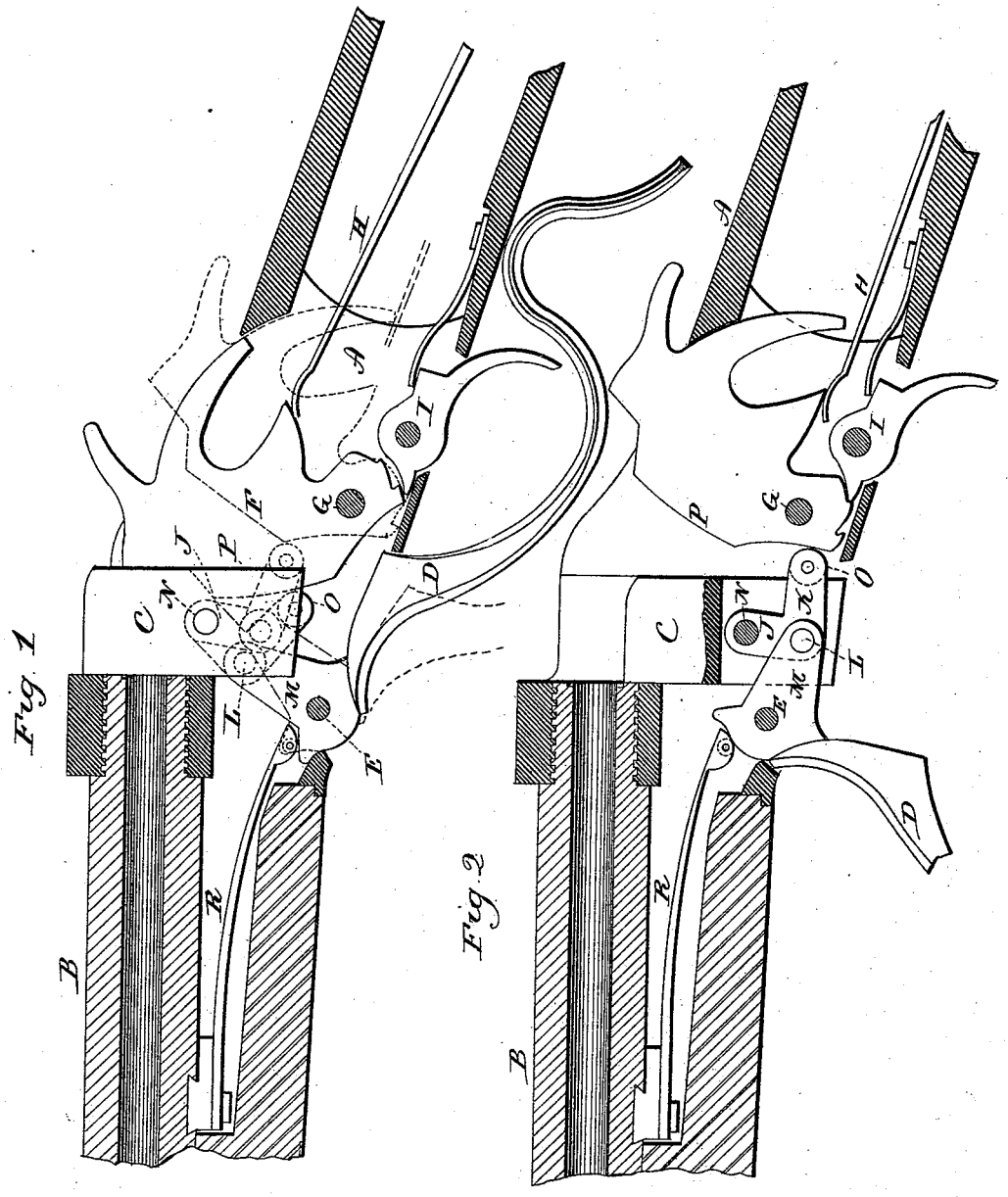
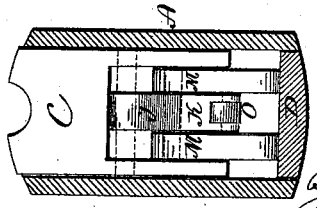
(No Model.)

E. WHITNEY.

BREECH LOADING FIRE ARM.

No. 389,036. Patented Sept. 4, 1888.





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ELI WHITNEY, OF NEW HAVEN, CONNECTICUT.

BREECH-LOADING FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 389,036, dated September 4, 1888.

Application filed July 2, 1888. Serial No. 278,815. (No model.)

To all whom it may concern:

Be it known that I, ELI WHITNEY, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Breech-Loading 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 longitudinal sectional side view showing the parts in the closed or normal position, broken lines indicating the position of the parts when the hammer reaches the full-cocked position; Fig. 2, the same section showing the parts with the breech-piece wide open; Fig. 3, a transverse section through the receiver just in rear of the breech-piece, looking forward.

This invention relates to an improvement in that class of breech-loading fire-arms in which the breech-block is arranged in the receiver at the rear of the barrel and so as to move in a vertical plane at substantially right angles to the axis of the barrel, the breech-piece being so moved by means of a lever hung beneath the receiver, and which usually also forms the trigger-guard, the object of the invention being a simple and cheap construction by which in the act of opening the breech-piece the hammer may be thrown to the cocked position; and it consists in combining with the vertically-reciprocating breech-piece the lever hung beneath the barrel by which the breech-piece is operated, a bell-crank lever between the breech-piece and said operating-lever, one arm of said bell-crank lever forming a link-like connection between an arm of said operating-lever and the said breech-piece, the other arm of the bell-crank lever projecting rearward and adapted to act against a corresponding face of the hammer above its pivot, whereby in the first part of the opening movement of the operating-lever the hammer is thrown to the cocked position, as more fully hereinafter described.

A represents the frame or receiver, to the forward end of which the barrel B is attached, which barrel opens into the receiver at the rear, in the usual manner for breech-loading fire-arms.

C is the breech-piece, arranged in the receiver in rear of the barrel and guided vertically, so as to receive a vertical reciprocating movement to open or close the breech end of the barrel, this being a common arrangement of the breech-piece.

D represents the actuating-lever. It is hung upon a pivot, E, in the receiver forward of and below the breech-piece, and extends therefrom rearward to form the trigger-guard, which lever will swing in a vertical plane forward and downward in opening and rearward and upward in closing, as from the position in Fig. 1 to that seen in Fig. 2.

F represents the hammer, which is hung upon a pivot, G, below and in rear of the breech-piece, and adapted to strike the firing-pin in the breech-piece to communicate its blow to the cartridge in the barrel, such striking force being imparted by the mainspring H, in the usual manner.

I represents the trigger, arranged to engage the hammer in the usual manner.

J K represent the two arms of a bell-crank or substantially right-angular lever. The lever is hung at its angle by a pivot, L, to an arm, M, which extends up from the hub of the operating-lever. The one arm, J, is hung by a pivot, N, in the breech-piece above the pivot L, between the said bell-crank lever and the arm M of the operating-lever, and thereby forms a link-like connection between the operating-lever and the breech-piece. The other arm, K, extends rearward from the pivot L toward the hammer, its rear end being preferably provided with an anti-friction roller, O. The hammer is constructed or provided with a face, P, in the plane of the end of the arm K of the bell-crank lever, but above the pivot of the hammer and so that that end of the arm K may work against the said face P of the hammer. In the normal or closed position the bell-crank lever stands so that the rear end of the arm K will permit the hammer to reach its extreme forward or striking position, as seen in Fig. 1. Now, if the operating-lever be turned downward and forward, as indicated in broken lines, Fig. 1, such movement will impart a rearward movement to the arm K against the face P of the hammer, and thus bearing against that face above the pivot of the hammer, will cause a corresponding

rearward movement of the hammer, as also indicated in broken lines, and until the hammer shall reach its cocked position, where it is caught by the trigger, as clearly indicated in Fig. 1. At this time, owing to the link-like connection between the operating-lever and the breech-piece, but a very slight downward movement has been imparted to the breech-piece, and such only as that indicated in broken lines, Fig. 1; but after the hammer has thus been brought to the cocked position a continued movement of the operating-lever to the position seen in Fig. 2 draws the breech-block down to the wide-open position. During this last part of the movement the arm K works free from the hammer, as clearly seen in Fig. 2. Then on the return of the operating-lever the bell-crank lever operates only as a link-connection between the operating-lever and the breech-piece, and the breech-piece is brought to its closed position, as seen in Fig. 1, and, arrived at that position, the arm K is advanced so far forward and to its normal position that when the hammer is released its path is free, so that it may advance and impart its blow.

Preferably the arm M of the operating-lever is bifurcated, as represented in Fig. 3, the bell-crank lever J K being hung between the two parts.

A spring, R, is arranged beneath the barrel forward of the operating-lever, which operates upon the lever to surely return it to and hold it in its closed position, and also operates in the wide-open position to impart an accelerated motion to the lever as it approaches its wide-open position to facilitate the ejection of the cartridge. This is a common arrangement in connection with the operating-lever and the ejector. The ejector is not shown, that constituting no important part of my invention.

By my invention I have produced a very simple device by which the hammer may be thrown to the cocked position under the opening movement of the breech-piece and without increasing the number of parts of which the arm is composed or practically adding to the cost of manufacture. The advantages of a self-cocking breech-loading arm over one which is not self-cocking are too well known to necessitate setting forth in this specification.

I claim—

In a breech-loading fire-arm in which the breech-block is arranged in the receiver to reciprocate vertically in opening and closing, the combination therewith of an operating-lever hung in the receiver below the breech-piece and so as to swing in a plane parallel with the path of movement of the breech-piece, the said lever constructed with an arm extending from its hub upward toward the breech-piece, a hammer hung in the receiver in rear of the breech-piece and so as to also swing in a plane parallel with the path of movement of the said breech-piece, with a bell-crank lever hung at its angle to the said arm extending from the operating-lever, one arm of said bell-crank lever extending upward and hung upon a pivot in the breech-piece, forming a link-connection between the operating-lever and the breech-piece, the other arm of the said bell-crank lever extending rearward and toward the hammer, the hammer constructed with a face against which the said rearwardly-extending arm of the bell-crank lever may operate, substantially as described, and whereby, under the opening movement of said operating-lever, the said rearwardly-projecting arm of the bell-crank lever will bear upon the face of the hammer above its pivot and impart the cocking movement to the hammer.

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