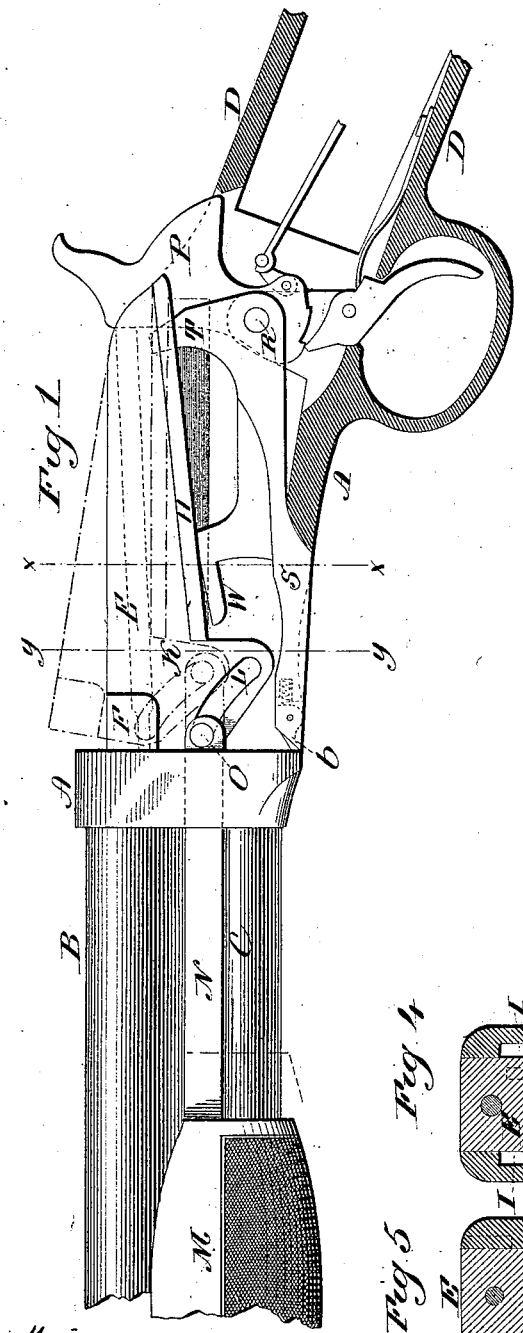
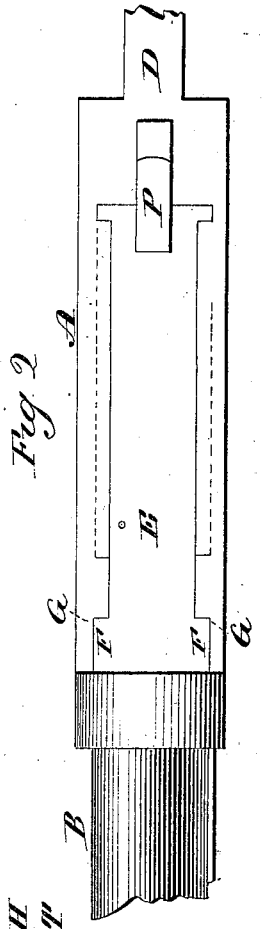
(No Model.) 2 Sheets—Sheet 1.

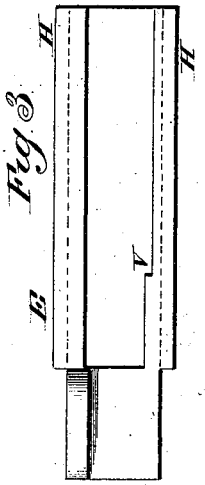
J. M. & M. S. BROWNING.

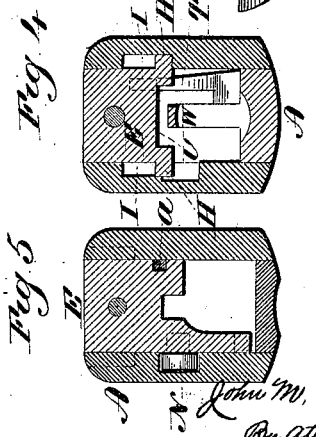
MAGAZINE FIRE ARM.

No. 385,238. Patented June 26, 1888.









Witnesses.
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(No Model.) 2 Sheets—Sheet 2.

J. M. & M. S. BROWNING.

MAGAZINE FIRE ARM.

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Fig. 1

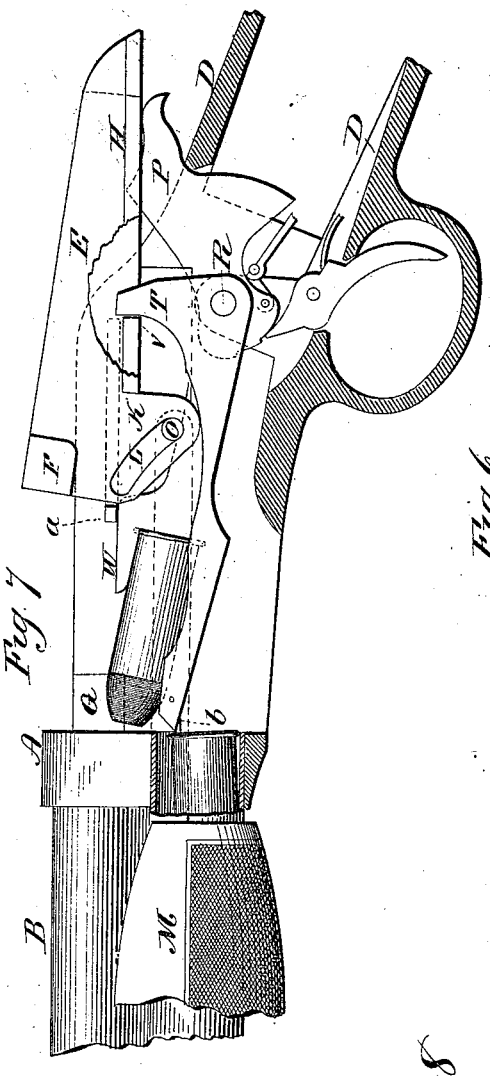


Fig. 6

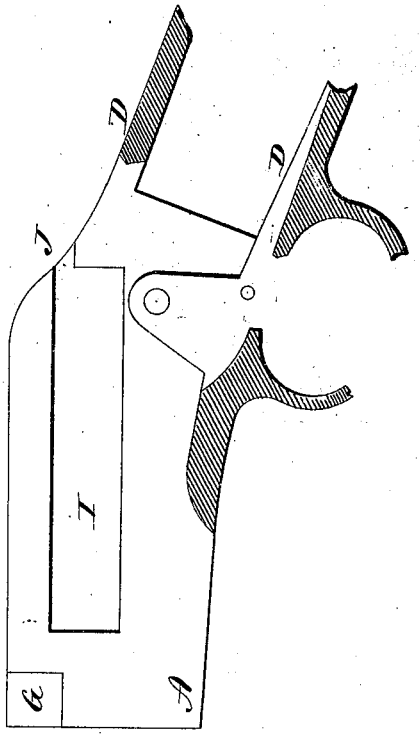
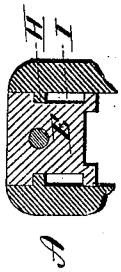


Fig. 8



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J. N. Shumway.
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UNITED STATES PATENT OFFICE.

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

MAGAZINE FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 385,238, dated June 26, 1888.

Application filed December 13, 1887. Serial No. 257,766. (No model.)

To all whom it may concern:

Be it known that we, JOHN M. BROWNING and MATTHEW S. BROWNING, of Ogden, in the county of Weber and Territory of Utah, have invented a new Improvement in Magazine 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 sectional side view of the arm; Fig. 2, a top view of the same; Fig. 3, an under side view of the breech-piece; Fig. 4, a transverse section on line *x x* of Fig. 1, looking toward the rear; Fig. 5, a transverse section on line *y y*, looking forward; Fig. 6, a longitudinal section of the receiver, showing the inner surface of one side; Fig. 7, a sectional side view showing the parts as in the position of the breech-piece wide open; Fig. 8, a modification.

This invention relates to an improvement in that class of magazine fire-arms in which the magazine is arranged beneath the barrel, and the barrel and magazine both opening into the receiver at the rear, the breech-piece being adapted to slide in substantially a longitudinal path toward and from the barrel in opening, and in which the breech-piece is operated by a handle sliding longitudinally beneath the barrel, there being a rod extending from the said handle into connection with the mechanism of the arm, so that the back and forward movement of the handle imparts opening and closing movement to the breech-piece, as well as the operative movements to the other parts of the arm, the object of the invention being a simple construction of the arm, and whereby a magazine fire-arm may be produced at a very small cost.

A represents the receiver, to the forward end of which the barrel B is attached, with the magazine C beneath it, both the barrel and the magazine opening into the receiver at the rear, and the receiver provided with the usual tangs, D D, by which it may be secured to the stock.

E represents the breech-piece, which normally stands in the receiver in longitudinal line with the barrel and so as to close the rear end of the barrel; but the breech-piece is adapted for a limited amount of up-and-down movement at its forward end independent of the longitudinal movement.

On each side the breech-piece, at its forward end, projecting cheeks F are formed, (see Fig. 2,) which are adapted to set into corresponding recesses G in the side of the receiver when the breech-piece is in the closed position, and thus engaging the receiver support the breech-piece against the recoil of explosion. It is necessary to raise the breech-piece to take the cheeks F F from their respective recesses before the rear movement of the breech-piece commences.

On each side of the breech-piece is a rib, H H, (see Figs. 3 and 4,) which work in corresponding grooves I in the respective sides of the receiver. (See Figs. 4 and 6.) These ribs H incline upward from their forward end toward the rear when the breech-piece is in the closed position, or the inclination is such that when the breech-piece is raised, as indicated in broken lines, Fig. 1, then the ribs H come into substantially a direct longitudinal line with the barrel. The grooves I in the breech-piece are deeper than the depth of the ribs, as seen in Fig. 4, so that there is considerable vertical play for the ribs H on the breech-piece; but at the rear end of the groove I and at its upper edge the opening to the rear through the receiver is in depth substantially that of the ribs H and as at J. (See Fig. 6.) The rear end of the breech-piece when in its closed position substantially closes the opening into the receiver at the rear, and the rear end of the ribs H rests in the contracted portion J of the grooves, these contracted portions J serving, in connection with the ribs H, as a pivot upon which the breech-piece may receive an up-and-down swinging movement, as from the position seen in Fig. 1 to that indicated in broken lines, same figure.

From the breech-piece, at its forward end, is a downward projection, K, in which is a cam slot or groove, L. This groove inclines downward and rearward from the forward end of the breech-piece, as clearly seen in Fig. 1.

M represents the handle, which is arranged

to slide backward and forward beneath the barrel in the usual manner. From the handle a bar, N, extends through the forward end of the receiver and carries a transversely-projecting stud, O, which works in the cam-groove L of the breech-piece, and so that when the handle is in the forward position, as seen in Fig. 1, the stud O stands in the forward and highest end of the groove L, and consequently as the handle M moves to the rear its first action is through the stud O in the groove L, which action serves to raise the breech-piece, as indicated in broken lines, Fig. 1, and until the locking projections F have risen from their respective recesses G in the receiver. At that time the stud O has reached the lower and rear end of the groove L, as represented in broken lines, Fig. 1, and the breech-piece in rising has brought the upper surface of the rib against the upper surface of the groove I in the receiver, so that the continued movement of the handle rearward will cause the breech-piece to slide to the rear guided by its ribs and through the contracted portion J of the groove until the breech-piece reaches the extreme open position, as indicated in Fig. 7.

During the rear movement of the breech-piece the projections F ride upon the upper surface of the sides of the receiver, as indicated in Fig. 7, and so that they prevent any vertical movement of the breech-piece during its travel forward and back. As the handle is returned or drawn forward, the breech-piece correspondingly moves forward until it reaches its forward position, and so that the projections F may escape from the upper edges of the receiver at the recesses G. Then the stud O of the handle-bar returns through the groove L and draws the breech-piece to its fully-closed position, where it is held against recoil by the projections F in the recesses G.

P represents the hammer, which is hung upon a pivot, R, in the usual manner, and so that it may strike the rear end of the firing-pin, which is arranged in the breech-piece in the usual manner and as indicated in broken lines, Fig. 1. The rear end of the breech-piece is recessed to permit the hammer to reach the firing-pin. As the breech-piece is moved rearward, it forces the hammer to the rear, as indicated in Fig. 7, and so that it will be caught by the trigger upon the full-cock notch and held ready for firing in the usual manner for the hammer of this class of fire-arms.

S represents the carrier, which is hung at the rear upon a pivot, preferably the same pivot, R, upon which the hammer is hung. At its forward end, when in the down position, it stands in line with the magazine, and so that the cartridge may pass from the magazine onto the carrier in the usual manner.

At the rear end of the carrier is an upwardly-projecting finger, T, the upper end of which stands within a groove, U, formed on the under side of the breech-piece. The forward end of that groove terminates to form a shoulder, V, at a point adapted to strike the finger T of the carrier as the breech-piece approaches its extreme rear position, and so that as the breech-piece completes its rear movement it will raise the carrier, as seen in Fig. 7, with the cartridge thereon, and so that the rear end of the cartridge will stand in the path of the downward projection K from the breech-piece; hence when the breech-piece is again moved forward it will strike the rear end of the cartridge and force it into the barrel, in the usual manner. At the same time the projection K will ride on the surface of the carrier and return it to the down position when the breech-piece has reached its closed position, as indicated in Fig. 1.

The carrier is provided with an overhanging finger, W, beneath which the cartridge passes as it comes from the magazine onto the carrier. This projecting finger is in a central position, as seen in Fig. 4, and as it overhangs the cartridge it prevents the cartridge from being thrown upward as the carrier is suddenly raised.

The extractor *a* is a spring-extractor, but is arranged upon the side of the breech-piece, as indicated in Fig. 7, and as also indicated in Fig. 5, and stands at a point below the cartridge-head when the breech-piece is in the closed position; but as the breech-piece rises the extractor comes to a position forward of the front face of the flange of the cartridge, and so that as the breech-piece moves rearward it will draw the shell with it, and then as the breech-piece approaches its extreme rear position the carrier rises and the finger W strikes the shell held by the extractor and ejects it from the arm.

The magazine is charged when the breech-piece is in the open position and the carrier raised, as seen in Fig. 7, and to hold the column of cartridges in the magazine as they are introduced, and also while the carrier is in the raised position, we introduce a spring-dog, *b*, in the forward end of the carrier, which will be depressed as the cartridges pass into the magazine, so as to allow the head to escape into the magazine. Then the dog will return and engage the head of the cartridge, as represented in Fig. 7, and this dog holds the column of cartridges while the carrier is raised.

The peculiar construction of the breech-piece which we have described, together with the handle, is adapted to single-loaders, and we do not wish to be understood as limiting this part of the invention to the necessary presence of a carrier and other parts to constitute a magazine arm.

We have represented and prefer to make the grooves for the guiding of the breech-piece in the receiver and the ribs on the breech-piece; but it will be understood that this order may be reversed and the ribs formed on the sides of the receiver, with corresponding recesses or grooves in the sides of the breech-piece, as indicated in Fig. 8. We wish it, therefore, to be understood that such reversal in the ar-

rangement of the ribs and grooves is but a substantial equivalent for the ribs on the breech-piece and the grooves in the receiver, and that when reciting the construction as the latter form we thereby include the above-mentioned equivalents.

We claim—

1. In a fire-arm in which the barrel opens into the receiver at the rear, the combination therewith of a breech-piece arranged longitudinally in rear of the barrel and constructed with laterally-projecting ribs upon its sides, and the receiver with corresponding grooves, the said grooves being deeper than the depth of the ribs, so as to allow a certain amount of vertical movement to the breech-piece, the said grooves contracting at their rear end to about the depth of the ribs and the said contracting portions opening through the receiver at the rear, the breech-piece constructed with one or more lateral projections upon its sides adapted to engage corresponding recesses in the sides of the receiver, and the breech-piece also constructed with a downward projection at its forward end, and the said projection constructed with a downward and rearwardly inclined groove, a handle arranged forward of the receiver and adapted for longitudinal reciprocating movement, with a bar extending from said handle into the receiver, and with a stud thereon adapted to work in the said groove of the breech-piece, substantially as described.

2. The combination, in a fire-arm, of a barrel opening into the receiver at the rear, a breech-piece arranged longitudinally in the receiver in rear of the barrel and constructed with laterally-projecting ribs upon its sides, the receiver constructed with corresponding longitudinal grooves upon its inner surface, the said grooves in the receiver being deeper than the ribs on the breech-piece, the said grooves extending rearward and opening through the rear end of the receiver, the depth of the rear end being substantially the depth of the said ribs, the said breech-piece constructed with one or more lateral projections, and the receiver with corresponding recesses, with which said projections are adapted to engage when the breech-piece is in the closed position, and the breech-piece also constructed with a cam-shaped groove, a handle forward of the barrel, and a bar extending therefrom into the receiver, adapted to engage the said cam-shaped groove, and an extractor-hook on the side of the carrier adapted to engage the head of a cartridge in the barrel as the breech-piece rises, substantially as described.

3. In a magazine fire-arm, the combination of a barrel, a magazine beneath the barrel, both magazine and barrel opening into the receiver at the rear, the breech-piece E, arranged longitudinally in the receiver in rear of the barrel, constructed with longitudinal ribs H upon its sides, and the receiver with corresponding longitudinal grooves I, the breech-piece constructed with one or more lateral projections, F, and the receiver with corresponding recesses G, the said breech-piece constructed with a cam-shaped groove, L, near its forward end, a handle beneath the barrel arranged for longitudinal movement, a bar, N, extending from said barrel into the receiver and into engagement with said cam-groove L, a carrier, S, hung in the receiver beneath the barrel, with an upward projection, T, therefrom, the breech-piece constructed with a shoulder, V, adapted to engage said finger as the breech-piece approaches its extreme open position, substantially as and for the purpose described.

4. In a magazine fire-arm, the combination of the breech-piece E, constructed with one or more lateral projections, and the receiver with corresponding recesses, with which said projections on the breech-piece are adapted to engage, the breech-piece also constructed with longitudinal ribs H upon its sides, and the receiver with longitudinal grooves I, in which said ribs are adapted to work, the breech-piece also constructed with a cam-shaped groove, L, a handle beneath the barrel forward of the receiver arranged for longitudinal reciprocating movement, a bar extending from said handle into the receiver and into engagement with said cam-groove L, a carrier, S, hung in the receiver beneath the breech-piece with an upward projection therefrom, and the breech-piece provided with a shoulder adapted to engage said finger as the breech-piece approaches its extreme open position, the breech-piece also provided with an extractor, *a*, upon its side, and the carrier constructed with an overhanging finger, W, substantially as and for the purpose described.

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