

(No Model.)

C. J. EHBETS.  
MAGAZINE FIRE ARM.

No. 318,711.

Patented May 26, 1885.

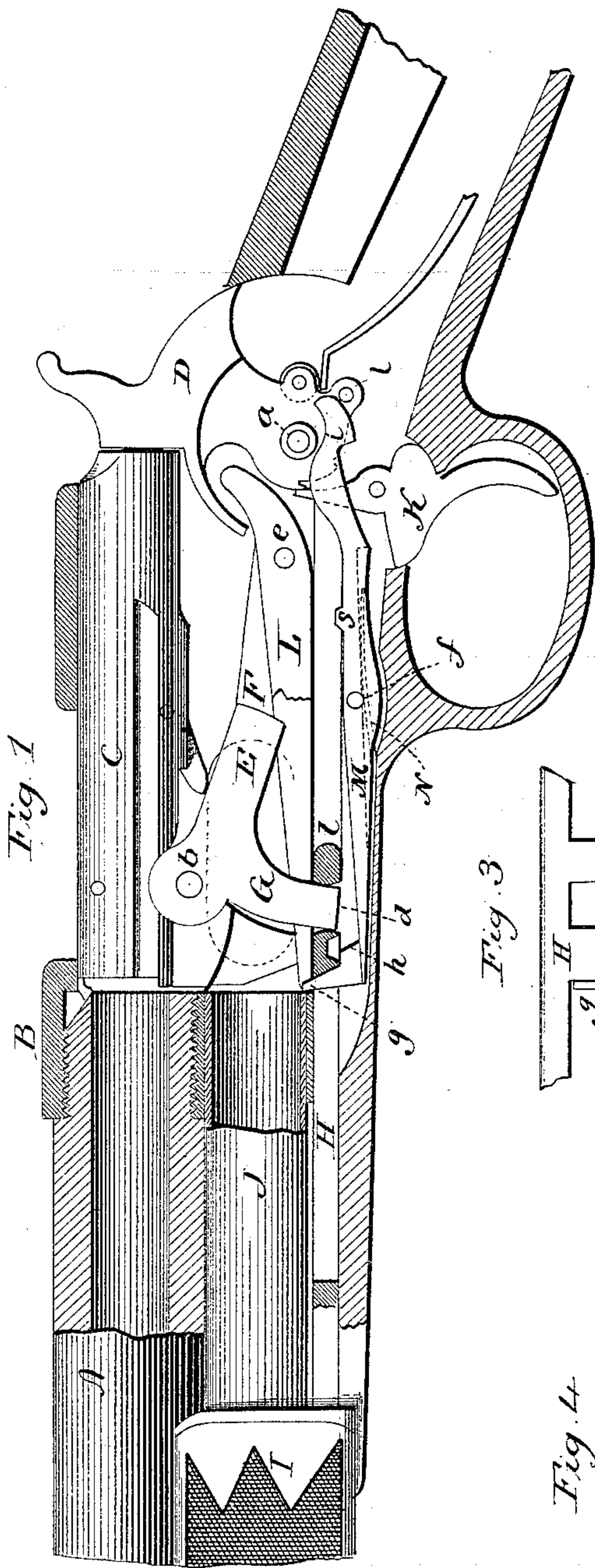


Fig. 2

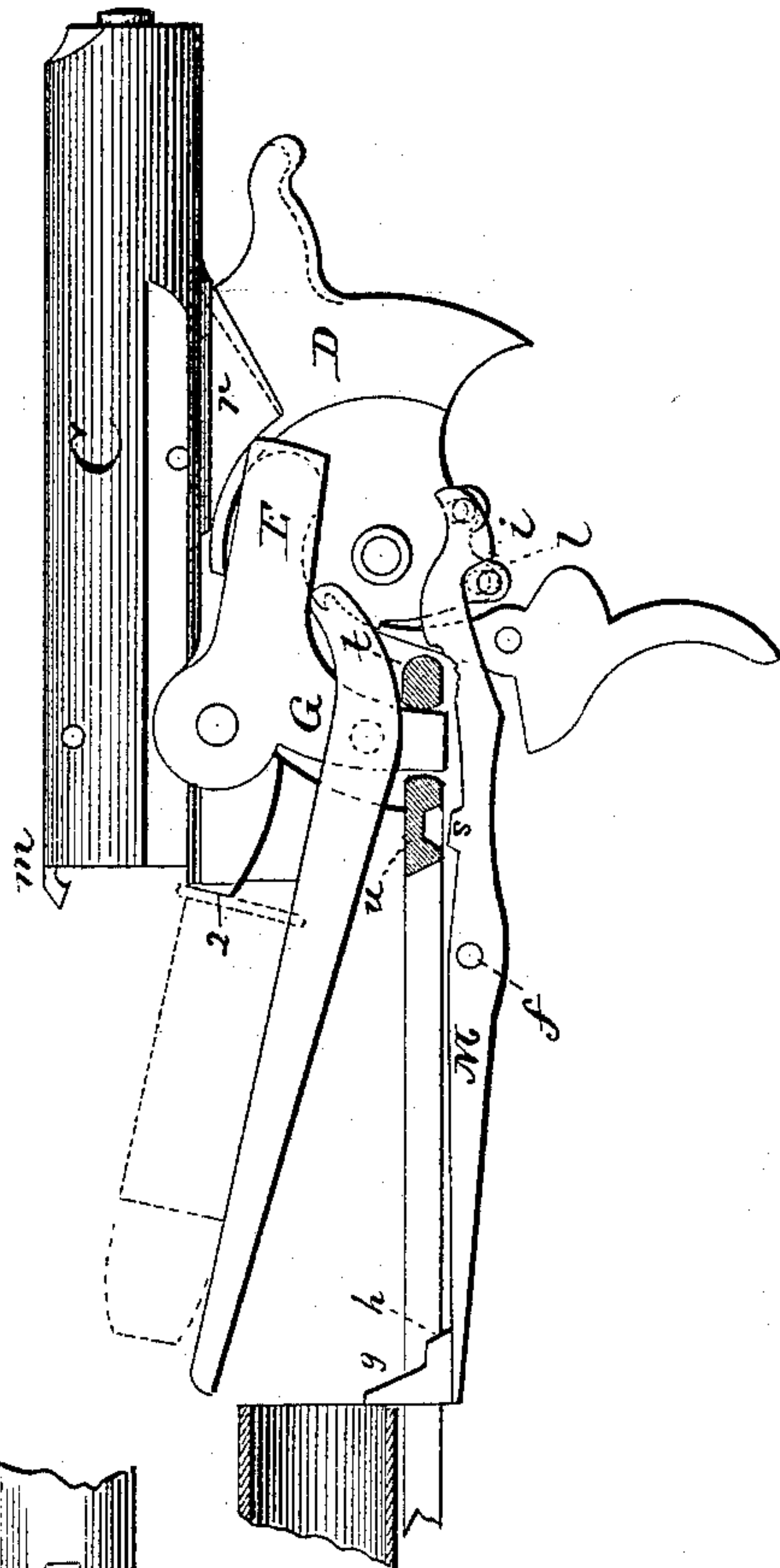


Fig. 3

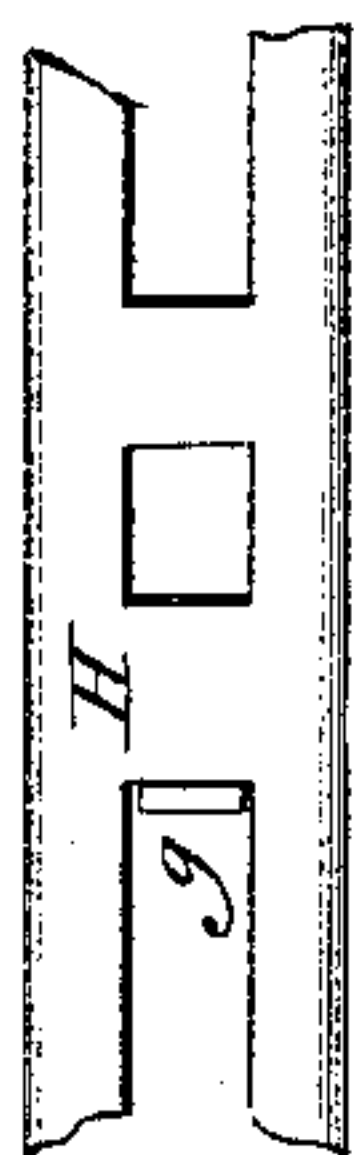


Fig. 5



Fig. 4

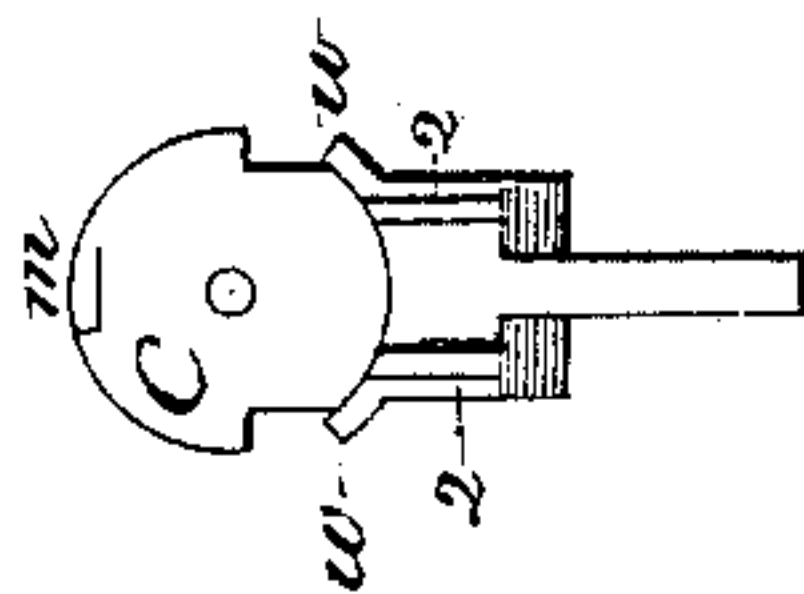
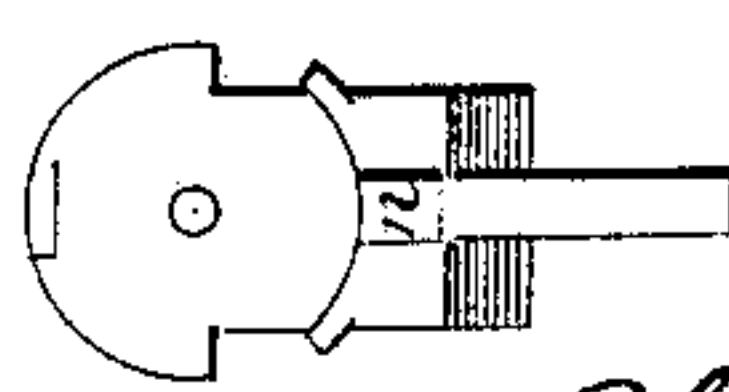


Fig. 6



Fig. 7



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# UNITED STATES PATENT OFFICE.

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ENT FIRE ARMS MANUFACTURING COMPANY, OF SAME PLACE.

## MAGAZINE FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 318,711, dated May 26, 1885.

Application filed March 23, 1885. (No model.)

*To all whom it may concern:*

Be it known that I, CARL J. EHBETS, of Hartford, in the county of Hartford and State of Connecticut, have invented a new Improvement in Magazine Fire-Arms; and I 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 showing the operative parts of the arm in the normal condition; Fig. 2, the same view showing the parts as in the open-breech position; Fig. 3, a top view of the rear portion of the slide H; Fig. 4, a front face of the breech-piece; Fig. 5, a top view of the breech-piece at the front end; Fig. 6, a top view, and Fig. 7, a front view, of the front face of the breech-piece as heretofore constructed.

This invention relates to an improvement in that class of magazine fire-arms in which the breech-piece is arranged to be moved longitudinally back and forth in line with the barrel, and in which the breech-piece is so moved through a handle arranged beneath the barrel, and so that by a longitudinal movement of the handle in one direction the breech-piece is opened and the mechanism of the arm operated accordingly, and in the opposite direction reversed, and is an improvement upon the invention for which Letters Patent No. 285,020 were granted to W. H. Elliot, September 18, 1883.

Before proceeding to particularly define my invention, I will briefly describe the arm upon which it is an improvement.

A represents the barrel, which is attached to the forward end of the frame B. In line with the barrel is the breech-piece C, adapted to move longitudinally toward or from the rear open end of the barrel.

D is the hammer, hung upon a pivot, *a*, and so as to abut against the rear end of the breech-piece. Hinged to the under side of the breech-piece, and near its forward end upon a pivot, *b*, is the brace E.

In the frame at the rear of the brace is a shoulder, F, against which the brace abuts when the breech-piece is in its closed position.

From the brace an arm, G, extends downward into an opening, *d*, in a slide, H, which extends forward through the frame into connection with a handle, I, beneath the barrel, and which surrounds the magazine J, and so that in the first part of the rear movement of the handle I the brace is thrown up from its shoulder, and then in the continued movement of the handle the breech-piece is thrown to the rear. In such rear movement of the breech-piece the hammer is thrown to its full-cocked position. Then the rear portion of the breech-piece passes over the nose of the hammer. The hammer is held at full-cock by the trigger K.

L is the carrier, hung upon a pivot, *e*, and so that as the breech-piece approaches its extreme rear position the brace E strikes an arm on the carrier in rear of the pivot and raises the carrier, as indicated in Fig. 2.

Beneath the slide H a lever, M, is hung upon a pivot, *f*. The forward end of the lever turns upward to form a stop, *g*, at the mouth of the magazine, to prevent the rear movement of the column of cartridges except when the stop shall be removed. Beneath the lever M the spring N is arranged, the tendency of which is to turn the lever upon its pivot to throw the stop *g* up into a position in rear of the open end of the magazine. This stop or nose *g* works upward through a slot in the slide H, as seen in Fig. 3, the said slot terminating forward of the opening *d*, in which the arm G works.

Below the nose *g* is an inclined shoulder, *h*, over which the rear end of the slot in the slide H stands when the parts are in their normal condition, as seen in Fig. 1. In this condition the nose *g* stands below the magazine, so as to leave a free passage from the magazine rearward onto the carrier; but immediately after the slide H begins its rear movement in opening the breech-piece the solid portion of the slide passes beyond the shoulder *h*. Then the spring N throws the forward end of the lever M up, taking the nose or stop *g* into a position in rear of the open end of the breech-piece; but before the stop thus rises, the rear cartridge in the magazine will have passed so far onto the carrier as to be free from the operation of the stop *g*; but the stop will stand



in position to catch the head of the next cartridge so soon as it shall be presented. The lever M extends in rear of the pivot, and to a point near the pivot of the hammer, where it is constructed with a hook-like shoulder, *i*, upon its under side. The rear end of the lever is beveled upward, and so that as the hammer comes to the position of full-cock, a pin, *l*, projecting therefrom will pass under the incline and into a position forward of the shoulder *i*, and so that the said shoulder may engage the stud and hold the hammer at full-cock should the trigger be pulled, the spring N serving to permit the movement of the lever for the passage of the stud *i* and to turn the lever into the engaging position. The object of thus engaging the hammer is that a person using the arm may discharge the hammer in the final forward movement of the handle I. The breech-piece is brought to its closed position before the handle I has reached its extreme forward position. Then after such closing of the breech-piece, and in the final movement of the handle, the brace E is brought down to its locked position, and in such final movement of the handle the slide H moves forward over the inclined shoulder *h*, which causes the lever to descend from the position seen in Fig. 2 to that seen in Fig. 1, and in such descent of the forward end of the lever the shoulder *i* is raised from its engagement with the stud of the hammer, and so as to release the hammer and permit it to fly forward for discharge, so that the person working the arm holding the trigger in its pulled position may rapidly move the handle backward to receive a cartridge onto the carrier, which movement brings the hammer to full-cock and into engagement with the lever M. Then in the advance movement after the cartridge has been transferred to the barrel and the breech-piece closed and locked, the lever M is turned to release the hammer, and so long as the trigger is held such back and forth movement of the handle will continue the operation of the arm.

In this construction of arm the magazine is necessarily charged while the breech-piece is open and the hammer at full-cock. In such charging of the magazine the stop *g* serves as a latch to engage each cartridge as they are successively introduced into the magazine to prevent them being thrown backward onto the carrier; but inasmuch as the hammer stands engaged with the rear end of the latch-lever, under the force of the mainspring, a very considerable power is necessary to be applied to force the head of the cartridge into the magazine over the latch, for its rear end must rise to a certain extent, and in so rising the shoulder *i* works upon the pin *l*, where there is a friction under the full force of the mainspring.

The construction of the arm thus far is substantially the same as shown and described in the patent of Elliot, before referred to. The engagement of the hammer with the latch-le-

ver, as I have described, causes a serious difficulty in the manipulation of the Elliot arm.

In this arm the cartridge is ejected by the action of a spring-extractor, *m*, on the top of the breech-piece, bearing upon the upper edge of the flange of the shell, the lower edge of the shell supported on a shoulder on the face of the breech-piece below. For clear ejection it is necessary that the forward end of the shell shall be raised to a considerable extent before the flange leaves the shoulder below. To permit such an extended bearing in the Elliot arm, a central projection, *n*, was made from the front face of the breech-piece, as seen in Figs. 6 and 7, and of the required length to produce the desired result. As the projection must extend to a considerable distance forward of the front face of the breech-piece, and therefore make a corresponding recess in the barrel into the cartridge-chamber, it must be so narrow that the recess in the barrel into which it enters will not materially weaken the support for the cartridge in the chamber. The central projection thus constructed stands in line with the primer of the cartridge on the carrier, and as the carrier rises bringing the cartridge up forward of the breech-piece, the primer must pass the said projection, and for the reason that the face of the primer is somewhat below the face of the cartridge, the projection is liable to catch in the recess in the head of the cartridge and clog the working of the carrier. Again, the front face of the projection was made vertical, or at right angles to the axis of the breech-piece, and so that as it advances against the head of the cartridge which lies in an inclined position, the cartridge works across the upper angle of the projection, and receives its first forward movement from the projection, and which has but a very small bearing against the head of the shell, so small as to materially interfere with the movement of the cartridge.

To overcome these difficulties is the object of my invention, and the invention consists, first, in constructing the breech-piece so as to give a slight overmotion to the hammer beyond the full-cock position, and so as to leave the latch-lever free from engagement with the hammer when the breech-piece is fully opened, but so as to engage the hammer soon after the breech-piece commences its forward movement; and, second, in constructing the breech-piece with a forward projection each side of the center, upon which the head of the cartridge may rest, the face of the said projections inclined downward and forward, as more fully hereinafter described.

To relieve the lever M from the action of the mainspring when the breech-piece is open and the parts are in position for charging the magazine, I construct the breech-piece with a downwardly-projecting rib, *r*, upon its under side, and which rides upon the nose of the hammer as the breech-piece approaches its extreme rear position, and gives the hammer a



movement a little beyond the full-cock position, as indicated in Fig. 2, solid lines showing the hammer in the position produced by such overmotion, broken lines indicating the full-cock position. At the full-cock position, as before stated, the stud *l* on the hammer is in engagement with the shoulder *i* of the lever *M*; but because of the overmotion produced by the downward projection *r* on the breech-piece, the stud is thrown forward of the shoulder, and so as to relieve the shoulder from contact with the stud, thus leaving the lever entirely free from any influence of the hammer or mainspring; but so soon as the breech-piece commences its forward movement, and the downward projection *r* passes from over the nose of the hammer, then the hammer returns to its full-cock position, and into engagement with the shoulder *i* of the lever *M*.

The spring *N* under the lever *M* is relied upon to make engagement between the shoulder *i* of that lever and the hammer, if such engagement is not made—that is, if the nose of the lever is not thrown upward the second cartridge will follow the first so closely as to protrude from the rear end of the magazine, and so that the head will pass in rear of the nose or latch *g*. In such condition, should the carrier be raised, the result would be that the second cartridge would be thrown rearward beneath the carrier, and therefore clog the working of the arm. The liability of such an accident is due principally to the friction between the stud on the hammer and the shoulder *i* on the lever.

To make the rise of the latch end of the lever positive, and before it is possible for the head of the second cartridge to have passed over said latch, I construct the lever *M* with an upward projection, *s*, in rear of the pivot *f*, on which the lever is hung, and so that the rear end, *t*, of the slide *H*, as it approaches its extreme rear movement will strike the forward inclined side of the projection *s*, and riding over the incline will force the rear end downward and the forward end upward, as indicated in Fig. 2; but as the slide reaches its extreme rear movement a notch, *u*, in the under side of the slide comes to a position over the projection *s*, so as to leave the lever *M* free. The positive forcing up of the nose or latch occurs just before the cartridge has passed completely onto the carrier, and so that the tapering point of the bullet leaves sufficient room for such a rise of the latch, and the latch thus forced into its up position before the head of the second cartridge has reached the rear end of the magazine, stands in a position to receive the head of the said second cartridge and prevent the possibility of its passing beyond the latch. The notch or recess *u* in the slide permits the freedom of the latch necessary for charging the magazine—that is, allows free movement of the latch—and the inclined rear face of the notch *u* in the slide positively forces the latch *g* upward on the first forward movement of the slide.

By this construction the difficulty arising from possible clogging of the parts by the untimely rear movement of the second cartridge is avoided.

To overcome the difficulty before mentioned in regard to the central projection on the front face of the breech-piece, I construct the breech-piece at its front face with the usual shoulder, *w*, which is in the form of a short flange, and at each side of the center I construct a forward projection, 2. These should be distant from each other about the diameter of the primer, and so that as they strike the cartridge they will escape possible contact with the primer or its recess, and in order that the projections may take a bearing of considerable extent upon the face of the head of the cartridge, and make that bearing at a point considerably below the center of the head, the front face of the projections 2 is inclined downward and forward, as seen in Fig. 2, into substantially the plane of the head of the cartridge as it is first presented to the said projections, and as indicated in Fig. 2. This inclined surface gives a very considerable extent of bearing upon the face of the head of the cartridge, and the projections being one at each side, the difficulties experienced with the central projection, *n*, as heretofore constructed are avoided. It will be understood that the rear end of the barrel is recessed to receive the said projections in the usual manner.

I claim—

1. In a magazine fire-arm, the combination of a longitudinally-reciprocating breech-piece, a longitudinally-sliding handle beneath the barrel, provided with a slide extending therefrom rearward into connection with said breech-piece, and by which the said longitudinal movement is imparted to said breech-piece, a hammer hung below the breech-piece, its nose in the path of said moving breech-piece, and whereby in the rear movement of the breech-piece the hammer will be turned rearward to its full-cock position, the said breech-piece constructed upon its under side with a downward projection, *r*, forward of its rear end, and so as to engage said hammer and turn it beyond its extreme cocked position, the lever *M* hung below said slide *H*, its forward end constructed to form a latch at the rear end of the magazine, its rear end constructed with a shoulder, *i*, and the hammer provided with a corresponding stud, *l*, the said lever constructed with an incline, *h*, and the slide *H* with a corresponding bearing, and through which shoulder and bearing the said lever will be turned as the handle approaches its extreme forward position, substantially as and for the purpose described.

2. In a magazine fire-arm, the combination of the longitudinally-reciprocating breech-piece, a longitudinally-sliding handle beneath the barrel provided with a slide, *H*, extending rearward into engagement with said breech-piece, and whereby the said reciprocating movement is imparted to said breech-



piece, a hammer hung below said breech-piece, with its nose in the path of said breech-piece, and whereby in the rear movement of said breech-piece the hammer is thrown to its full-cock position, the lever M hung beneath said slide, one arm extending rearward, and constructed with a shoulder, *i*, adapted to engage a corresponding stud, *l*, on the hammer below its pivot, the forward arm of said lever constructed to form a latch at the rear end of the magazine, and also with a shoulder, *h*, near its forward end, the lever also constructed with an upward projection, *s*, in rear of its pivot, the said slide H constructed with a bearing corresponding to said shoulder *h*, whereby said lever will be turned as the handle reaches its extreme forward position, and the hammer thereby released, said slide also constructed with a recess, *u*, corresponding to the projection *s* on said lever, substantially as and for the purpose described.

3. In a magazine fire-arm, the combination

therewith of the longitudinally-reciprocating breech-piece, constructed with projections 2 2 at its forward end below the abutting face of the breech-piece, one of said projections being upon one side of the center and the other upon the opposite side, substantially as described.

4. In a magazine fire-arm, the combination therewith of the longitudinally-reciprocating breech-piece constructed with projections 2 2 at its forward end below the abutting face of the breech-piece, one of said projections being upon one side of the center and the other upon the opposite side, the front face of each of said projections inclined downward and forward, substantially as and for the purpose described.

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