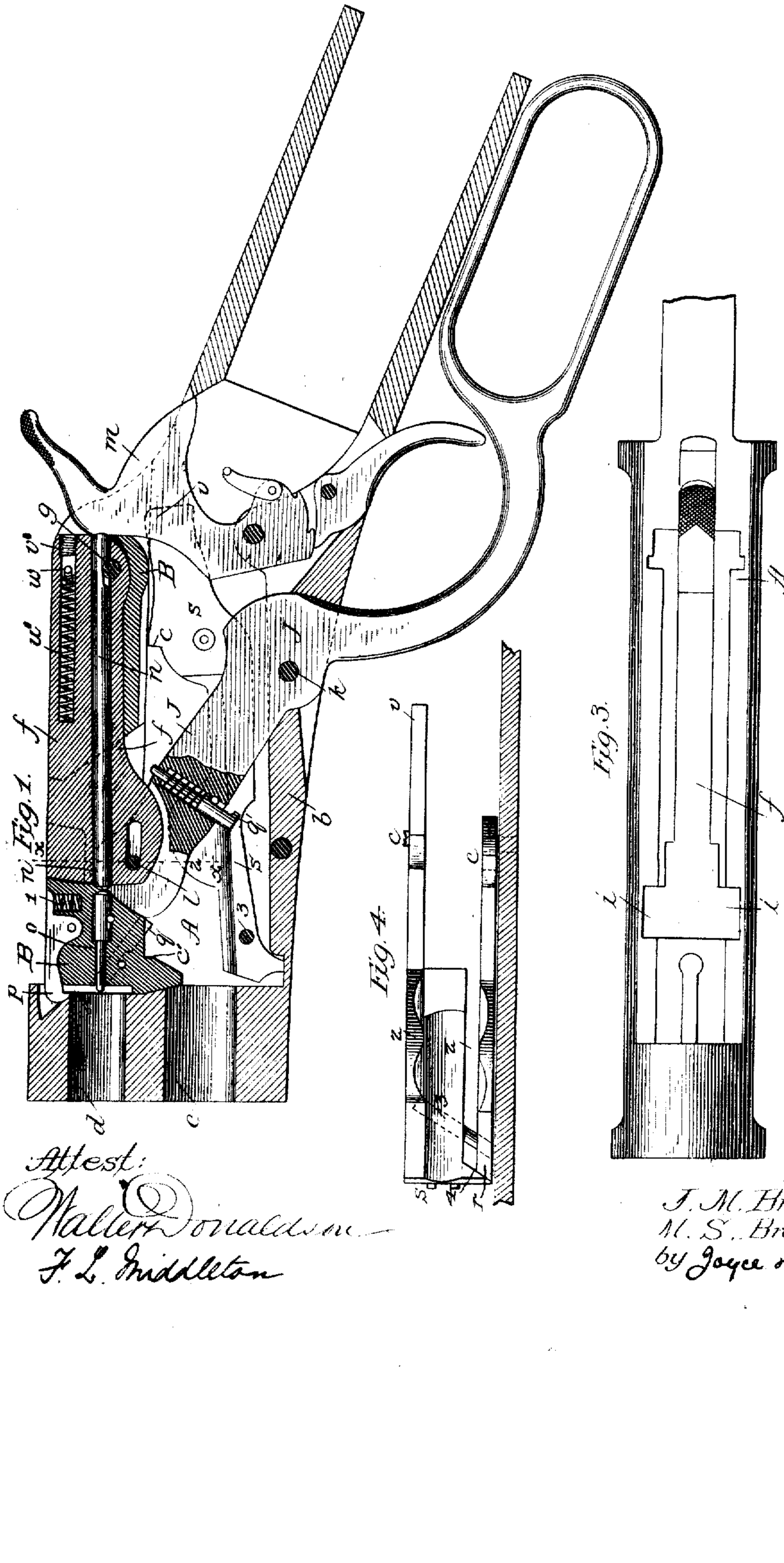
(No Model.) 3 Sheets—Sheet 1.

J. M. & M. S. BROWNING

MAGAZINE GUN.

No. 324,296. Patented Aug. 11, 1885.



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(No Model.) 3 Sheets—Sheet 2.

J. M. & M. S. BROWNING.

MAGAZINE GUN.

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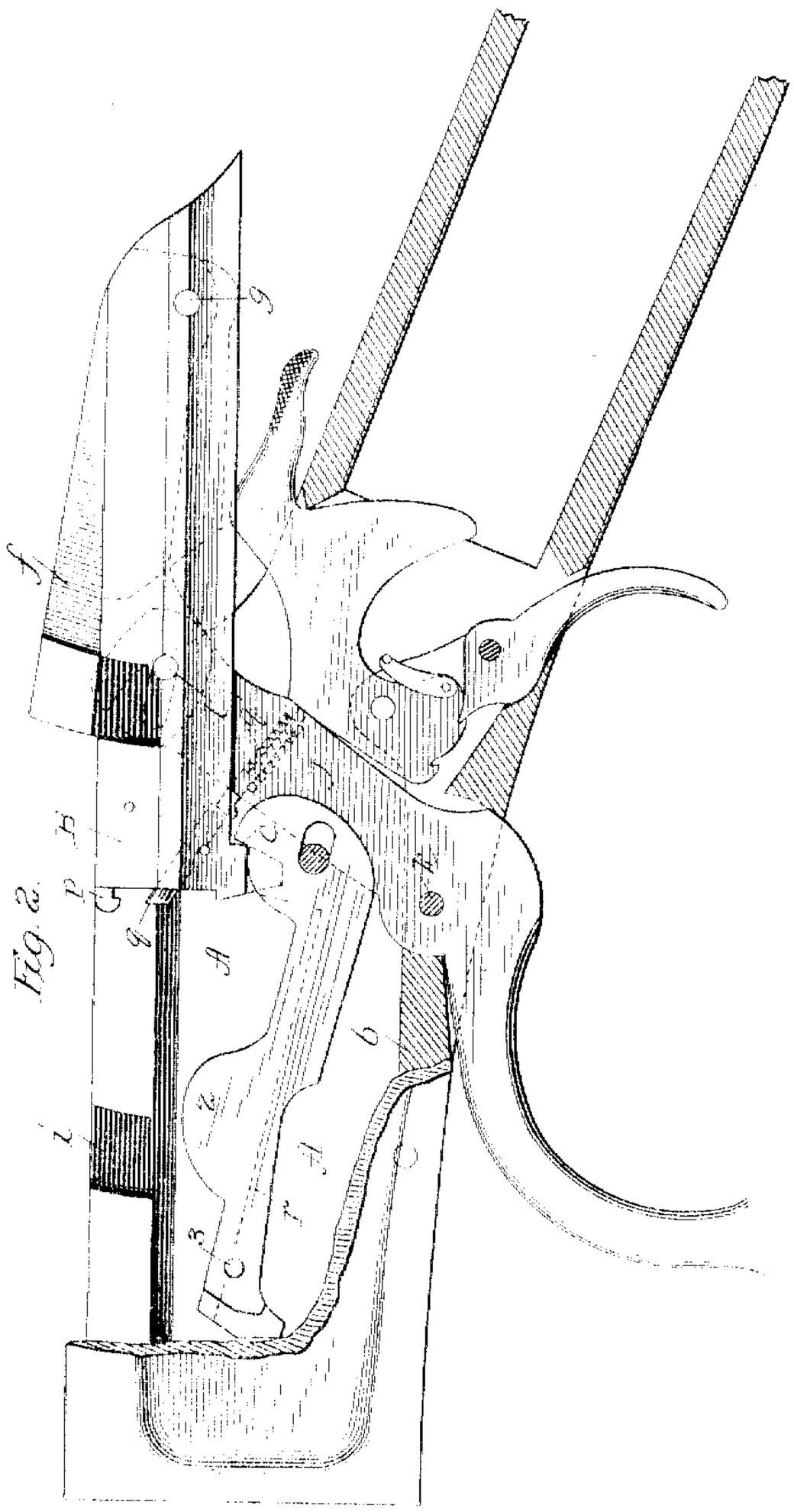

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(No Model.)

3 Sheets—Sheet 3.

J. M. & M. S. BROWNING.

MAGAZINE GUN.

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Fig. 6.

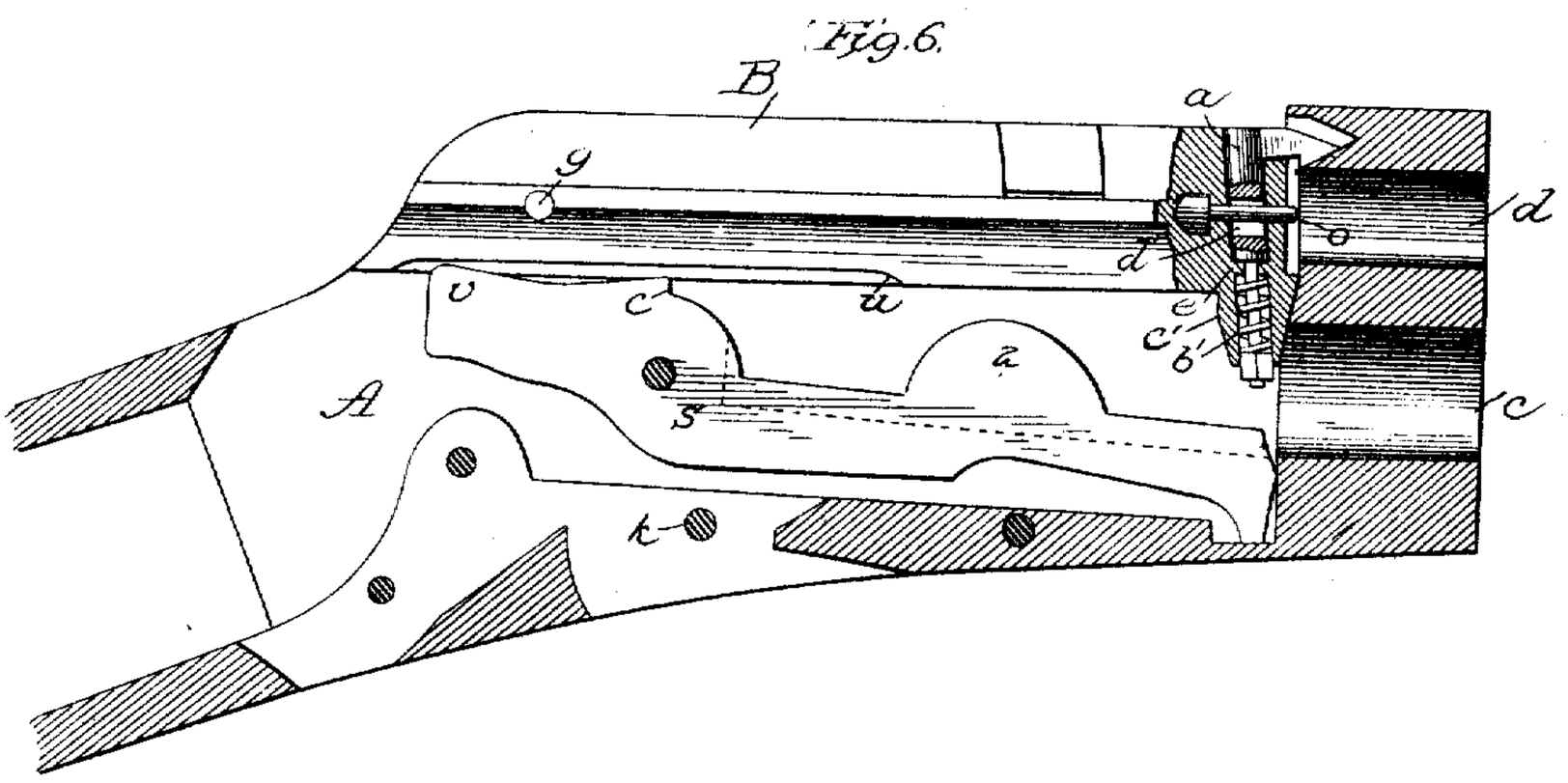


Fig. 5.

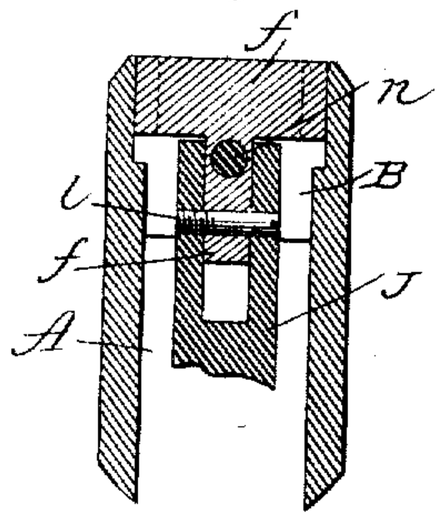
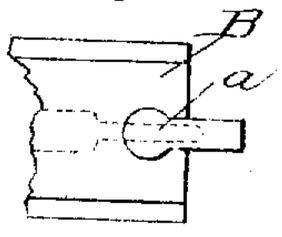


Fig. 7.



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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-GUN.

SPECIFICATION forming part of Letters Patent No. 324,296, dated August 11, 1885.

Application filed March 5, 1885. (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 and useful Improvement in Magazine-Guns; and we do hereby declare that the following is a full, clear, and exact description of the same.

Our invention relates to that class of breech-loading fire-arms in which the breech piece or bolt is arranged to move back and forth in an axial line with the bore of the barrel, and is operated by a finger-lever extending below the receiver and forming the trigger-guard.

The main part of the invention is adapted especially to magazine-guns, but is also applicable to single loaders. In connection with this main part we have also shown subordinate features, all as hereinafter fully explained. The principal part of the arm is the device for locking the bolt when the breech is closed, the object of this being to provide an indestructible dead-lock for the bolt. The second feature consists of an improved construction of ejector. The third feature relates to the construction of the carrier, and the subordinate features are explained hereinafter.

In the accompanying drawings, Figure 1 shows a central longitudinal vertical section of the receiver and bolt of the arm with its adjacent parts, and with the working parts in side elevation, the figure showing the breech closed. Fig. 2 shows a like section with the working parts in side elevation and with the breech open. Fig. 3 is a top view of the receiver and bolt with its adjacent parts. Fig. 4 is a plan view of the carrier. Fig. 5 is a sectional cut on line *x x*, looking from point 1, Fig. 1. Fig. 6 is a side view with the wall of the receiver taken away, showing the extractor and the improved carrier for cutting off the cartridges in the magazine or stopping the one next to the one coming into the carrier at any point desired. Fig. 7 is a detail plan view of the extractor shown in Fig. 6.

In these drawings, the receiver A with its bottom plate, *b*, and the magazine *c* and barrel *d* are shown in their usual relation to each other. The bolt B is arranged to be moved longitudinally from the rear end of the barrel, in order to open, and toward it to close, the breech. The bolt slides in guiding-grooves in the usual manner. The upper part of the bolt is chambered out to receive the locking-block *f*. This locking-piece, in connection with the lever, locks the bolt in position to close the breech. The main part of the locking-piece is narrow, as shown in plan view, and is enlarged at the forward end, the chamber in the bolt being formed accurately to receive it. The piece is pivoted at its rear end within the bolt by a pivot, *g*. The front end of the locking-piece is formed on a curve struck from this pivot *g*, and the front wall of the chamber in the bolt has a corresponding curve, so that the locking-piece fits accurately against it when said piece is down in locking position. The wide side of the forward end of the locking-piece extends laterally below the bolt and fits accurately into a recess, *i*, cut into the walls of the receiver on the arc of a circle struck from the same pivot *g*. This recess in the wall extends down to or near to the lateral guiding-grooves of the bolt, and when the locking-piece is down the lateral wings or extensions of its forward end extend down near to this groove. The forward end of the locking-piece has sufficient upward movement to cause the lateral extensions to clear the lateral recess.

The locking-piece is pivoted to the lever J by a pin, *l*. The lower part of the locking-piece is made thin, and extends between the split end of the lever. The pin passes snugly through the end of the lever and through a slot in the locking-piece, this slot being long enough to provide for the necessary lost motion in the operation of the parts. The lever J is pivoted at *k* in the receiver. Its front end fits against the bolt on an arc of a circle formed from the joint-pin *k*, and the rear of the lever is also formed on an arc of the circle struck from the same pin and bears against a correspondingly-shaped portion of the abutment of the bottom plate.

The parts are so adjusted to each other that as soon as the bolt is brought to its seat in the breech the lateral extensions of the end of the locking-piece are in line with the recess *i*, and

further movement of the lever brings down the locking-piece with these extensions in the recess *i*. At the same time the rounded bearings on the lever fit against the abutment in the bolt and the bottom plate so that the bolt is securely locked in place by an indestructible lock.

In order to hold the breech closed, a spring may be applied in various ways. We have shown a convenient form in Fig. 1, for which the locking-piece is bored longitudinally from the rear and a spring, *u'*, inserted, the hole being stopped by a plug, *v'*. The front end of the spring bears against the bottom of the hole and the rear end against a pin, *w*. The pin passes through the bolt and through the locking-piece, the hole in the locking-piece being elongated to allow the necessary movement of the locking-piece. The elongated hole may be grooved and the arc of a circle struck from the point *y*, and as the front end of the piece is raised the spring is compressed by the movement of the piece on the pin *w*, the spring thus having the effect to hold the front end of the locking-piece continually down, and with it the lever to which it is connected.

The hammer *m* is arranged to strike the pin *n*, contained in the locking-piece, and adapted to slide with a limited movement in said piece, with its front end projecting, when pressed forward, slightly beyond the front end of the piece. When the locking-piece is down in position, which, as before explained, occurs when the breech is closed, the pin *n* is in line with the firing-pin *o* in the front end of the bolt, and it is only when the parts are in this position, as shown in Fig. 1, that the blow of the hammer can be transmitted to the cartridge.

The bolt is adapted to be used with any ordinary extractor—for example, as that shown in Fig. 1; but we have devised an improved form which we purpose to use with this gun. This form is shown in Figs. 6 and 7. The front end of the bolt is bored out to receive the shank *a* of the extractor. This bore is slightly inclined, the lower part being a little forward of the upper part, which causes the extractor to hug more closely to the shell when the bolt is drawn back.

The hole fitted to the reduced end of the ejector-shank is preferably first formed by boring a smaller hole, which is then enlarged from both ends, leaving a shoulder or rib, *e*. The shank is formed with a slot, *d'*, adapted to receive the firing-pin and to permit the necessary vertical movement of the extractor. The extractor is drawn down by means of a spring, *b'*, the upper ends of which rest against the shoulder *e* and the lower against a nut, which gives it a proper tension. The plan view, Fig. 7, shows the relation of the ejector and firing-pin.

An ejector-pin, *q*, is set in the front end of the bolt in an inclined position, and has suitable movement, so that it may advance beyond the face of the locking-bolt, as shown in Fig. 2. Another pin, *q'*, is placed in the finger-lever in such position that when the lever is thrown back the front end of pin *q''* will press against the rear end of the pin *q*. The latter pin is set in the bolt so as to project from its face to one side of its center. The pin *q''* is provided with a spring, as at 5, which keeps it pressed outward against the pin in the bolt, and this pressure being exerted upon the shell or cartridge head near its edge will force the shell to one side and slightly under the overhanging flange of the receiver, and thus hold it down until the carrier begins to rise, the spring while exerting this pressure being slightly compressed. When this latter action takes place, the shell or cartridge will be drawn from under the side of the receiver and lifted up slightly. The spring ejector-pin *q''* will then exert its whole force, and its rear end will also strike against the hammer, as shown in Fig. 2, and the shell will be thrown from the piece. During this action the shell is held in the usual manner by the extractor upon its upper edge.

Our improved carrier is designed not only to clamp the cartridge, but also, in connection with the special construction of the beveled shoulder *u* upon the side of the bolt, it is designed to stop the next cartridge in front of the one moving upon the carrier, and to prevent it from following the first upon the carrier. Otherwise it would lock the carrier and prevent it from rising. This is liable to happen where a cartridge is used of too little length. The carrier is composed of two parts, *r* and *s*. These are pivoted to the receiver by two short screws passing through their rear ends. The rear ends also extend upward and have shoulders, as shown at *c*, these shoulders being arranged to be struck by the shoulders *c'* on the forward end of the bolt in the usual manner. The sides are also provided with upwardly-extending wings 2, adapted to grip the cartridge when the sides are brought together. The rear end of the part *s* also extends back and up, as shown at *v*, entering slightly into a recess in the under side of the bolt. This recess terminates at the front in a beveled shoulder, *u*, which is intermediate between the shoulder *c'* on the bolt and the projection *v* on the carrier. The shoulder *u* acts upon the projection *v* to elevate the carrier sufficiently to block the entrance thereto, and the shoulder *c'* in the continued movement of the bolt acts upon the projection *c* to elevate the carrier and cartridge carried thereby to the bore of the gun. The distance between *u* and *v* is of course less than that between *c'* and *c*, in order to give the successive movements to the carrier. A screw-pin, 3, passing through the side pieces diagonally, is made fast to the part *s*, and fits loosely into the part *r*. The forward ends may be fitted to each other by inclined faces, as shown at 4. The part *r* is slotted where it is pivoted to the receiver, as shown in Fig. 2. The upwardly extension on the part *r* is farther forward when the car-

rier is down than the part *s*, so that when the bolt moves back it strikes the shoulder on the part *r* first, and the part *s* having no longitudinal movement on its pivot the part *r* is carried back, and by reason of the inclination of the pin 3 the forward ends are brought together, clamping the cartridge on the carrier; but this clamp will be released as soon as the bolt begins to move forward.

In the operation of the gun, when the breech bolt is drawn back the incline *u* is caused to strike against the rear upper end of the carrier, moving the forward end up slightly, so as to obstruct the passage of the next cartridge upon the carrier. It is held in this position until the projection on the bolt strikes the projection on the carrier and throws the carrier up, bringing the cartridge into line with the bore of the gun.

The operation of the gun is as follows: Suppose there is a cartridge in the barrel and the magazine is loaded and breech closed, the breech is opened by pressing the lever forward in the usual manner. The first effect of this movement is to raise the front end of the locking-piece and this unlocks the bolt. The lever through the locking-piece carries the bolt back, the extractor being engaged with the flange of the cartridge and drawing it back, at the same time sliding back on the carrier from the magazine. The hammer has been forced back to full cock and caught by the trigger. When near the limit of the backward movement of the bolt, the shoulder on its front end strikes the upward extension of the part *r* of the carrier and slides said part backward, causing the carrier to grip the cartridge, holding it firmly. Further movement of the bolt causes it to strike the shoulder on the part *s*, and the whole carrier is raised till the forward end of the cartridge is in line with the bore of the barrel. At the same time the ejector-pins have come into line with each other, and are pressed forward by striking against the hammer, so that the forward pin is forced out, thus throwing out the shell or cartridge. The movement of the lever being reversed, it first opens the carrier by releasing the part *r*. Continued movement causes the bolt to force the cartridge from the carrier into the barrel, and then throw down the carrier to receive another cartridge from the magazine. Finally, it draws the locking-piece into place. This leaves the firing-pins in line, and the gun is ready to fire.

It will be observed that the gun cannot be discharged until the breech is closed and locked, as the pins do not come into line until the locking has been effected.

We claim as our invention—

1. In a magazine-gun, the combination, with a sliding bolt, of a chamber therein, a locking-piece fitting within said chamber and pivoted to the bolt at the rear end thereof, lateral extensions on said locking-piece adapted to fit into recesses in the sides of the receiver, and an operating-lever to which the said locking-piece is pivoted, substantially as described.

2. In a magazine-gun, the combination, with a sliding bolt, of a chamber in the top thereof, a locking-piece pivoted within said chamber to the bolt, lateral extensions on the forward end of the locking-piece adapted to corresponding recesses in the walls of the receiver, and an operating-lever connected to said locking piece by a pin and slot connection, substantially as described.

3. In a magazine-gun, and in combination with the recessed side walls of the receiver and the sliding bolt having a chamber therein, the locking-piece *f*, pivoted within the said chamber at the rear end thereof and having lateral extensions on its forward end adapted to the recesses of the receiver, the operating-lever pivoted to the said locking-piece at the forward end thereof, and a spring contained in said locking-piece adapted to keep the forward end down, and through it the lever, substantially as described.

4. In combination with the sliding bolt, the firing pin made in two parts, one of said parts being carried in the forward end of the said bolt, the locking-piece fitted to a recess in the sliding bolt and carrying the other part of the firing-pin, and the operating-lever, all the parts being constructed and arranged whereby the section *n* of the pin is moved out of alignment with the section *o* when the breech begins to open, and is in alignment therewith when the breech is fully closed, substantially as described.

5. In a magazine-gun, the combination, with a sliding bolt, operating-lever, and extractor, of the ejector-pins *q q'*, one of said pins being carried in the sliding bolt and the other in the operating-lever, and adapted to operate in connection with each other in the manner described.

6. In a magazine-gun, the combination, with a sliding bolt and operating-lever, of a two-part carrier provided with extensions on the upper rear portion thereof adapted to be struck by shoulders on the bolt, and extensions on the upper front portion thereof adapted to grasp the cartridge, one part of said carrier being pivoted on a pin projecting through the wall of the receiver and passing through a slot in the rear thereof, and the other part being pivoted on a similar pin to turn without sliding, all substantially as described.

7. In a magazine-gun, the combination, with a sliding bolt and operating-lever, of the two-part carrier *r s*, the diagonal screw or pin 3, and the extensions 2 in the upper front portion of said carrier, whereby, when the bolt is retracted, the part *r* of the carrier is moved longitudinally and laterally on the pin 3 toward the part *s* to grasp the cartridge, all substantially as described.

8. In a magazine-gun, the combination, with a sliding block and operating-lever, of a two-part carrier, one of said parts being provided with a rear extension, *v*, projecting upward

into a recess in the bolt, the said recess terminating in a shoulder, *u*, which is adapted to strike and depress the extension *v* to slightly raise the forward end of the carrier to arrest the cartridge next to that on the carrier, and the projection *c'*, on the forward end of the bolt, adapted in the continued movement of the bolt to act upon the projection *c* above the pivotal point of the carrier to elevate the said carrier and present the cartridge to the bore of the gun.

9. In a magazine-gun, the combination, with a sliding bolt, of an extractor having a shank fitted to a recess extending downward through the end of the bolt and a spring on said shank, substantially as described.

10. In a magazine-gun, the combination, with a sliding bolt, of an extractor, a shank extending at an angle thereto and fitted to an inclined hole in the bolt end, and a spring on said shank, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOHN M. BROWNING.
MATTHEW S. BROWNING.

Witnesses:
LOUIS FARR,
D. W. FELSHAW.