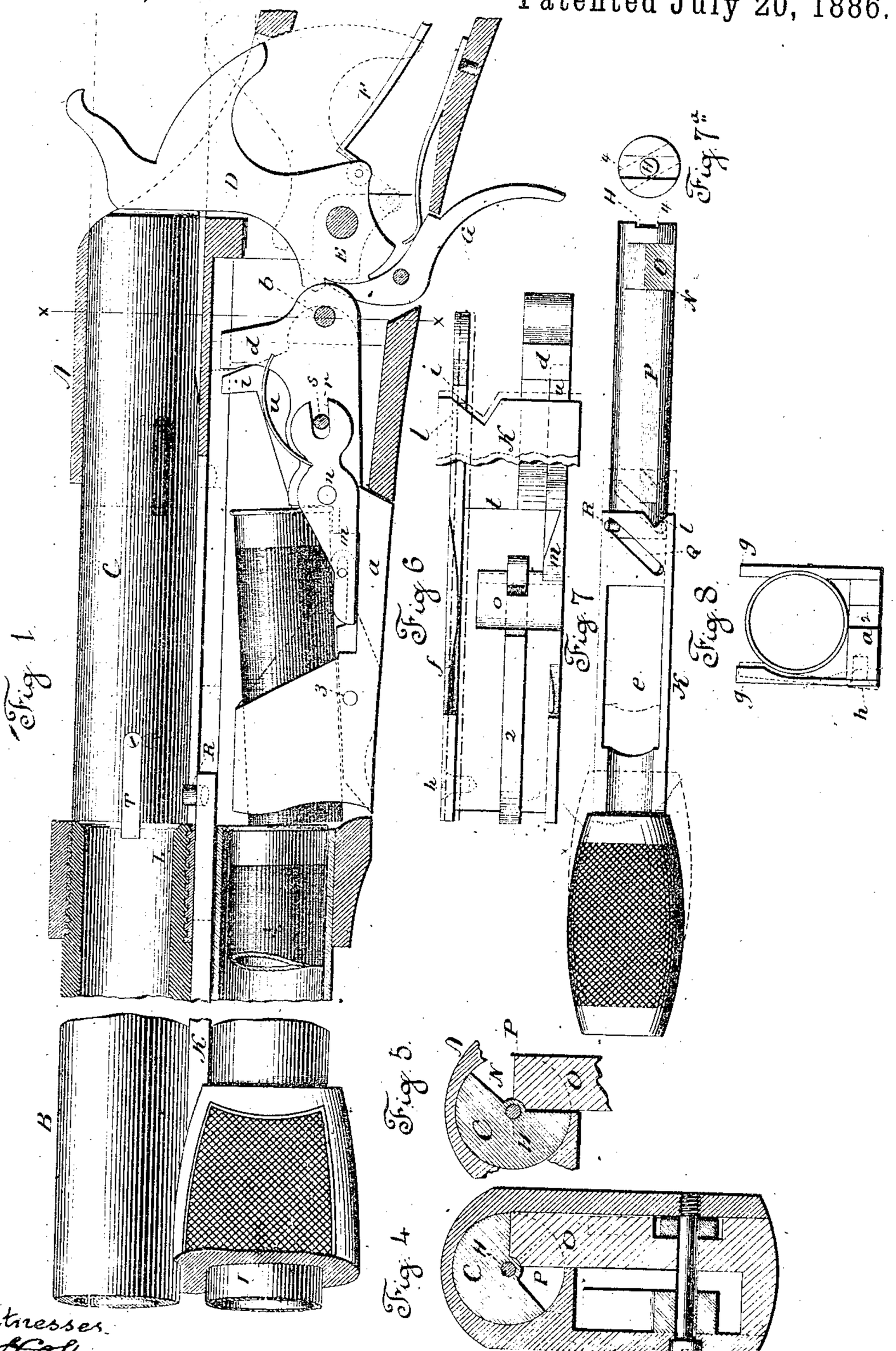
(No Model.)

2 Sheets—Sheet 1.

J. M. & M. S. BROWNING.

MAGAZINE FIRE ARM.

No. 345,881. Patented July 20, 1886.



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

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Fig 2.

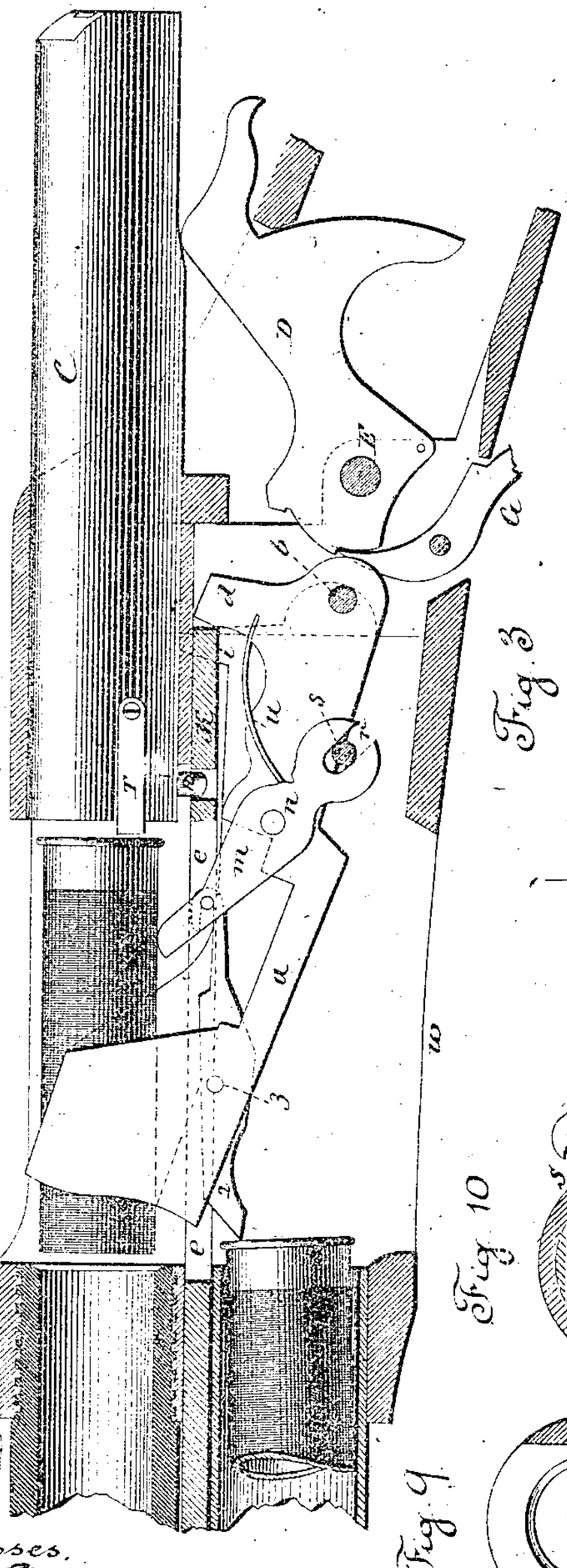


Fig 3

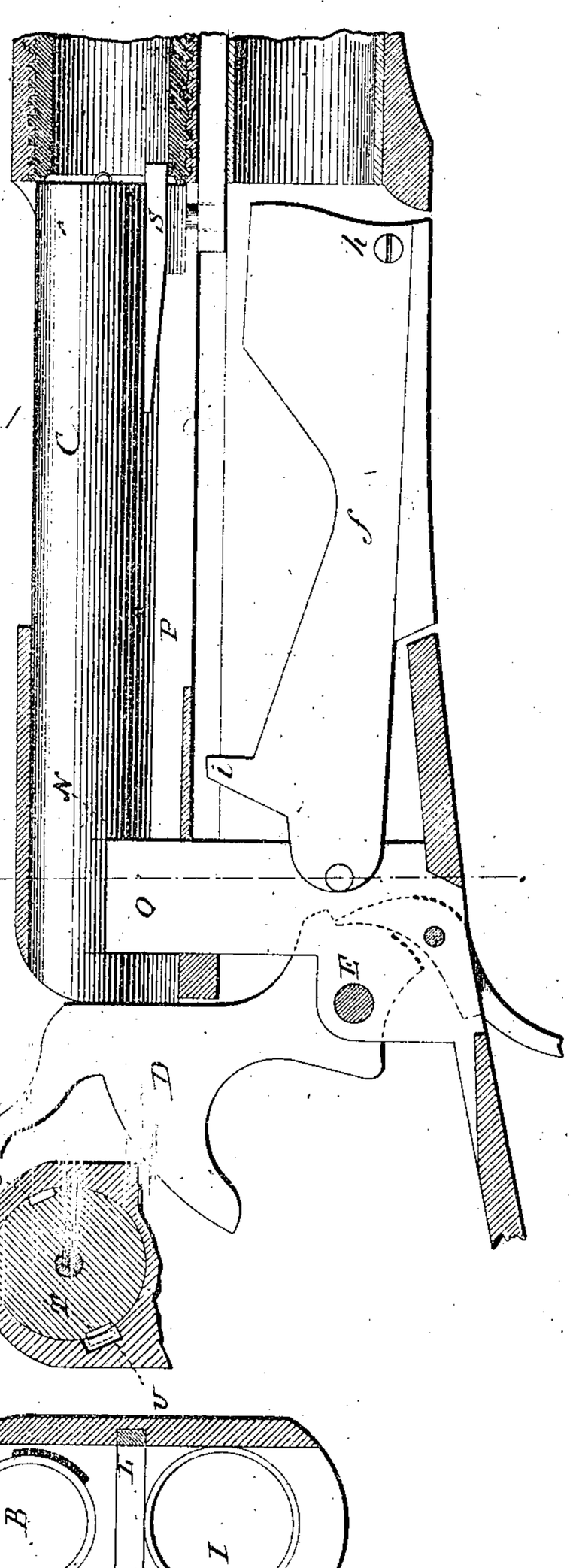


Fig 10

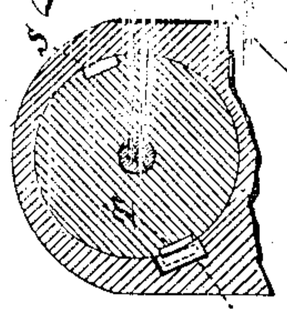
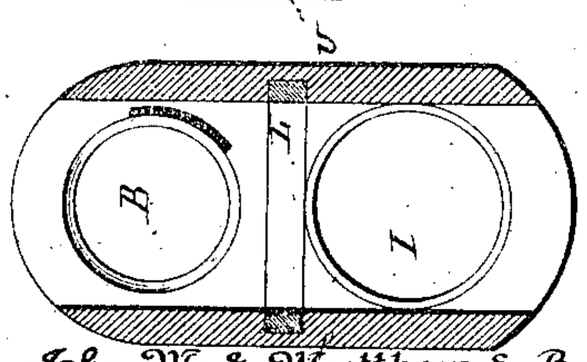


Fig 1



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J. A. Shumway
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John M. & Matthew S. Browning
Inventors.
By Atty.

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. 345,881, dated July 20, 1886.

Application filed December 28, 1885. Serial No. 186,852. (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 sectional side view of the arm, showing the parts in the closed or normal condition; Fig. 2, the same, showing the parts in the extreme open position; Fig. 3, a sectional side view of the reverse from Fig. 1; Fig. 4, a vertical central section cutting on line *x x* of Figs. 1 and 2, showing the breech-piece in the locked position; Fig. 5, the same, showing the breech-piece as turned from the locked position of Fig. 4 to the unlocked position; Fig. 6, a top view of the carrier, showing the rear end portion of the slide K as it is about to engage the carrier; Fig. 7, an under side view of the slide, the breech-piece showing the diagonal slot by which the slide is connected with the breech-piece; Fig. 7ª, a rear end view of the breech-piece; Fig. 8, a front end view of the carrier; Fig. 9, a transverse section cutting close up to the rear end of the barrel and looking forward; Fig. 10, a transverse section through the receiver and breech-piece when the breech piece is in the rear position, and cutting through the extractor and finger.

This invention relates to an improvement in that class of breech-loading and magazine fire-arms in which the breech-piece is arranged to be moved backward and forward in a longitudinal line with the barrel, commonly known as "bolt-guns," the object of the invention being the construction of an arm which will be specially adapted for the use of shot-shells, and by which rapid firing may be permitted, and while specially relating to magazine fire-arms, parts of the invention are applicable to single breech-loaders; and the invention consists in the construction and combination of parts, as hereinafter described and particularly recited in the claims.

A represents the receiver, to the forward end of which the barrel B is attached, and which opens rearward into the receiver; C, the breech-piece, arranged in the receiver in line with the barrel, and so as to move backward in opening and forward in closing in the axial line of the barrel; D, the hammer in rear of the breech-piece, hung upon a pivot, E, and provided with the usual mainspring, F, and trigger G. The breech-piece is provided with the usual firing-pin, H, (not shown in detail,) but against which the hammer strikes to impart its blow to the head of the cartridge in the usual manner.

Beneath the barrel and parallel therewith the magazine I is arranged, but so as to leave a space between the magazine and barrel. Upon the magazine a handle, J, is arranged, adapted to be readily moved backward and forward by the forward hand in the use of the arm. The magazine opens into the receiver below the breech-piece in the usual manner. From the handle J a slide, K, extends rearward between the magazine and barrel, and through a slot, L, in the receiver, as seen in Figs. 1 and 9, the slide being in a plane parallel with the axis of the barrel, and so as to move forward or back accordingly as the handle J is moved, guided by the grooves in the side of the receiver, as seen in Fig. 9. This slide and handle are designed to operate the mechanism of the arm.

The breech-piece C is constructed with a shoulder, N, near its rear end, which rests against a fixed abutment, O, in the receiver when the breech-piece is in the closed position, as seen in Figs. 3 and 4.

That the breech-piece may escape from the shoulder so as to be moved rearward, it is constructed with a longitudinal recess, P, below the shoulder, and so that a partial rotation of the breech-piece will take the shoulder above the abutment O, as seen in Fig. 5, and bring the recess P into line with the abutment, and so that the breech-piece may be moved rearward into the open position, as seen in Fig. 2. To impart such rotation to the breech-piece to disengage it from the abutment O the rear end of the slide K, which, when the breech-piece is closed, stands be-

neath its forward end, is constructed with a diagonal slot, Q, (see Fig. 7,) into which a stud, R, on the breech-piece extends, the stud standing at the rear end of the slot when the slide is in its extreme forward position, and so that on the first part of the rear movement of the slide, as from the position in Fig. 7 to that shown in broken lines, same figure, the inclined slot Q, working against the stud R on the breech-piece, will cause the stud R to travel through the slot to its opposite end, and in so doing will impart to the breech-piece sufficient rotation to take the shoulder M above or away from the abutment O, thus leaving the breech-piece free for rear movement. After the breech-piece has thus been turned and unlocked the continued rear movement of the slide K under the action of the handle J will force the breech-piece to its rear position, as seen in Fig. 2. Then on the return of the slide K the breech-piece will move forward with it to its closed position, and having arrived at its closed position the inclined slot Q, during the last part of the forward movement of the slide K, will return the breech-piece to bring its shoulder N into engagement with the abutment O, and so as to hold the breech-piece against recoil. On one side of the breech-piece is the usual spring extractor-hook, S, (see Fig. 3,) and upon the opposite side is a finger, T, adapted to bear against that side of the cartridge, and so that the head of the cartridge may be grasped between the extractor and the finger T in the usual manner; but instead of making the finger T rigid, as is generally done, I hang it loosely to the breech-piece, so that a slight lateral movement of it may be permitted at certain times. The extractor and the finger T enter the cartridge-chamber in the usual manner to grasp the flange of the cartridge, and that they may not interfere with the rotation of the breech-piece a corresponding recess is made in the rear end of the barrel, within which the extractor and finger may move to permit such rotation of the breech-piece. These recesses are seen in Fig. 9. The outer surface of the finger T corresponds to the outer surface of the breech-piece, and so that it is held in such position during the movement of the breech-piece; but at the extreme open position of the breech-piece a recess, U, is formed in the side of the receiver, (see Fig. 10,) corresponding to the finger T in that position, and so that when the finger arrives at the said recess it is free for lateral movement, and because of such freedom the grasp of the extractor upon the cartridge or case is released and the cartridge is free to be removed or ejected. Below the breech-piece the carrier *a* is hung upon a pivot, *b*, at the rear, and so as to swing up and down, as from the position seen in Fig. 1 to that seen in Fig. 2. When in its down position, it is adapted to receive a cartridge from the magazine, as seen in Fig. 1, and in its up position to present that cartridge in line with the barrel. At the rear end of the carrier is an upwardly-projecting arm, *d*, which stands in the path of the slide K in its rear movement, and so that as the breech-piece approaches its extreme rear position the rear end of the slide will strike the arm *d*, as indicated in broken lines, Fig. 1, and in completing the rear movement of the breech-piece, as seen in Fig. 2, the carrier will be raised to its up position. The slide K is constructed with an opening, *e*, (see Figs. 2 and 7,) through which the carrier may work. One side, *f*, of the carrier is loose, or hung to the body of the carrier, so as to permit a lateral swinging movement. The forward end of the two sides extend upward and form inwardly-overhanging fingers *g*, adapted to embrace the cartridge in the carrier. The side *f* of the carrier is hung upon the same pivot *b* as the carrier pivot, and is secured at its front end by a screw, *h*, but, as before stated, loosely hung, so as to permit the side *f* to swing inward, as indicated in broken lines, Fig. 8, or stand in that position, as seen in that figure. It is in this out or free position that the side *f* stands when the carrier is down, and so that the cartridge in the magazine may pass freely thereon. The side *f* is constructed with an upwardly-projecting arm, *i*, similar to the arm *d* on the body of the carrier. The rear end of the slide K is constructed with an inclined bearing-surface, *l*, in line with the arm *i* on the side *f*, and so that as the slide moves rearward, and just before it reaches the arm *d* of the carrier, the incline *l* will strike the arm *i*, as seen in Fig. 6, and under the continued movement of the slide the side *f* will be turned inward, as seen in broken lines, Figs. 6 and 8, and so that the cartridge will be grasped between the forward portions of the two sides, as seen in Fig. 8. Then as soon as the cartridge is grasped the slide strikes the arm *d*, as also seen in Fig. 6, and raises the carrier, with the cartridge so grasped between the two sides of the carrier that the cartridge cannot be thrown from the carrier, even under the quickest possible upward movement.

In the use of the common cartridges, such as used for sporting purposes, it is desirable that they shall be presented in a position substantially in axial line with the barrel—that is, without the inclination which would naturally follow from the position of the cartridge on the carrier. To do this I provide a device, which, as the carrier rises, will raise the rear end of the cartridge faster than the movement of the carrier. This device consists of a lever, *m*, hung on the side of the carrier upon a pivot, *n*, with a projection, *o*, from its forward arm onto the bottom of the carrier, as seen in Fig. 6. Its rear arm is constructed with a slot, *r*, which works upon a stud, *s*, fixed in the side of the receiver, and so that when the carrier stands in its down position the inward projection, *o*, lies upon the bottom of the receiver, and so that the cartridge may readily pass from the magazine over the projection *o*, and against an abutment or stop, *t*, on the carrier,

as seen in Fig. 1; but as the carrier rises the stationary stud *s* holds the rear arm of the lever, thereby causing the forward arm to rise more rapidly than the carrier, and to such an extent that when in its up position, as seen in Fig. 2, it will have raised the rear end of the cartridge into a position in substantially axial line with the barrel and forward of the open breech-piece, as seen in Fig. 2. A spring, *u*, is applied to the carrier, its rear end being fixed above the pivot, say as in the arm *d*, the forward end taking a bearing in the lever *m* at its hub and between its pivot and the fixed stud *s*. The tendency of this spring is to force the lever *m* to its down position; but because its rear end is fixed, the reaction of the spring is rearward against the arm *d*, and therefore tends to hold the carrier in its up position to the extent that the spring is compressed by the turning of the lever *m* independent of the carrier, and as indicated in Figs. 1. and 2. As the carrier returns to its down position the lever *m* is also returned because of its engagement with the fixed stud in the receiver. In the bottom of the receiver is an opening, *w*, (see Fig. 2,) which is filled by the bottom of the carrier, as seen in Fig. 1, so that when the arm is in its closed position the bottom of the receiver is closed; but when the carrier is raised the bottom of the receiver is open to the rear end of the magazine, and so that the magazine may be charged through that opening *w*.

To provide a latch which will hold the column of cartridges in the magazine during the movement of the carrier, and also serve as a latch to engage each cartridge as it is introduced into the magazine, I hang a lever, 2, in a slot in the bottom of the carrier upon a pivot, 3, its forward arm extending toward the magazine, and its rear arm hung to the forward arm of the lever *m*, and so that while in the down position the lever 2 will stand entirely within the carrier. As the carrier rises, the lever *m* will raise the rear arm of the lever 2 and turn its forward end downward in rear of the magazine, and so as to stand in rear of the column of cartridges and form a stop, as indicated in Fig. 2. The spring of the carrier permits the lever 2 to serve as a latch on the introduction of the cartridges, so that the head striking the lever 2 will turn its nose inward until the cartridge passes beyond it, then under the action of the carrier-spring will be returned into its position in rear of the last-entered cartridge.

To charge the magazine, the parts are thrown to their open position, as seen in Fig. 2, and the cartridges introduced through the opening beneath the carrier.

To prevent the hammer from coming upon the firing-pin until the breech-piece is in its closed position, I construct the rear end of the breech-piece with a diametrical groove or recess 4, (see Fig. 7ª,) and into which the nose of the hammer may strike. The rear end of the firing-pin stands in this recess, as seen in Fig. 7, and so that the hammer must enter the recess in order to strike the firing-pin. When the breech-piece is in its closed position, the recess stands in the plane of the hammer; but as the breech-piece is rotated, the recess is brought to a diagonal position, as indicated in broken lines, Fig. 7ª, and so that the hammer cannot enter the recess; hence there is no liability of contact between the hammer and firing-pin, excepting when the breech-piece is in its extreme closed position, so as to bring the recess 4 into the plane of the nose of the hammer.

The hammer should be provided with a rebounding attachment, so that after it has struck its blow it may return so far as to take its nose out of the recess 4, and so as to permit the opening movement of the breech-piece. Such a rebounding device is not shown, as it is a common and well-known mechanism, and not essential to this invention.

A carrier having one side loose, so as to be turned inward or outward to open or close the carrier upon the cartridge, is shown in another application. We therefore do not claim, broadly, in this application such a construction of carrier. The carrier is thrown down as the breech-piece advances by the forward end of the breech-piece coming in contact with an incline on the carrier in substantially a well-known manner.

The arrangement of the lever *m* in the carrier to raise the rear end of the cartridge may be applied to other magazine-arms having a carrier which swings upward and downward from a pivot at the rear and in connection therewith.

The stop or latch lever 2 may be employed where the charging of the magazine is made from below the carrier and when the carrier is in the raised position. We therefore do not wish to be understood as limiting these parts of our invention to any particular devices for raising and lowering the breech-piece.

The arrangement of the slide between the magazine and barrel, and so as to work through a slot in the receiver between the magazine and barrel, in engagement with the operative parts of the arm, may be employed in connection with various mechanisms in this class of fire-arms.

It will be understood that we do not claim, broadly, an arm in which a slide extends from the handle forward of the receiver backward to engage the mechanism of the arm, as such, we are aware, is not our invention; but we are not aware that a slide has been arranged between the barrel and magazine—that is, below the barrel and above the magazine—its forward end connected to the handle and extending rearward through a slot in the receiver between the magazine and barrel, the essential feature in our invention. Neither do we claim, broadly, a magazine-arm having the carrier actuated by a slide or extension from a handle forward of the receiver.

We claim—

1. In a magazine fire-arm in which the mag-

azine is arranged beneath the barrel and the operative mechanism in the receiver in rear of the barrel, the combination therewith of a handle surrounding the magazine, and movable backward and forward, and the slide between the magazine and barrel attached to said handle and extending through an opening in the receiver between the magazine and barrel, the said slide in connection with the operative mechanism of the arm, substantially as described, and whereby the forward and back sliding movement of the handle and slide imparts corresponding movement to the operative parts in the receiver.

2. 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, and constructed with a shoulder, N, near its rear end, and with a longitudinal recess, P, a stationary abutment, O, in the receiver, a slide arranged beneath the barrel and provided with a handle, whereby longitudinal reciprocating movement may be imparted to said slide, the said slide extended through a slot in the receiver beneath the barrel, its rear end constructed with the diagonal slot Q, and the breech-piece provided with a corresponding stud, R, to work in said slot Q, substantially as described.

3. In a magazine fire-arm having the magazine arranged beneath the barrel, the combination therewith of a slide, K, arranged between the barrel and magazine and adapted to work through a slot formed in the receiver between the barrel and magazine, said slide provided with a handle, whereby forward and back reciprocating movement may be imparted to said slide, the breech-piece C, arranged to move backward and forward in axial line with the barrel, and also adapted for partial rotation, the said slide constructed with a diagonal slot, Q, and the breech-piece provided with a corresponding stud, R, arranged to work in said slot, a shoulder, N, on the breech-piece, corresponding fixed abutment O in the receiver, against which said shoulder is brought or from which it is removed by the rotation of the breech-piece, and a carrier arranged beneath the breech-piece and adapted to move up and down to transfer a cartridge from the magazine to the barrel, the said slide constructed with an opening through which said carrier will work when the breech-piece is in the open position, substantially as described.

4. In a magazine fire-arm in which the magazine is arranged beneath the barrel, the combination therewith of a breech-piece arranged in the receiver to be moved back and forward in axial line with the barrel, and a slide, K, between the barrel and magazine, and adapted to work through a slot formed in the forward end of the receiver backward and forward between the breech-piece and carrier, said slide provided with a handle surrounding the magazine, the said slide connected with the breech-piece, whereby said breech-piece will receive a back and forward movement from said slide, and the said slide constructed with an opening, *e*, through which the carrier will move to transfer the cartridge from the magazine to a position forward of the front face of the breech-piece with a carrier hung in the rear beneath the breech-piece, provided with an arm, *d*, extending upward from its pivot, the said arm standing in the path of the rear end of said slide, and with which said slide will engage as the breech-piece approaches its extreme open movement, substantially as described.

5. In a magazine fire-arm in which the magazine is arranged beneath the barrel, the combination therewith of a breech-piece arranged in the receiver to be moved backward and forward in the axial line of the barrel, a slide between the magazine and barrel and arranged to work through a slot in the receiver between the magazine and barrel, and the slide provided with a handle, the said slide connected to the breech-piece, whereby the forward and back movement of the slide will be imparted to the breech-piece, and a carrier hung at the rear, beneath the breech-piece, and so as to swing upward and downward, the said carrier having one of its sides *f* hung loosely to the body of the carrier, and the forward ends of the two sides constructed with overhanging fingers *g*, the body of the carrier constructed with an arm, *d*, extending up from its rear end into the path of the slide K, the loose side *f*, also constructed with a similar arm, *i*, in the path of the said slide K, but forward of the arm *d*, the said slide constructed with an incline, *l*, adapted to engage the said arm *i* of the loose side of the carrier before the rear end of the slide shall engage the arm *d* of the carrier, substantially as and for the purpose described.

6. In a magazine fire-arm in which the magazine is arranged beneath the barrel, the combination therewith of a breech-piece arranged to be moved backward and forward in the axial line of the barrel, a carrier hung at the rear beneath the barrel and arranged for up-and-down movement for the transfer of the cartridge, the lever *m*, hung to said carrier, one arm extending rearward, and a fixed stud, *s*, in the receiver, adapted to engage said rear arm in the up-and-down movement of the carrier, the forward arm of the said lever *m* extending onto the bottom of the receiver, with mechanism, substantially such as described, to impart reciprocating movement to the breech-piece and the up-and-down movement to the carrier, substantially as described.

7. In a magazine fire-arm in which the magazine is arranged beneath the barrel, the combination therewith of a breech-piece arranged to be moved backward and forward in the axial line of the barrel, a carrier hung at the rear beneath the breech-piece and arranged for up-and-down movement for the transfer of the cartridge, the lever *m*, hung to

said carrier, one arm extending rearward, and a fixed stud, *s*, in the receiver, adapted to engage said rear arm in the up-and-down movement of the carrier, the forward arm of the said lever *m* extending onto the bottom of the receiver, with mechanism, substantially such as described, to impart reciprocating movement to the breech-piece and the up-and-down movement to the carrier, with the spring *n*, one end of which takes a bearing on the carrier above the pivot, the other end on said lever between its pivot and the fixed stud in the receiver, substantially as and for the purpose described.

8. In a magazine fire-arm in which the magazine is arranged beneath the barrel, the combination therewith of a breech-piece arranged to be moved backward and forward in the axial line of the barrel, a carrier hung at the rear beneath the barrel and arranged for up-and-down movement for the transfer of the cartridge, the lever *m*, hung to said carrier, one arm extending rearward, and a fixed stud, *s*, in the receiver, adapted to engage said rear arm in the up-and-down movement of the carrier, the forward arm of the said lever *m* extending onto the bottom of the receiver, with mechanism, substantially such as described, to impart reciprocating movement to the breech-piece and the up-and-down movement to the carrier, and the lever 2, hung in the carrier forward of said lever *m*, the rear arm of said lever 2 in slotted connection with the forward arm of said lever *m*, the forward arm of said lever 2 extending toward the magazine, substantially as described.

9. In a fire-arm in which the breech-piece is arranged to move backward and forward in longitudinal line with the barrel, and in which a partial rotation is imparted to the breech-piece both prior to and after its opening movement, the combination therewith of an extractor-hook, S, on one side of the breech-piece, and a finger, T, hung loosely on the opposite side of the breech-piece, the said finger adapted to work against the surface of the receiver in the backward and forward movement of the breech-piece, the receiver constructed with a recess, U, at the extreme rear movement of the breech-piece, into which the said finger T may move laterally, substantially as and for the purpose described.

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