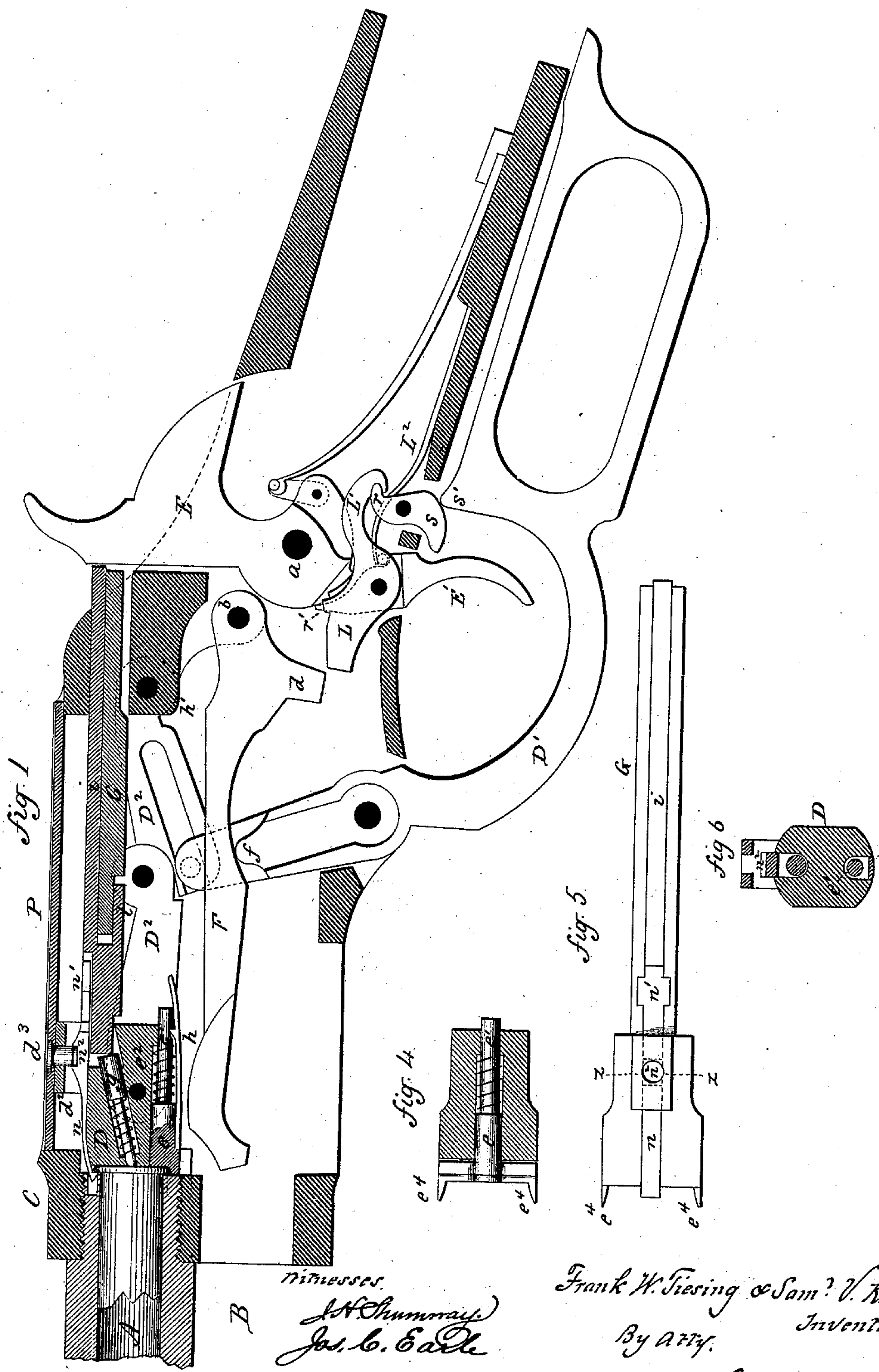


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F. W. TIESING & S. V. KENNEDY.
Magazine-Gun.

No. 218,462.

Patented Aug. 12, 1879.



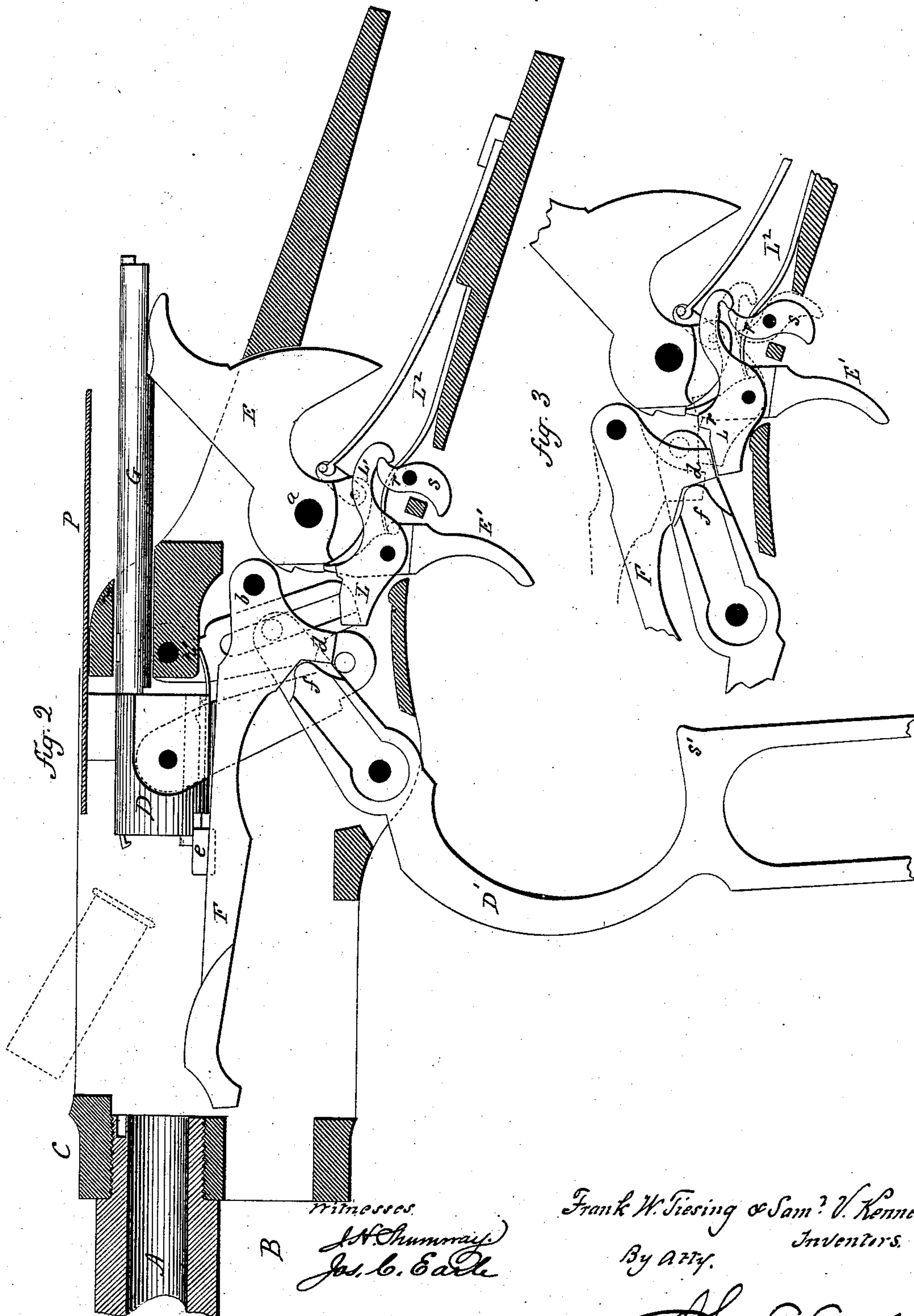
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Frank W. Tiesing & Sam^r V. Kennedy
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UNITED STATES PATENT OFFICE.

FRANK W. TIESING AND SAMUEL V. KENNEDY, OF NEW HAVEN, CONN.,
ASSIGNORS TO ELI WHITNEY, OF SAME PLACE.

IMPROVEMENT IN MAGAZINE-GUNS.

Specification forming part of Letters Patent No. **218,462**, dated August 12, 1879; application filed
January 6, 1879.

To all-whom it may concern:

Be it known that we, FRANK W. TIESING and SAMUEL V. KENNEDY, both of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Magazine Fire-Arms; and we do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, which said drawings constitute part of this specification, and represent, in—

Figure 1, longitudinal section, the breech-piece closed; Fig. 2, sectional side view, the breech-piece open; Figs. 3, 4, 5, and 6, detached views.

This invention relates to an improvement in that class of magazine fire-arms in which the magazine is arranged beneath the barrel; and it consists in the construction and combination of parts, as hereinafter described; and more particularly recited in the claims.

A is the barrel; B, the magazine in connection with the frame C, in the usual relation to each other; D, the breech-piece, arranged to move longitudinally back and forth from the breech by means of the lever D^1 , operating through links D^2 , substantially as in the arm known as the "Smith & Wesson patent," and so that as the lever is thrown down, as in Fig. 2, the breech-piece is drawn to open the breech and turned to place to form the trigger-guard, as in Fig. 1, closes the breech, and holds the piece in the closed position; E, the hammer, hung upon the pivot a , and with the usual trigger E' , by which to set and discharge the hammer.

F is the carrier, hung at the rear on a pivot, b , and extending forward over a cam, f , on the upper arm of the lever D^1 , and so as to be held up in position seen in Fig. 1 by the said cam; or during the last part of the opening movement of the said lever the said cam strikes a projection, d , on said carrier, as in Fig. 2, and on the completion of the opening movement of the lever turns the carrier down, as from the position in Fig. 2 to that in Fig. 3, which presents the carrier to the mouth of the magazine to receive a cartridge therefrom; and then, during the first part of the move-

ment of the lever D^1 in closing the breech, the carrier will be raised to the position in Fig. 2, presenting the cartridge in line with the barrel, and so that the advancing breech-piece will force the cartridge therefrom into the barrel.

When the carrier is dropped so as to allow the cartridge to pass thereon from the magazine, the movement of the cartridge is very quick because of the spring in the magazine, and it is thrown with considerable force against the breech-piece. In order to break this force, which in some cases produces explosion, we arrange a piece, e , in guides, so as to move longitudinally in the breech-piece, and from this a tail-piece, e^1 , extends rearward; and through a cavity in the breech-piece a spiral or other spring, e^2 , is arranged, the tendency of which is to force the piece e forward, as to the position seen in Fig. 2.

A spring-latch, h , is arranged below the piece e , which, when the said piece is forced fully back, as in Fig. 1, will engage a notch in the tail of the said piece, and hold the said piece back and substantially flush with the face of the breech-piece. This latch h extends to the rear of the tail-piece e , and so that when the breech-piece is moved backward, and at the last part of this movement, the projecting end of the latch will strike a projection, h' , on the frame, as seen in Fig. 2, depressing the latch so as to disengage it from and release the piece e , which is then instantly thrown forward by its spring, as seen in Figs. 2 and 4. It then stands in position to form a stop for the cartridge in its movement onto the carrier. When the cartridge strikes this piece e the spring will yield, so that the piece e forms an elastic cushion for the cartridge, which softens the blow and renders explosion impossible—first, because the blow cannot be sufficient to produce explosion; and, second, if a center-fire cartridge, it is impossible for the primer to meet any obstruction.

The piece e , moving forward in advance of the breech-piece, carries the cartridge into the barrel in advance of the breech-piece, (unless the resistance be greater than the force of its spring, which is very rarely the case;) then, as the breech-piece comes up against the head

of the cartridge, the piece *e* passes into the breech-piece until it is again caught by the latch *h*.

This piece *e* serves also as an ejector in the following manner: The spring-extractor *n* on the top of the breech-piece engages the flange of the cartridge, so that when the breech-piece is drawn back the same movement will draw back and hold the cartridge or cartridge-shell, in the usual manner, until it reaches the point where the latch *h* releases the piece *e*, which then springs suddenly forward against the lower edge of the head of the shell, turning the forward end up, so that the head may escape from the support below, and be thereby forcibly ejected from the arm. Thus the piece *e* performs a double office of buffer to receive the cartridge, and ejector to throw it from the arm.

As an aid to guide or center the cartridge in its passage from the carrier upward into the barrel, the piece *e* is made with a projecting finger, *e'*, upon each side, as seen in Figs. 4 and 5, between which the cartridge passes, and which serves to hold it in its proper relative position to the breech-piece in the barrel.

In the usual construction of this class of arms the firing-pin is arranged longitudinally through the center of the breech-piece, extending to the rear, and so as to bear directly against the hammer, so that unless mechanism be applied to retract and hold the firing-pin away from possible contact with the primer until completely closed an accidental discharge of the hammer is liable to produce explosion. To protect the arm against such accidents the spindle *G*, which extends from the breech-piece backward and serves as the means for self-cocking the hammer, is arranged near the top or above the axial line of the breech-piece. The breech-piece is provided with a spring firing pin, *g*, of usual construction, at its forward end, so as to strike the center of the head of the cartridge, and inclined backward and upward.

On the upper side of the spindle *G* is a groove, in which is placed a longitudinal slide, *i*, retained in its position by any suitable holding device, (here represented as by a finger, *l*, extending through and below the spindle, as seen in Fig. 1, but so as to allow free horizontal movement of the slide *i*.) This slide extends forward, so as to strike the firing-pin, as also seen in Fig. 1, and when the breech-piece is closed, as seen in Fig. 1, the hammer thrown down, the slide *i* will be forced forward substantially flush with the rear end of the spindle *G*, and the firing-pin correspondingly forced forward; but as the breech is opened the spindle *G* strikes the face of the hammer below the point where it bears on the slide *i*, and as it forces the hammer backward the angle between the two increases the distance between the end of the slide and the face of the hammer; consequently the face of the hammer cannot strike the slide *i*, so as to affect the firing-pin, until the breech is sub-

stantially closed. Because of this arrangement of the slide *i* and firing-pin relatively to the hammer the usual mechanical retreat of the firing-pin is avoided. The slide *i* may be extended, so as in itself to form the firing-pin.

It is important to prevent the possible discharge of the hammer until the breech-piece is fully closed and locked. To do this effectually a lever, *L*, is hung upon the same pivot as the trigger, one arm extending forward, so as to lie in the path of the downward projection, *d*, from the carrier. The other arm, *L'*, extends to the rear, and there rests upon a cam, *r*. A spring, *L''*, bears upon the lever *L*, tending to throw the forward end upward. As the lever approaches its extreme rear movement and turns the carrier downward, the projection *d* strikes the top of the lever *L* and turns it downward, as indicated in Fig. 3. The opposite end of the lever *L*, or arm *L'*, is made hook shape, and extends below the nose of the cam *r*, and the movement of the lever *L* described raises the rear end and turns the cam into the position seen in Fig. 3. Then as soon as the projection *d* of the carrier is removed from the lever *L* the spring returns the lever *L*, the rear arm striking the cam *r*, and turns it forward into the position indicated in broken lines, Fig. 3, which allows the rear arm of the lever to descend below the position which it occupied when resting on the cam, as in Figs. 1 and 2, and so that the projection *r'* forward of the pivot will strike into a notch on the hammer, so as to prevent the discharge of the hammer so long as the lever *L* occupies that position.

The cam *r* extends below the frame, presenting a cam-shaped tail, *s*, which is struck by a projection, *s'*, on the lever *D'* just as it is finishing its closing movement, which turns the cam *r* backward from the position seen in broken lines, Fig. 3, to that seen in Fig. 1, raising the rear end of the lever, consequently dropping the forward end, and so as to free the hammer. Hence after the carrier has received the cartridge from the magazine, or is placed in a position so to do, the hammer cannot be discharged until the breech-piece is fully closed and secured.

The lever *L* also serves as a lock to prevent the carrier *F* from being moved down, after having received and presented a cartridge to the barrel, until a full operation for discharge and retraction of the cartridge shall have been made. This is done by the forward arm of the lever *L* rising in rear of the projection *d* on the carrier, as seen in broken lines, Fig. 3, to make the engagement with the hammer before described, and this is done only when the carrier is fully up, so that the carrier having received and raised one cartridge, and that partly inserted into the barrel, the movement of the lever *D'* cannot be reversed, so as to drop the carrier to the position to receive a second cartridge, and thereby clog the arm.

In order to conveniently construct the breech-piece and its spindle *G*, and introduce the fir-

ing-pin and its slide, the spindle G is made separate or detachable from the breech-piece proper, and is made so as to extend a short distance into the breech-piece, and is connected thereto by means of an extracting-hook, *n*. The hook is constructed with transverse projections at its rear end, *n*¹, to fit a corresponding recess in the top of the spindle G, as seen in Fig. 5. Forward of this, and on the top of the hook, is a cavity, *n*². The breech-piece is constructed with a projection, *d*², on its upper side, through which the extractor extends, as seen in Figs. 1 and 6; and through this projection *d*² a screw, *d*³, is set into the cavity *n*² in the top of the extractor. Thus the screw holds the extractor and the breech-piece together, and engagement *n*¹, between the extractor and the spindle G, holds the spindle in connection with the breech-piece.

In case a sliding cover, P, is used to close the opening in the top of the frame, it is secured to the breech-piece, and so as to move with it, by the same screw, *d*³, which holds the extractor, breech-piece, and spindle.

Parts of this invention are applicable to breech-loading arms which are not provided with a magazine.

We claim—

1. In a breech-loading fire-arm, the combination of a longitudinally-moving breech-piece, the piece *e* arranged near the lower side of the breech-piece, and so as to slide therein, with spring and latch, arranged to operate substantially as described.

2. In a breech-loading fire-arm, the combination of a longitudinally-moving breech-piece,

the piece *e* arranged near the lower side of the breech-piece, and so as to slide therein, with spring and latch, arranged to operate the said piece, and fingers *e*⁴ on the said piece, to serve as guides for the support of the cartridge, substantially as described.

3. In a breech-loading fire-arm, the combination of the longitudinally-moving breech-piece, the spindle G, extractor-hook *n*, the said hook constructed to interlock with the said spindle, and with a cavity to receive the screw which secures the hook to the breech-piece, and so as to serve as the connection between the spindle and the breech-piece, substantially as described.

4. The combination, in a breech-loading fire-arm, of the longitudinally-moving breech-piece, the spindle G, extractor-hook *n*, sliding cover P, and the screw *d*³, the said extractor and screw together serving as the means for securing the parts together, substantially as described.

5. The combination, in a breech-loading fire-arm, of a longitudinally-moving breech-piece, a hammer pivoted in rear of said breech-piece, a carrier below the breech-piece, and hinged at the rear, the lever L, hinged below the hammer, and the cam *r*, with its tail *s*, extending downward, and a projection or bearing, *s*¹, on the operating-lever, all substantially as and for the purpose described.

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