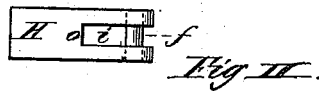
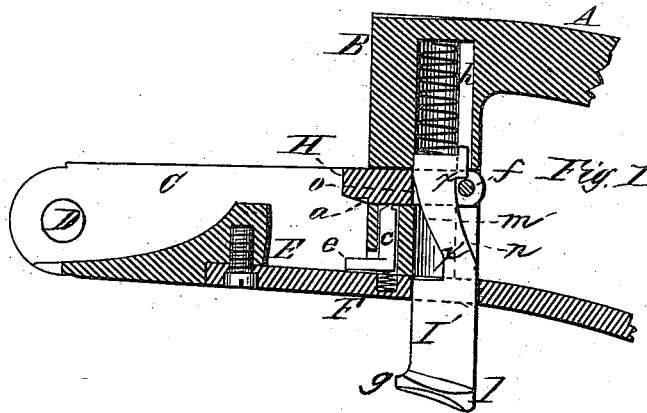


C. A. KING.
BREECH-LOADING FIRE-ARM.

No. 184,716.

Patented Nov. 28, 1876.



Witnesses,

H. V. Bradway
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UNITED STATES PATENT OFFICE.

CHARLES A. KING, OF MERIDEN, CONNECTICUT.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 184,716, dated November 28, 1876; application filed September 9, 1875.

To all whom it may concern:

Be it known that I, CHARLES A. KING, of Meriden, in the State of Connecticut, have invented a new and useful Improvement in Breech-Loading Fire-Arms; and that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, making a part of this specification and description, and to the letters of reference marked thereon.

Fig. I is a longitudinal vertical section through the gun-frame and recoil-block. Fig. II is a plan view of the locking-bolt; and Fig. III is a plan view of the finger-piece or lifter.

My invention relates to that class of breech-loading guns in which the barrel is pivoted to the frame in front of the recoil-block, and in which the rear end of the barrel tilts upward when opened to receive the cartridge; the object of the invention being to have the flat vertical portion of the lifter and the button at its lower end made in one and the same piece, and also to have the front edge of the lifter of an irregular inclined form, whereby the locking-bolt will move quicker at the first part of its inward stroke or movement in locking the barrel down, and yet will furnish the proper resistance to the backward movement of the locking-bolt at the discharge of the arm, or any other jar, to prevent the bolt from moving out.

To this end, my invention consists of a lifter, made nearly flat throughout its entire length, and arranged to move vertically through a correspondingly shaped aperture in the trigger-plate, and through a slot made in the locking-bolt, which slides to and fro longitudinally through the lower part of the recoil-block, to lock and unlock the barrel, the rear edge of the lifter being curved to bear against a pin to draw out the bolt, and being made of an irregular form on its front edge, as hereinafter described, to bear against a shoulder of the locking-bolt, to force the latter in to lock the barrel.

In the drawings, C represents the frame of a double gun; B, the breech or recoil-block; and F the trigger-plate, in which plate is an aperture to admit the flat portion I' of the lifter I, the rear edge of which is made curved at *n*, and a shoulder, *x*, being made at the upper

end. The locking-bolt H may be rectangular in its cross-section, and slides to and fro in a similar-shaped hole made in the lower part of the recoil-block, and is provided with a slot, *i*, in its rear part, a shoulder, *o*, and also a pin, *f*, through its rear end, so that the flat portion I' of the lifter I may slide up and down in the slot in front of the pin *f*. The front edge of the finger-piece or lifter I is made of an irregular form at *m*—that is to say, the upper part for a short distance below the upper edge of the locking-bolt, Fig I, is made straight, and a little inclined from a vertical line; thence to the point *x'* it is made on a curve, increasing its curvature at the lower part, and, with this form, the upper part of the lifter, between the edges *m* and *n*, as it is moved up and down, just fills the space between the pin *f* and the shoulder *o*. In other words, as the lifter is moved up or down, the rear curved edge *n* bears against the pin *f* behind, and the front irregular-formed edge *m* bears against the upper part of the shoulder *o* in the bolt. A recess, *h*, is made in the block B above the lifter, in which a spring, *s*, is placed, which always holds the lifter down, with its shoulder *x* quite near the pin *f*. A small catch, *c*, is placed within a recess made in the recoil-block, said catch having a projection, *e*, on its lower end, protruding forward into the recess E beyond the front face of the recoil-block, the upper end of the catch being made sharp to enter a notch or indent, *a*, made in the lower side of the locking-bolt at its forward end, and a spring is placed beneath the catch to force it upward. The circular button *g*, against which the finger is pressed to force the lifter I upward, is forged or made in one and the same piece with the flat portion I' of the lifter, which heretofore has not been done in this class of guns, the button having been made separate and attached to the flat portion by a screw in order to insert the lifter through the hole in the trigger-plate, the ordinary collar near the upper end of the lifter, upon which the spring *s* had its bearing, preventing its insertion through the trigger-plate from below, and consequently necessitating the removal of the trigger-plate from the gun to get the lifter out. In other words, in assembling the

parts of the gun the button was separated from the lifter, the latter put in place, the trigger-plate then attached, inserting the lifter through the plate from above, and the button attached to the lifter; and, whenever it was desired to remove the lifter for any purpose, the button had to be first detached therefrom.

My construction of the lifter, by cutting off the collar upon each side, and making it of the same general thickness throughout its entire length, entirely obviates the necessity of making the lifter and button separate, and materially decreases the expense of manufacture, and also greatly facilitates the separation of the parts when repairs are required.

The operation of my invention is as follows: When the breech of the barrel is locked down it is unlocked by pressing up against the button *g* with the finger, forcing the lifter *I* upward, and compressing the spring above it. In this movement the rear-curved edge *n* of the lifter bears against the pin *f*, and draws the bolt *H* to the rear, and out of its notch in the rear end of the barrel, until the front end of the bolt is back to the front face of the recoil-block *B*. When this occurs the notch *a*, being just over the sharp upper end of the catch *c*, the latter is impelled upward by the spring beneath it, and enters the notch. The rear end of the barrel may then be tilted up, or does so of itself, by the weight of the forward end, and the cartridge may then be inserted. The rear end of the barrel is then pressed down, and a projection made thereon to fit the recess *E* of the frame strikes down upon the projection *e* of the catch *c*, drawing the latter down and out of the notch *a*. The spring above the lifter *I* quickly depresses the latter, and the irregular form of its front edge at *m*, bearing against the shoulder *o*, forces the bolt *H* forward quickly, and locks the barrel down securely. In this latter operation two important results are attained by the peculiar form of the front edge of the lifter at *m*: First, when the rear end of the barrel strikes down the catch, and releases the bolt *H*, it is particularly desirable that the latter should be forced forward as quickly as possible, in order that the rear end of the barrel may not rebound upward before the bolt catches into its notch in the rear end of the barrel. The greater degree of curvature of the lower part of the edge *m* of the lifter, as it starts downward, accomplishes this result, and gives a quick motion to the forward movement of the bolt—much quicker than if the edge was a

straight incline—until it has caught sufficiently into the notch in the rear end of the barrel; and, as the lifter reaches its lowest position, the upper part of its irregular-formed edge *m*, which is more nearly vertical, impinges against the shoulder *o* of the bolt, and holds the bolt secure in place.

It will be seen, of course, that it is desirable that the bolt *H* should move to and fro a certain distance, and this movement is governed by, and is the same as, the distance which the lower point of the front irregular-formed edge *m* is in rear of its upper point. The amount of this movement would be the same, it is evident, if the edge between these two points was a straight incline; but the forward movement of the bolt *H* would be of the same velocity throughout its entire movement, which would not be desirable, and which is one objection which this invention is designed to overcome; and, when the bolt *H* was in, the front edge *m*, if made a straight incline, being at a greater angle from a true vertical, the resistance to a backward movement of the bolt would not be sufficient, (with a spring above the lifter of the desirable elasticity,) and the result would be that the bolt might be moved back by a jar, or by the explosion, sufficiently to unlock the barrel.

The peculiar irregular form of the front edge *m* in my device entirely obviates this defect, and its operation is always sure and effective.

Having thus described my invention, what I claim as new is—

1. In a breech-loading fire-arm, the combination of the sliding bolt *H* with the lifter *I*, having its front edge *m*, which drives the bolt forward, made of an irregular form, substantially as described, in order to furnish the proper resistance to the backward thrust of the bolt at the explosion, and also to accomplish the desired accelerated throw of the bolt in locking the barrel.

2. In a breech-loading fire-arm, the combination of a locking-bolt to secure the breech of the barrel down in place for discharging the arm, and a lifter for releasing said bolt, made of the same approximate thickness throughout its entire length, and with the button *I* at its lower end made in one and the same piece therewith, substantially as and for the purpose described.

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Witnesses:

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