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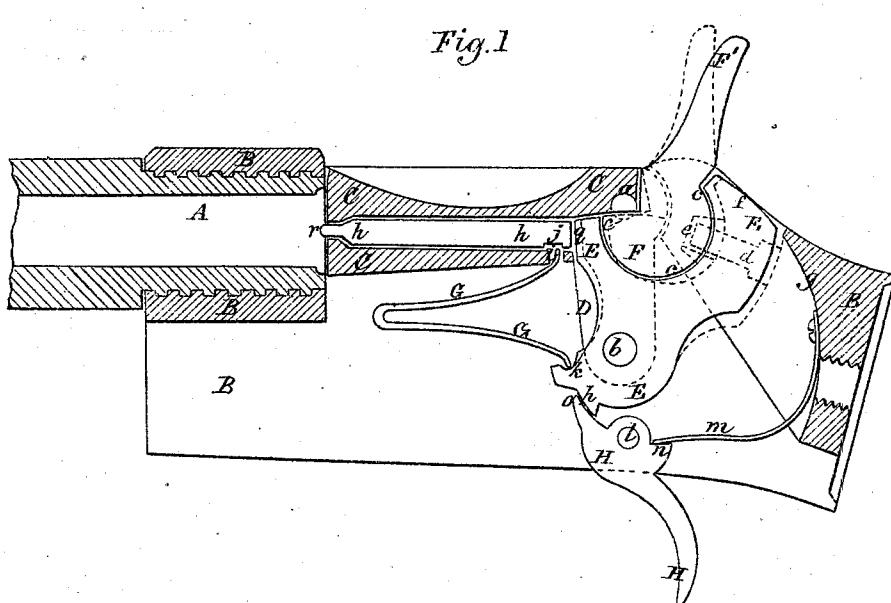
JAMES LEE.

Improvement in Breech-loading Fire-arms.

No. 122,772.

Patented Jan. 16, 1872.

Fig. 1



UNITED STATES PATENT OFFICE.

JAMES LEE, OF MILWAUKEE, WISCONSIN.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 122,772, dated January 16, 1872.

To all whom it may concern:

Be it known that I, JAMES LEE, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a new and useful Improvement in Breech-Loading Fire-Arms; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings making part of this specification and to the letters of reference marked thereon, in which—

Figure 1 is a side view of the breech mechanism of the arm with half of the frame, barrel, and breech removed. Fig. 2 is a similar view, showing the position of the various parts when loading.

Similar letters of reference, where they occur in the separate figures, denote like parts of the arm in both of the drawings.

My invention relates, first, to the attachment of the hammer to the breech-block, said breech-block being hinged at its rear end to the frame of the arm or gun. My invention further relates to the combination of the mainspring, hammer, and breech-block, said mainspring, in addition to its duty as a mainspring, also serving to keep the hammer and breech-block in their relative working positions, and to keep the firing-pin in the breech-block. My invention further relates to the construction and operation of a two-part hammer with an articulated joint between them, and secured together by a pin or screw, so that one part may have a slight movement independent of the other part, and so that the first of the forward movement of the upper part shall impart a backward movement to the under part to remove the hammer from the firing-pin. My invention further relates to the combination of the breech-block, hammer, trigger, and trigger-spring, so that the nose of the trigger shall, by pressing against the hammer, hold up the breech-block, whether the hammer be down or at the full-cock.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

A represents the barrel and B the frame of a breech-loading fire-arm. C is a breech-block, hinged at its rear end, at about the point *a*, to the frame B of the arm. From both of the rear sides of the breech-block C project downward lugs D, to which is hinged, as at *b*, the hammer, composed of two parts, E F, with an ar-

ticulated joint, *c*, between them, E being the under and F the upper of said two parts, said two parts being connected by a screw or pin, *d*, (in dotted lines in Fig. 1,) projecting through the part E and into a slightly-elongated opening, *e*, in the part F. The rounded portion *f* of the hammer, when said hammer is drawn back to the full-cock, moves against or in close proximity to the rounded cut-away portion *g* under the frame. In the breech-block *c* is arranged the firing-pin *h*, and to prevent said firing-pin from dropping out or getting out of place the bent end *i* of the mainspring *G* passes through the lower portion of the breech-block and projects into a recess at *j* in the firing-pin, and thus keeps it in the breech-block. The other or lower end of the mainspring *G* rests in a notch or recess, *k*, in the under portion E of the hammer, and thus, by bearing one end against the breech-block and the other end against the hammer, it keeps the two, though pivoted together at *b*, in their proper positions. The trigger H is pivoted to the frame B at *l*, and has a trigger-spring, *m*, bearing against it at *n* to hold its nose *o* up to or against (as the case may be) the projection *p* on the under side of the portion E of the hammer. When the breech-block is closed, as in Fig. 1, it is held up in its closed position by the action of the trigger and spring *m* bearing against the projection *p*, and this, too, whether the hammer be down or against the breech-block or at the full-cock. When the hammer flies by the pulling of the trigger its face *q* strikes the rear of the firing-pin, and, driving it forward, it in turn strikes and explodes the cartridge. The arm in this position—viz., after being fired, and the hammer bearing against the firing-pin and breech-block—could not be opened up for recharging, as the breech-block would be locked by the projecting end *r* of the firing-pin. To obviate this is one of the important features of my invention. The breech-block is swung downward to open up the bore of the arm, and it is moved down by pressing against the rear portion of the thumb-piece F' of the hammer. This pressing forward of the thumb-piece, as shown by the dotted lines in Fig. 1, moves the portion F of the hammer upon its articulated joint *c* until the pin *d* catches it, and then, by continuing the pressure upon the thumb-piece, the under portion E of the hammer is moved backward, removing its face *q* from the firing-

pin, which releases the latter, so that when its point comes against the rear of the barrel, bore, or frame, said firing-pin will slip back into the breech-block and allow the latter to drop; or the firing-pin, after the face *q* of the hammer is removed from it by pressing forward the thumb-piece, may be retracted by a spring or otherwise; but if not held out positively it will freely slip back of itself when it comes against any intervening piece or part of the arm. It will be perceived that the breech-block and hammer swing bodily together, being united and moving on a common center of motion; but the mainspring *G*, which is supported, one end on the breech-block and the other end on the hammer, does not move bodily with the descent of the hammer, and is not liable to be thrown out of its bearings, as it is slightly compressed in its bearings. The breech-block, hammer, and mainspring can all be removed together without disturbing their relative positions by taking out the pin that the breech-block swings on, which, for cleaning or repairs, is quite important.

The operation of the arm is as follows: First, by pressing on or against the back of the thumb-piece *F'* of the hammer (which has a slight movement forward previous to the opening of the breech) it moves the under part of the hammer *E* rearward and draws the face *q* of the hammer away from the firing-pin *h*, which allows the breech-block *c* to swing open with ease by continuing the pressure on the back of the thumb-piece *F'*. To close the breech pull or draw on the thumb-piece of the hammer, as in the act of cocking, which will first raise the breech to a closed position, and by continuing that motion will cock the arm.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the breech-block and hammer, as herein shown and described, the latter pivoted to the former, and both moving upon a common center of motion in or on the frame, so that the breech may be opened and closed by pushing and pulling upon the thumb-piece of the hammer, substantially as described.

2. I also claim the combination, herein shown and described, of the mainspring, hammer, breech-block, and firing-pin, whereby said mainspring, in addition to its other duties, retains the firing-pin in the breech-block, substantially as described.

3. I also claim the hammer, made of two parts, substantially as described, with an articulated joint between them, and secured together by a pin or screw, so that one part may have a slight movement independent of the other part, and so that the first of the forward movement of the upper part shall impart a rearward movement of the under part to remove the hammer from the firing-pin, as and for the purpose described.

4. I also claim the combination of the breech-block, hammer, trigger, and trigger-spring, when made of the form and arranged as described, whereby the nose of the trigger is pressed up against the hammer to hold the breech up in its closed position, whether the hammer be down or at the full-cock, substantially as described.

JAMES LEE.

Witnesses:

GEORGE LEE,
SAM. M. DIXON.

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