in the receiver when the breech-piece is in its closed position, a hammer hung within the breech-piece and upon the same pivot as the breech-piece, the mainspring adapted to force said hammer against the striking-face of the breech-piece, a firing-pin extending longitudinally through the breech-piece, extending from its striking-face forward, the hammer constructed with a notch below its striking-point upon the firing-pin, and a trigger arranged to engage the hammer when in its cocked position, substantially as described.

5. In a fire-arm, the combination of the barrel open at the rear, a magazine beneath the barrel, open also to the rear, a breech-piece hung in the receiver at the rear of the barrel and below the magazine, adapted to swing backward and downward in opening, said breech-piece constructed with an arm extending below the receiver, and by which it may be turned upon its pivot, a hammer arranged in said breech-piece and hung upon the same pivot as the breech-piece, a mainspring adapted to force said hammer against the striking-face of the breech-piece, a firing-pin extending longitudinally through the breech-piece from its striking-face forward, a trigger arranged to engage the hammer in its cocked position, and a carrier hung in the receiver to move upward and downward to deliver a cartridge from the magazine to a position forward of the front face of the open breech-piece, substantially as described.

6. In a fire-arm, the combination of the bar-

rel open at the rear, a magazine beneath the barrel, open also to the rear, a breech-piece hung in the receiver at the rear of the barrel and below the magazine, adapted to swing backward and downward in opening, said breech-piece constructed with an arm extending below the receiver, and by which it may be turned upon its pivot, the breech-piece also constructed with a slot inclined from the pivot upward and rearward, and also constructed with a locking-shoulder arranged to engage a corresponding shoulder on the receiver when the breech-piece is in its closed position, a hammer arranged in said breech-piece and hung upon the same pivot as the breech-piece, a mainspring adapted to force said hammer against the striking-face of the breech-piece, a firing-pin extending longitudinally through the breech-piece from its striking-face forward, a trigger arranged to engage the hammer in its cocked position, and a carrier hung in the receiver to move upward and downward to deliver a cartridge from the magazine to a position forward of the front face of the open breech-piece, substantially as described.

7. The combination of the barrel D, magazine N, breech-piece E, hung below the barrel upon a pivot, *a*, the breech-piece constructed with a lever, F, extending downward beneath the receiver, hammer G, hung within the breech-piece and upon the same pivot as the breech-piece, a mainspring adapted to bear the hammer against the striking-face of the breech-piece, a firing-pin extending longitudinally through the breech-piece, a trigger arranged to engage the hammer when in its cocked position, the spring-extractor lever *n*, hung upon the under side of the breech-piece, the carrier hung at the rear, its two sides at the forward end turned upward to form wings P R, and the lever T U, hung in the bottom of the carrier at its forward end, the forward arm, T, of the lever constructed with a transverse projection, 2, and a fixed stud, 3, in the receiver, against which the forward arm of said lever will strike as the carrier completes its forward movement, and so as to turn said lever on its pivot to elevate the rear end of the cartridge, substantially as and for the purpose described.

8. The combination of the barrel D, magazine N, breech piece E, hung upon a pivot, *a*, and adapted to swing backward and downward in opening, the breech-piece constructed with a lever, F, extending below the receiver, a hammer, G, hung within the breech-piece and upon the same pivot as the breech-piece, a mainspring arranged to force said hammer against the striking-face of the breech-piece, a firing-pin extending longitudinally through the breech-piece from its striking-face forward, a trigger arranged to engage the hammer when in its cocked position, a carrier hung at the rear and so as to swing upward and downward within the receiver, the carrier provided at its forward end with wings P R, one of said wings fixed to the carrier, the other hung upon pivots and adapted to rock transversely toward the other wing, the breech-piece constructed with an inclined shoulder, 8, and the arm of said wing R constructed with a corresponding incline, whereby the inward-rocking movement of the wing is imparted as the breech-piece approaches its extreme open position, substantially as described.

9. The combination of a barrel open at the rear, a breech piece hung in the receiver below the barrel and arranged to swing backward and downward in opening, and constructed with a lever extending beneath the receiver, by which the breech-piece may be turned upon its pivot, the said breech-piece also constructed with a slot at the pivot inclined upward and backward when the breech-piece is in its closed position, a locking shoulder, *d*, on said breech-piece, corresponding shoulder, *e*, on the receiver, a hammer hung in the breech-piece and upon the same pivot as the breech-piece, a V-shaped mainspring arranged in said breech-piece, one arm supported upon the pivot of the hammer, the other arm bearing directly upon the hammer, and a stud, 17, in the breech-piece adapted to bear against the heel of the mainspring when the breech-piece is in its closed position, with a trigger arranged to engage the hammer when in its cocked position, substantially as described.

10. In a magazine fire-arm, the combination of the breech-piece and trigger-guard lever, through which movement is imparted to said breech-piece, a carrier arranged to receive a cartridge from the magazine and present it to the barrel above, the hub of said lever constructed with a cam-surface, 5, and the under side of the carrier constructed with a corresponding bearing-surface, 6, substantially as described, and whereby in the first part of the opening movement of the lever said cam-surface raises the carrier to form a stop at the mouth of the magazine.

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