(No Model.)

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J. M. & M. S. BROWNING.

MAGAZINE FIRE ARM.

No. 345,882. Patented July 20, 1886.

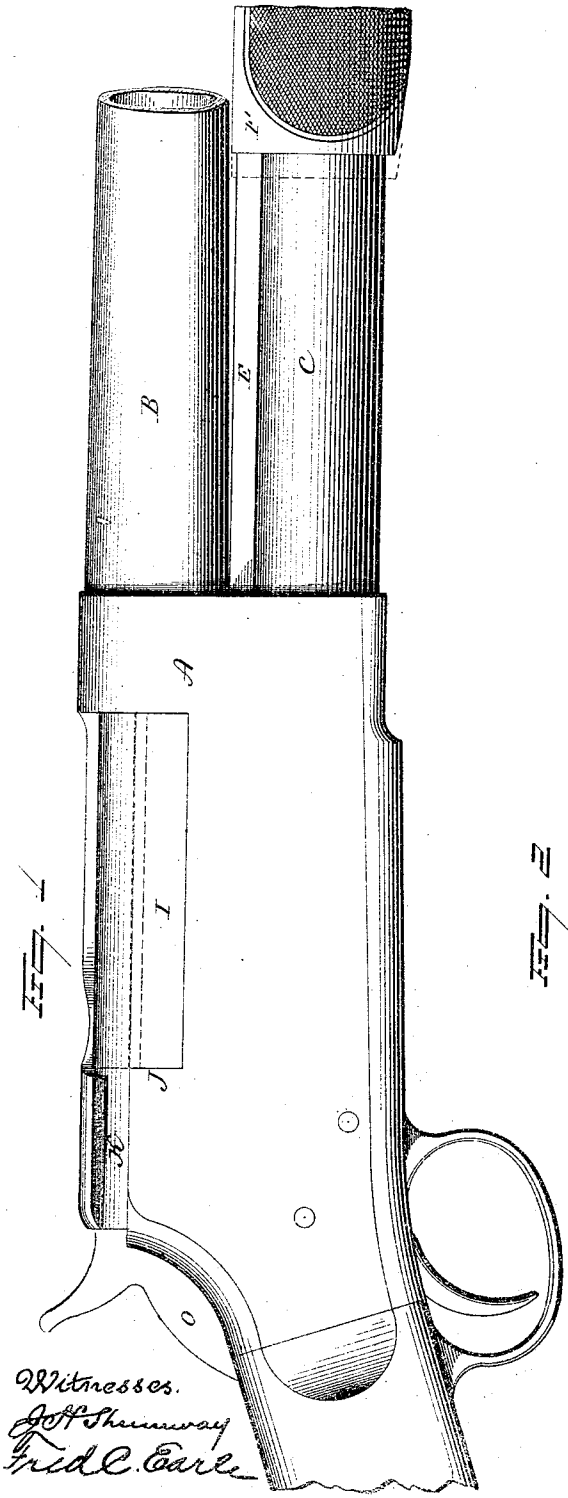


Fig. 1

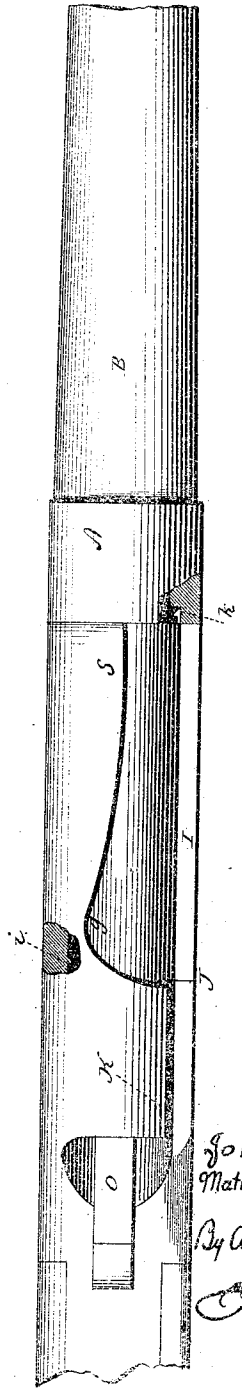


Fig. 2

Witnesses.
J. F. Shumway
Fred C. Earle

John M. and
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Inventors
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Fred C. Earle

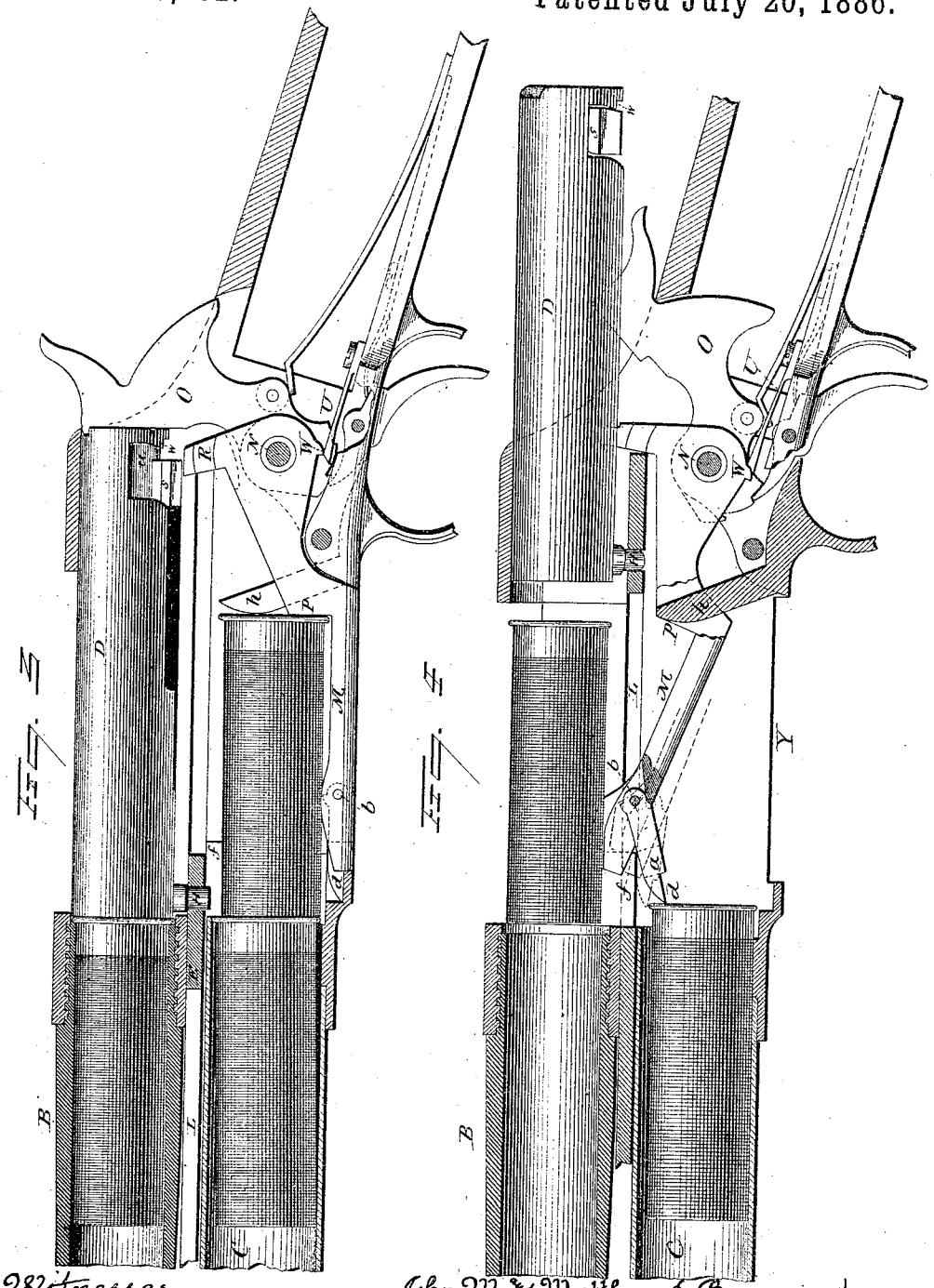
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Witnesses.
J. F. Dunnway
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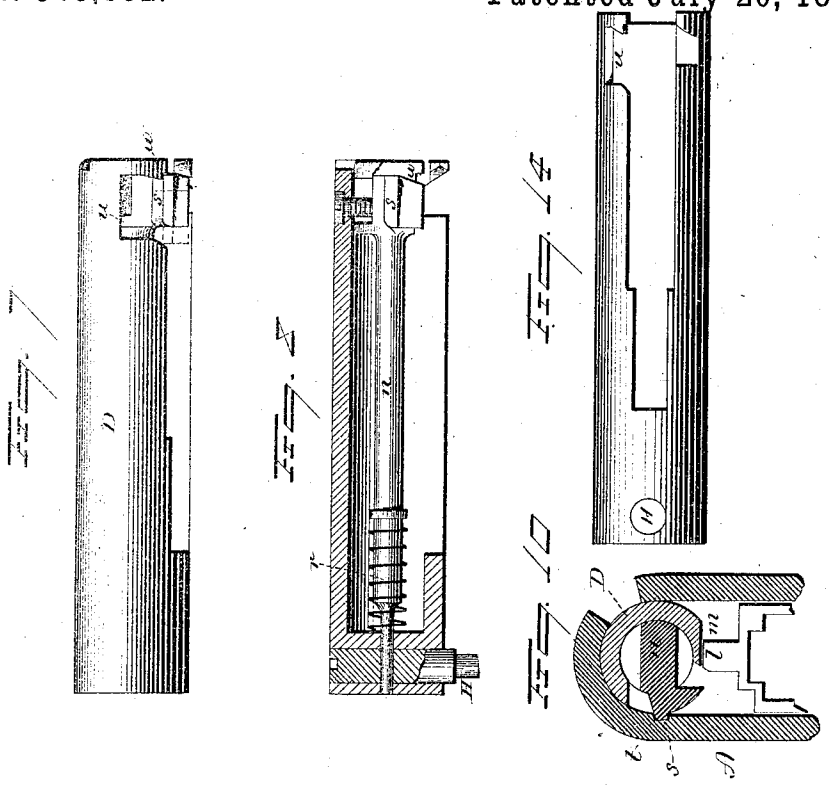
John M. & Matthew S. Browning
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Wm. C. Earle

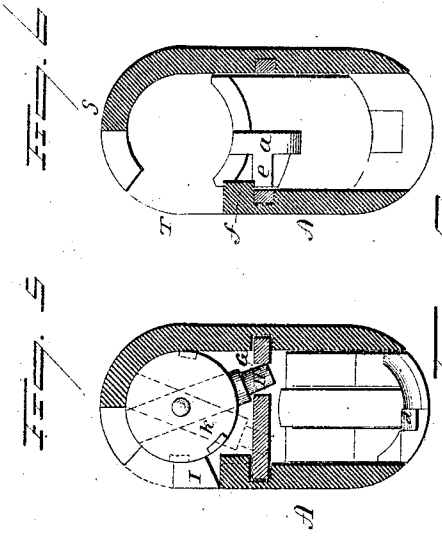
(No Model.) 4 Sheets—Sheet 3.

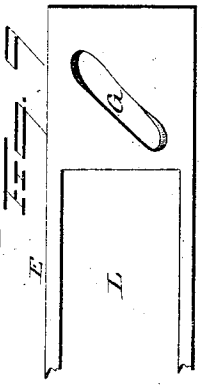
J. M. & M. S. BROWNING.

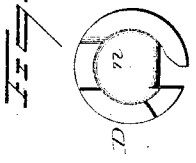
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(No Model.)

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J. M. & M. S. BROWNING.

MAGAZINE FIRE ARM.

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Fig. 11.

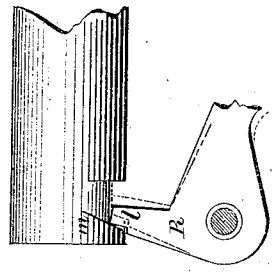


Fig. 12.

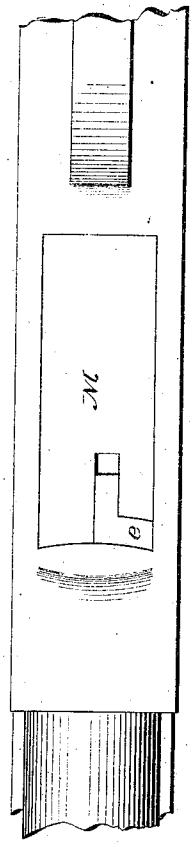
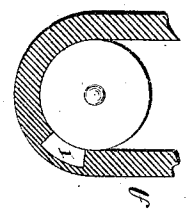


Fig. 13.



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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. 345,832, dated July 20, 1886.

Application filed May 3, 1886. Serial No. 200,901. (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 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 receiver and adjacent portions of the arm; Fig. 2, a top view of the same, parts broken away to illustrate the construction; Fig. 3, a longitudinal sectional side view showing the parts in their normal or closed position; Fig. 4, the same, showing the parts in the fully open position; Fig. 5, a transverse section showing front face of the breech-piece, the section cutting through the diagonal slot in the slide when the breech-piece is in the closed position; Fig. 6, a transverse section through the receiver cutting in front of the carrier, and showing the carrier in the up position; Fig. 7, a side view of the breech-piece, Fig. 8, a longitudinal section of the breech-piece showing a side view of the rear end of the breech-piece and of the firing-pin; Fig. 9, a top view of the rear end of the slide E, showing the diagonal slot; Fig. 10, a transverse section through the upper part of the receiver, and cutting through the locking-projection *s* of the firing-pin, and also showing the interlocking of the breech-piece and carrier; Fig. 11, a side view of the breech-piece and of the carrier as the breech-piece commences its locking movement, broken lines indicating the breech-piece in its locked position, as locking the carrier; Fig. 12, a rear end view of the breech-piece; Fig. 13, an under side view of the receiver, showing the carrier as the cover to close the magazine-charging opening; Fig. 14, an under side view of the breech-piece; Fig. 15, a modification of the rib and groove on the breech-piece.

This invention relates to an improvement in that class of fire-arms in which the breech-piece is arranged to be moved backward and forward in axial line with the barrel, and in which the breech-piece is locked when in the closed position by imparting to it a partial rotation, and is an improvement upon the arm for which we have heretofore filed application for Letters Patent, Serial No. 186,852, the object of the invention being to simplify the construction, somewhat, with a view to rapid firing; and the invention consists in the construction hereinafter described, and particularly recited in the claims.

A represents the receiver, to the forward end of which the barrel B is secured, and below the barrel is the magazine C, substantially parallel with the barrel, and preferably so as to leave a space between the two, as in our application before referred to.

D is the breech-piece, which is arranged in the receiver in longitudinal line with the barrel, and so as to be moved backward and forward to open and close the breech.

Between the magazine and barrel is a slide, E, which works longitudinally through the opening in the receiver and in a position below the breech-piece. At its forward end the slide is provided with a handle, F, which surrounds the magazine, and by which the slide may be moved backward and forward, as in our previous application; and as in that application the slide is constructed with a diagonal slot, G, at its rear end, in which a stud, H, projecting from the under side of the breech-piece, works, as seen in Figs. 5 and 9, and substantially as in our previous patent, and so that under the first part of the rear movement of the slide E the diagonal slot G will cause the stud H to traverse through the diagonal slot G, and thereby impart rotation to the breech-piece, as indicated in broken lines, Fig. 5, and also as the slide approaches its extreme forward or closing position it will cause the stud H to return through the slot G and correspondingly return the breech-piece. This rotative movement of the breech-piece produces the unlocking and locking operation.

The breech-piece is constructed with a longitudinal rib, I, on one, say, the right-hand,

side, and that side of the receiver is correspondingly open, so as to form a rear shoulder, J, (see Figs. 1 and 2,) against which the rib I will abut when in its closed position, the rib extending the length of the opening and so as to fill the space in the receiver, as indicated in Fig. 1.

In Fig. 5 the rib I is shown in the locked position, and stands flush with the side of the receiver; but as the breech-piece is rotated, as before described, the rib I rises until it passes above the shoulder J and into line with an opening, K, rearward through the receiver, and so that when in that position the breech-piece may move rearward, the rib passing through the opening K, and, say, to the extreme open position indicated in Fig. 4. Then as the breech-piece is returned under the forward movement of the slide E, and as it arrives at its extreme forward or closed position, the diagonal slot G in the slide E will impart the return or locking movement to the breech-piece, and so as to bring the rib I forward of the shoulder J.

The slide E is constructed with an opening, L, vertically through it, so that when it is in the extreme rear position there is an opening through the top of the receiver forward, of the breech-piece and down through the slide E into the part of the receiver below, where the carrier is arranged, as in our previous application.

M represents the carrier, which is hung at the rear upon a pivot, N, here represented as the same pivot upon which the hammer O is hung. The carrier is constructed with a shoulder, P, forward of its pivot, and distant from the forward end of the recess in the receiver equal to the length of a cartridge, as seen in Fig. 3, and so that as the cartridge passes from the magazine onto the carrier it will abut against the shoulder P as a stop to arrest the column of cartridges, and as seen in that figure. The carrier is raised during the last part of the rear movement of the breech-piece by the rear end of the slide striking against an upward-projecting arm, R, from the hub of the carrier, and so that as the breech-piece reaches its extreme open position the carrier will have been raised from the closed position seen in Fig. 3 to that seen in Fig. 4.

It is desirable that as the cartridge is raised it shall assume a position in axial line with the barrel, as seen in Fig. 4. To do this, various devices have been applied to the carrier to raise the rear end of the cartridge faster than the forward end.

To obviate the complicated mechanism necessary to so raise the cartridge, we construct the receiver with one side overhanging the breech-piece or opening, as indicated at S, Figs. 2 and 6, and so that the opening into the receiver is at one side, as seen at T, Fig. 6, and so that as the cartridge rises its forward end will strike beneath the overhang S, and then as the carrier rises it bears upon the under side of the cartridge in rear of its forward end; hence the forward end resting under the overhang S, the rear end rises accordingly, and until the body of the cartridge comes into line along the under side of the overhanging portion S, and in that position the cartridge is grasped between the forward end of the carrier and the overhanging portion of the receiver above, and will be there held until the breech-piece advances to force the cartridge forward into the barrel. The carrier is provided with a spring, U, (see Figs. 3 and 4,) which works against a cam, W, on the hub of the carrier, the tendency of the spring being to force the carrier upward after it shall have arrived at the holding position just described, and as seen in Fig. 4, making the pressure of the carrier upon the under side of the cartridge somewhat yielding.

Through the under side of the receiver an opening, Y, is made, through which cartridges may be inserted into the magazine, such charging of the magazine being made while the carrier is in the raised position, as seen in Fig. 4; and that the column of cartridges may be held against the pressure of the magazine-spring we hang a dog, *a*, in the forward end of the receiver upon a pivot, *b*, and so that the dog may swing up or down in the carrier, the nose *d* of the dog extending forward of the forward end of the carrier, but so that when the carrier is in the down position, as seen in Fig. 3, it is out of the path of the column of cartridges, and so that the cartridges may pass freely from the magazine onto the carrier; but when one cartridge stands against the shoulder P, as seen in Fig. 3, the head of the next cartridge in the magazine is in a position forward of the dog *a*, and so that as the carrier rises the dog will come to the rear of the next cartridge in the magazine next to the one which is upon the carrier, and serve as a stop to arrest the column of cartridges. As the carrier approaches its up position, an arm, *e*, which extends therefrom to one side, strikes a corresponding shoulder, *f*, in the side of the receiver, as seen in Fig. 6, which causes the forward end of the dog to turn downward, as seen in Fig. 4, and there rest against the rear end of the last cartridge in the magazine, and so as to serve as a stop for the column of cartridges. The spring U, before referred to, holds the carrier up and the dog consequently down, under the yielding pressure. Therefore, when n the position seen in Fig. 4, if a cartridge be introduced through the opening Y, under the magazine, it first strikes the nose of the dog *a*, forward of the shoulder *f*, and that shoulder serves as a fulcrum for the dog, and upon which it will turn as a lever, and so that as the nose is pressed upward, as indicated in broken lines, Fig. 4, its rear or pivot end will be correspondingly turned downward, together with the carrier M, the spring U yielding for such movement of the carrier, and so that so soon as the cartridge has so far entered that it may escape from the nose of the dog, then the reaction of the spring U will

re-raise the carrier and throw the dog downward, it being understood that the arm *e* and the shoulder *f* are between the pivot *b* and the forward end or nose *d* of the dog—the arm *e* indicated in broken lines in Fig. 3, and the shoulder *f*, against which it strikes, also seen in the same figure. The dog therefore serves not only to hold back the column of cartridges in the magazine, but also serves as a latch to facilitate the charging of the magazine. The overhanging top S of the receiver is recessed transversely, as at *g*. (See Fig. 2.) Near the rear end and upon the same side of the receiver as the overhang an inwardly-projecting shoulder, *i*, is formed, which is forward of the front face of the breech-piece when it is at its extreme rear position, and so that as the breech-piece moves rearward with the cartridge engaged therewith, by the usual extractor, *k*, upon the side of the breech-piece opposite the projection *i*, and as the breech-piece, with the cartridge connected thereto, approaches its rear position, the side of the cartridge opposite the extractor will strike the shoulder *i*, and then as the breech-piece completes its rear movement the forward end of the cartridge will be turned outward through the opening below the overhang S and ejected from the receiver, the recess *g* facilitating such ejection of the cartridge by giving a greater freedom at the rear end. This recess *g* also facilitates the introduction of a cartridge directly into the barrel through the opening below the overhang, as for a single loader, it making space for the thumb to reach the head of the cartridge in such operation.

To prevent the cartridge from being thrown beyond the shoulder P on the carrier, and also to support the cartridge during its rise, and prevent its escape from the shoulder P, we construct a fixed abutment, *h*, in the receiver, which extends upward through a slot in the carrier, and corresponding to the shoulder P, the abutment projecting so far above the carrier as to form a bearing or rest for the cartridge during its rising movement, and so that as the rear end passes upward from the shoulder P on the carrier it will still be supported by the stationary abutment *h*, so that practically the shoulder P on the carrier may be dispensed with. The carrier works upward through the opening L in the slide, and the carrier is returned as the breech-piece closes by the rear end of the opening L coming upon the upper side of the carrier, such movement turning the carrier down so far as to permit the complete closing of the breech-piece. Then as the breech piece reaches its extreme closed position, an upward projection, *l*, from the arm R, on the carrier, stands in the path of a circumferential cam, *m*, on the breech-piece, (see Fig. 11,) and so that as the breech-piece is rotated to its home or locked position, (seen in Fig. 10,) the cam *m* on the breech-piece is turned down in rear of the projection *l* on the arm R, and returns the carrier to its down position, and locks it in that position until the breech-piece is again opened. The carrier in its down position closes the opening in the bottom of the receiver, as seen in Fig. 3; and when the parts are in the normal condition this closing of the recess at the bottom of the receiver is securely locked.

To prevent the accidental unlocking of the breech-piece when in its closed position, and so that if the hammer stands at full-cock, as desirable for immediate use, the breech-piece may not be displaced, we provide a lock for it by means of the firing-pin. *n* represents the firing-pin, (see Fig. 8,) which is arranged longitudinally through the breech piece, and provided with a spring, *r*, as a resistance to cause a retreating movement of the firing-pin, in the usual manner for such firing-pins. At the rear end of the breech-piece the firing-pin is provided with a lateral projection, *s*, in line with a corresponding groove, *t*, in the receiver, into which groove the projection *s* stands when the breech-piece is in its closed position, the breech-piece having its rotary movement independent of the firing-pin—that is, the firing-pin is prevented from rotation during the locking and unlocking rotative movement of the breech-piece. The side of the breech-piece is constructed with a circumferential recess, *u*, into which the projection *s* may turn in the unlocking movement of the breech-piece, the spring *r* of the firing-pin having a tendency to force the projection against the rear end of the recess *u;* and at this rear end of the recess *u* is a shoulder, *w*, beneath which the projection *s* may be thrown when the breech-piece is in its locked position, but when the hammer rests against the firing-pin the power of the main spring is greater than that of the spring *r*, then the firing-pin is forced forward away from the shoulder *w*, as indicated in broken lines, Fig. 7, and as seen in Fig. 3; but when the hammer is drawn away from the breech-piece while the breech-piece is locked, the spring *r* will force the firing pin rearward and force the projection *s* beneath the shoulder *w* on the breech-piece, as seen in Fig. 7, thus locking the breech-piece in its closed position so long as the firing-pin stands in its rear position; but by pressing the firing-pin forward, as indicated in broken lines, Figs. 7 and 3, either by hand or by the hammer resting thereon, the shoulder *w* may escape the projection *s*, and thus permit the breech-piece to be rotated to unlock it, and in such rotation of the breech-piece it will bring the shoulder *w* below the projection *s*, as indicated in Fig. 8, where the firing-pin will rest during the opening movement and until the breech-piece is again closed to bring the projection *s* into the groove *t;* and then as the breech-piece is returned to its locking position the inclined back of the shoulder *w* will force the firing-pin forward, as indicated in broken lines, Fig. 7, and until the projection may escape from the shoulder *w* and be thrown rearward to relock the breech-piece.

The breech-piece is constructed with the

usual groove upon its under side, as seen in Fig. 5, to permit it to pass over the nose of the hammer, the breech-piece itself turning the hammer to the full-cocked position during the first part of its rear movement.

We have represented the locking-rib as working through an open groove in the receiver; but this groove may be covered, as seen in Fig. 15—that is to say, need not extend entirely through the receiver.

We claim—

1. In a fire arm, the combination of a receiver, a barrel attached to and opening into said receiver, a breech-piece arranged in said receiver to work backward and forward in longitudinal line with the barrel, said breech-piece also adapted for partial rotative movement and constructed with a radially-projecting rib, I, the stationary shoulder J in the receiver, and the receiver constructed with a groove from said shoulder rearward, through which the said rib I may pass in the opening and closing movement of the breech-piece, a slide arranged beneath the barrel and provided with a handle, whereby longitudinal reciprocating movement may be imparted to said slide, the said slide extending through a slot in the receiver beneath the barrel, its rear end constructed with the diagonal slot G, and the breech-piece provided with a corresponding stud, H, to work in said slot, substantially as described.

2. In a magazine fire arm having a longitudinally-movable breech-piece, the receiver constructed with an opening through one side into the receiver in rear of the barrel, and so as to leave an overhang, S, over the recess in the receiver, the combination therewith of a carrier hung at the rear beneath the breech-piece, and so as to swing up and down in the transfer of cartridges from the magazine, substantially as described, and whereby as the carrier rises to transfer a cartridge to a position forward of the front face of the breech-piece the said cartridge will be grasped between the said overhang above and the carrier below and in longitudinal line with the breech-piece.

3. In a magazine fire arm having a longitudinally-movable breech-piece, the receiver constructed with an opening through one side into the receiver in rear of the barrel, and so as to leave an overhang, S, over the recess in the receiver, the combination therewith of a carrier hung at the rear beneath the breech-piece, and so as to swing up and down in the transfer of cartridges from the magazine, the said overhang constructed with a transverse recess, *g*, near its rear end, substantially as described.

4. In a magazine fire-arm in which the magazine is arranged beneath the barrel, the combination therewith of a carrier hung in the receiver at the rear beneath the breech-piece and adapted to swing upward and downward for the transfer of cartridges from the magazine, the dog *a*, hung in the carrier and so as to swing in a vertical plane, the said dog constructed with an arm between its forward or nose end and the pivot in the carrier, a shoulder in the receiver with which the said arm engages in the upward throw of the carrier, substantially as described, and whereby as the carrier approaches its up position the forward end or nose of the said dog will be turned downward, substantially as and for the purpose described,

5. In a magazine fire-arm, substantially such as described, the combination, with the co-operative parts thereof, of the carrier M, hung at the rear and adapted to swing up and down in the transfer of a cartridge, the fixed abutment *h* in the receiver, forward of the pivot upon which the carrier is hung and extending up through the carrier, substantially as and for the purpose described.

6. In a magazine fire-arm in which the magazine is arranged beneath the barrel and opening into the receiver, the combination therewith of a breech-piece arranged in said receiver to work backward and forward in longitudinal line with the barrel, the said breech-piece also adapted for partial rotative movement, a carrier arranged beneath the breech-piece and hung upon a pivot at the rear and adapted to swing up and down in the transfer of a cartridge, the carrier constructed with an upward projection, *l*, from its hub, and the breech-piece constructed with a corresponding cam, *m*, to engage said projection *l* on the carrier when the breech-piece is in its closed position, substantially as and for the purpose described.

7. In a fire-arm, the combination of a receiver, a barrel attached to and opening into said receiver, a breech-piece arranged in said receiver to work backward and forward in a longitudinal line with the barrel, the said breech-piece also adapted for partial rotative movement to lock or unlock the same when in its closed position, a firing-pin arranged longitudinally through said breech-piece and constructed with a lateral projection, *s*, and the receiver with a corresponding groove into which the said projection will enter as the breech-piece approaches its closed position, a spring on said firing-pin having a tendency to force the firing-pin rearward, the breech-piece constructed with a shoulder, *w*, adapted to engage the said projection *s* on the firing-pin when the breech-piece is in its locked position, substantially as described.

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