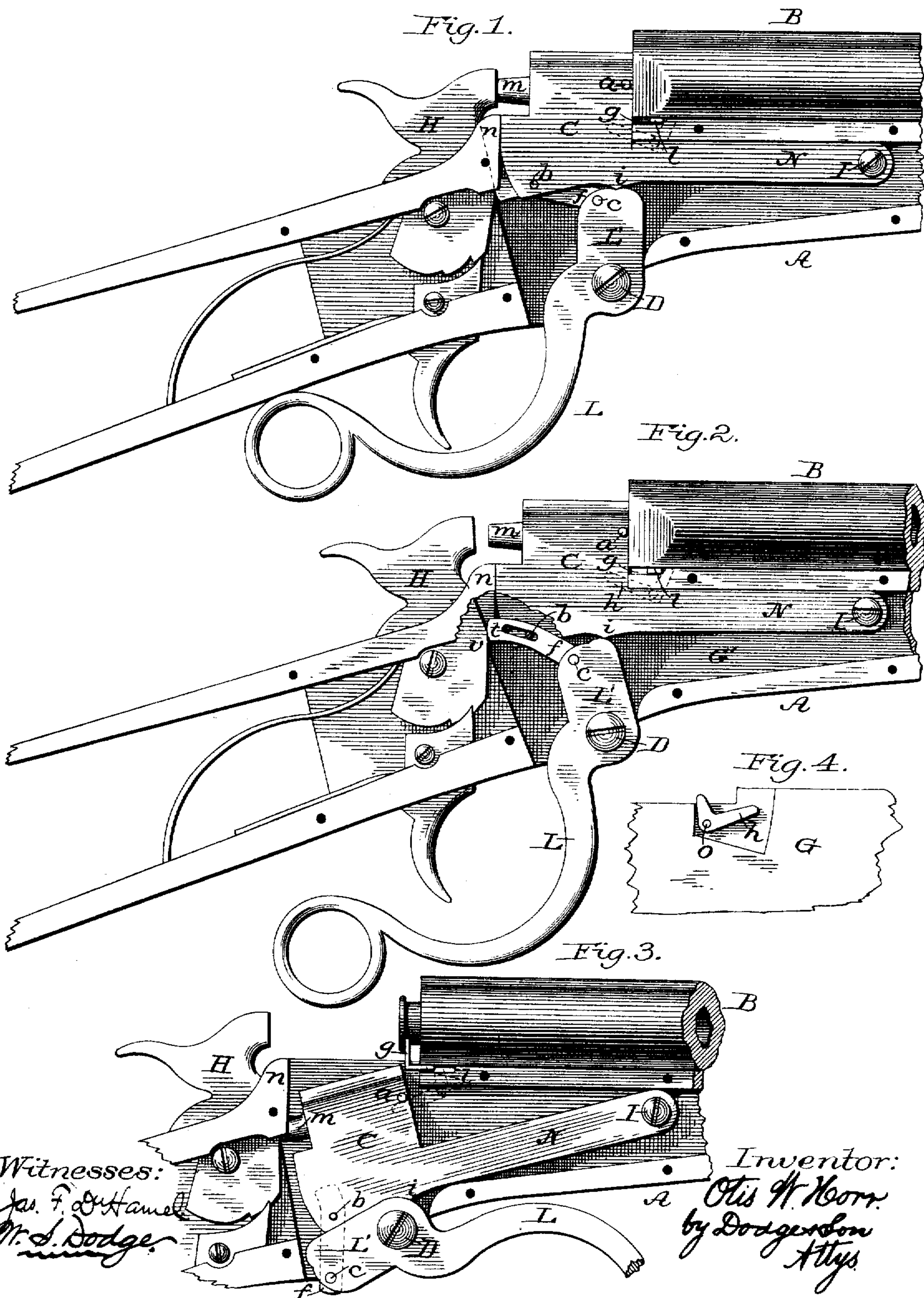


(Model.)

O. W. HARR.
BREECH LOADING GUN.

No. 323,936.

Patented Aug. 11, 1885.



N. PETERS, Photo-Lithographer; Washington, D. C.

UNITED STATES PATENT OFFICE.

OTIS WYMAN HERR, OF CHICOPEE FALLS, MASSACHUSETTS.

BREECH-LOADING GUN.

SPECIFICATION forming part of Letters Patent No. 323,936, dated August 11, 1885.

Application filed May 25, 1885. (Model.)

To all whom it may concern:

Be it known that I, OTIS W. HERR, of Chicopee Falls, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Breech-Loading Guns, of which the following is a specification.

My invention relates to breech-loading guns; and the invention consists in a novel construction and arrangement of the breech mechanism, whereby the movement of the lever forces the hammer back to half-cock, opens the breech, and operates the extractor, all as hereinafter more fully set forth.

Figure 1 is a side elevation, with one side plate of the frame or receiver removed, showing the breech closed. Fig. 2 is a similar view showing the manner of forcing the hammer to the half-cocked position. Fig. 3 is a similar view showing the breech opened and the manner of operating the extractor; and Fig. 4 is an inside face view of a portion of the side plate detached, showing the elbow-lever which operates the extractor.

To construct a gun on my plan I provide a frame or receiver, A, of box form, having two side plates, G and G', one or both of which for convenience may be made detachable, if desired, and to which the barrel B is secured in any suitable manner. I then construct a breech-piece, C, of the form shown, it having a forwardly-extending arm, N, which is pivoted at I to the side plates near their front end, some distance in front of and below the rear end of the barrel, as shown in Figs. 1, 2, and 3, so it shall swing in the arc of a circle of which the pivot I is the center when opened and closed. It carries a spring firing-pin, m, of the usual construction for exploding the primer. The rear end of this breech-piece C is made of such a form that when closed it will bear against the solid abutment n of the frame, as shown in Fig. 1, so that it is held firmly in place, and the pivot I is relieved from the concussion and strain incident to the firing of the charge, it being transmitted through the breech-piece C to the abutment n in rear thereof.

The hammer H with its tumbler are made in a single piece, as shown, the front side of its body being slightly inclined backward from the point v upward, as shown more clearly in

Fig. 2, thus leaving a slight angle or projection at that point.

A hand-lever, L, is pivoted to the lower side of the frame by a screw, D, as shown. Its inner end or arm, L', is made of such a length that when the breech is closed its upper end bears against the under side of the swinging breech-piece and locks or braces it securely in position, as shown in Fig. 1, there being a slight projection, i, on the breech-piece at the point where the arm L' bears against it, and the end of the arm L' being rounded at its corners in front and rear, so as to permit it to swing past the bearing-point in opening and closing the breech. It will be observed by examining Fig. 1 that the bearing-point i of the breech-piece rests slightly in rear of the center of the most elevated portion of the end of arm L' when the breech is closed, the result of which is that any downward pressure of the breech-piece caused by the firing of the gun or otherwise, operates on the rearwardly-inclined or rounded surface of the arm L', and thus tends to hold the lever in its closed position, the arm L' at the same time, as before explained, holding the breech-piece in its closed position, thus rendering the arm safe and dispensing with the use of spring-catches and all similar devices for locking the lever or breech-piece.

The arm L' is connected to the breech-piece C by a link, f, one end of which is pivoted by a pin, e, to the rear side of the arm L', as shown, said link having a slot, t, cut in it a short distance from its opposite end, the link passing through a slot cut in the rear lower side of the breech-piece, and there being a pin, b, passing transversely through the breech-piece and the slot t of link f, as shown more clearly in Fig. 2, the operation of which will be hereinafter described.

A sliding extractor, g, is arranged at the under side of the barrel for withdrawing the cartridge-shell in the usual manner, the stem of this extractor being provided with a lateral projection or arm, l, (shown in Figs. 1, 2, and 3,) which projects out far enough to engage with the upright arm of an elbow-lever, h, pivoted to the inner face of the side plate, G, as shown in Fig. 4, and by the dotted lines in Figs. 1, 2, and 3. Projecting from the side of the breech-piece C is a pin, a, as shown in Figs.

1, 2, and 3, this pin being so located that when the breech-piece has been swung down far enough to uncover the head of the cartridge it will strike the horizontal or rearwardly-projecting arm of the elbow-lever *h*, thereby tipping the elbow-lever on its pivot *o* and causing its other arm to engage against the projection *l* of the extractor *g*, and thus force the extractor backward and starting the shell, as represented in Fig. 3, the shell being then removed by hand or by elevating the muzzle of the arm and letting it drop out.

The parts having been constructed and arranged as above described and as shown in the drawings, operate as follows: in first moving the lever *L* to open the breech, the link *f* is first forced backward, its rear end striking against the front of the hammer a little above its pivot, as shown in Fig. 2, thereby forcing the hammer back far enough to permit the nose of the trigger to engage in the half-cock or safety notch, as shown. Then as the movement of the lever is continued, its upper arm, *L'*, moving back in the arc of a circle, carries the forward end of link *f* with it, causing its rear end to rise and move forward away from the hammer, until finally as the pivot *e* passes back under the pin *b*, the link *f* has its position reversed, as represented in Fig. 3, and when drawn down the length of the slot *l*, so as to bear on the pin *b*, it draws down the breech-piece *C*, the projection *a* on the same being made to strike the elbow-lever *h* during the latter portion of its movement, thereby moving the extractor *g*, as before described. The reverse movement of the lever closes the breech and locks the breech-piece in position, as before described, leaving the hammer at half-cock, after which it can be cocked and fired whenever desired.

By using the swinging breech-piece *C*, and pivoting it at a point in front of the rear end of the barrel, it can be made to swing close up against the end of the barrel, and at the same time be so far from the end when opened that as it is closed it will strike against the end of a cartridge which happens to be projecting, as in Fig. 3, and force it home to its seat in the chamber. This is important, as it occasionally

happens that one gets cartridges a trifle too large to enter the chamber readily, and by this means they can be easily forced in.

It is obvious that the swinging breech and elbow-lever for operating the extractor can be used in a gun independently of the half-cocking feature, and also that this arrangement for forcing the hammer to half-cock may be used with other styles of extractors; but I prefer to use them together, as shown, the whole thus forming a very simple, strong, safe, and efficient arm.

Having thus described my invention, what I claim is —

1. The combination, in a breech-loading gun, of the recessed or box frame *A*, having the barrel *B* secured thereto, the sliding extractor *g*, provided with the lateral projection *l*, the elbow-lever *h*, pivoted to the frame *A*, and the swinging breech-piece *C*, provided with the projection or pin *a*, all constructed and arranged to operate substantially as described.

2. The combination, in a gun, of the breech-piece *C*, pivoted underneath and in front of the rear end of the barrel, as shown, the lever *L*, pivoted to the frame and provided with the extension or arm *L'*, the slotted link *f*, having one end pivoted to the arm *L'* and the other end arranged to work through a slot in the breech-piece, and the hammer *H*, all constructed and arranged to operate substantially as shown and described.

3. The combination, in a fire-arm, of the sliding extractor *g*, the elbow-lever *h*, pivoted to the frame below the extractor and so as to engage therewith, the swinging breech-piece *C*, provided with the projection *a*, the lever *L*, pivoted to the frame, the slotted link *f*, and hammer *H*, said link being arranged to connect the lever and breech-piece, and also operate on the hammer to force it back to half-cock as the breech is opened, all being constructed and arranged to operate substantially as shown and described.

OTIS WYMAN HERR.

Witnesses:

GEO. W. HADLEY,
G. A. ORDWAY.