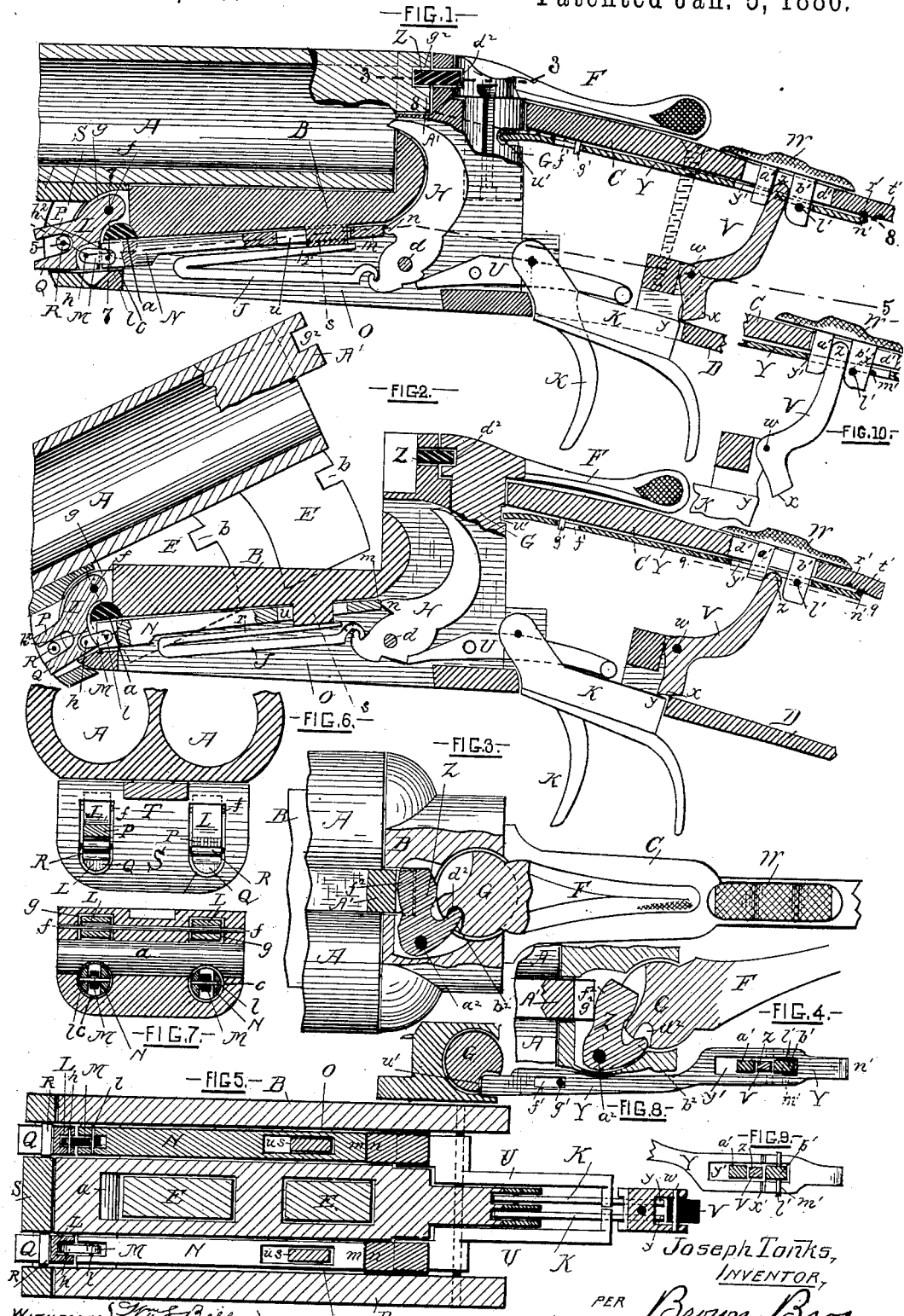


(No Model.)

J. TONKS.
BREACH LOADING FIRE ARM.

No. 333,795.

Patented Jan. 5, 1886.



WITNESSES: *Wm. F. Billings,*
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UNITED STATES PATENT OFFICE.

JOSEPH TONKS, OF MALDEN, MASSACHUSETTS.

BREECH-LOADING FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 333,795, dated January 5, 1886.

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To all whom it may concern:

Be it known that I, JOSEPH TONKS, of Malden, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Breech-Loading Fire-Arms, of which the following is a full, clear, and exact description.

This invention relates to breech-loading fire-arms in which the barrels are pivoted to the breech-block and arranged to be tilted or swung down when desiring to load the gun, and also to that class of fire-arms known as "hammerless" guns, in which the hammer is located inside the breech-block or stock; and the invention consists, first, of mechanism so constructed and arranged, in combination with the hammer of the gun, that the tilting or swinging down of the barrel will cause the hammer to be moved into its cocked position; second, of a locking or safety device for the trigger, whereby it is held from accidental movement and consequent discharge of the gun, if loaded; third, of the locking of the barrels at the rib-extension; and, fourth, of the combination and arrangement of parts hereinafter fully described and shown, reference being had to the accompanying plate of drawings, in which—

Figure 1 is a detail longitudinal vertical section of a double-barrel breech-loading gun, the stock being removed, the section being through one of the barrels, and showing in side view the mechanism for cocking the gun, and also the mechanism for locking or securing the triggers from accidental movement, the barrels being closed and bolted, the hammers uncocked, and the triggers in condition for operation. Fig. 2 is a similar sectional view to Fig. 1, but showing the barrels opened and in position for loading the same, the hammers as cocked, and the triggers secured from accidental movement. Fig. 3 is in detail a part horizontal section and part plan view; and Fig. 4 is a detail view similar to Fig. 3, but with the operating parts in a different position. Fig. 5 is a horizontal section on line 5, Fig. 1. Fig. 6 is a cross-section of the gun-barrels and end view of the cross-head of the fore end. Fig. 7 is a detail section on line 7, Fig. 1. Figs. 8 and 9 detail plan and sectional views, to be hereinafter referred to; Fig. 10, a detail sectional view.

In the drawings, A A represent the barrels of a breech-loading gun, pivoted at *a* to the breech-block B; C, the tang, and D the trigger-plate of the breech-block B, by which the breech-block is secured to the stock in the usual manner, but not shown in the drawings.

E E are lugs attached to the under side of the barrels A, having notches *b b* for the usual bolt of such guns operated by the top snapper, F, through its spindle G.

H is the hammer, pivoted at *d* to the breech-block B; J, its spring, and K K the triggers, all of which are constructed and arranged for operation as usual in breech-loading fire-arms, and needing no more particular description herein.

L is a lever or plate pivoted at *f* to the breech-block so as to swing vertically thereon and in a groove *g*, in a breech-block under the barrel, and to abut by its end *h*² against a horizontal bar, N, to which bar the lever is connected by a link, M, pivoted to said lever at *j h* and to the bar at *l*. This bar N extends backward through an opening, *e*, and opening O in the breech-block, and is arranged to bear, by its end *m*, against a projection, *n*, of the hammer H. The lever L has two arms, P and Q, and in the open slot between them a pin R, of the cross-head S, of the fore end of the gun can freely play. This pin R has a roller upon it to reduce friction and prevent wear of the parts. In opening or swinging down the barrels A on their pivot, as shown in Fig. 2, the lever L is carried down with it by the pin R of the cross-head S bearing against its lower arm, Q, which movement of the plate L pushes the bar N, and, by its abutment on the projection *n* of the hammer, the hammer is moved into its cocked position, all as shown in Fig. 2, more particularly where it (the hammer) is held, as ordinarily by its sear U. The movement of the lever L causes the bar N to cock the gun, and by its link-connection returns the bar N to its normal position for operation again. The lever L is also arranged at the start in opening the gun to act upon the upper part of the end of the bar N, the bearing then being on its shortest fulcrum in order to exert more power at such time to overcome the resistance and friction of the parts. Swinging the barrels up into

their normal or locked position, the pin R of the cross-head S acts on the upper arm, P, of the lever L, carrying with it the lever L, and, through the link M, drawing the bar N back to its normal position, as shown in Fig. 1, for the again cocking of the hammer when desired, and leaving the hammer cocked and free to act in the discharge of the gun without interference of the bar N. In the same opening O, in the breech-block, with and below the bar N, is the mainspring J of the hammer, and to prevent its upper arm, r, bearing on the bar N, and thus interfering more or less with its movements, as above described, a stud, s, projects downward from the upper wall, t, of the opening O, through an elongated slot, u, in the bar N, sufficiently below the bar N for the upper arm, r, of the mainspring J to rest thereon and not touch the bar N, but leave it free to move, as described.

V is a vertical lever arranged to swing on a pivot, w, of a projection of the trigger-plate D and between it and the tang C. One end, x, of this lever is in such a position relatively to the triggers that when moved in the proper direction it will project over and abut against the upper edges, y, of the triggers K, as shown in Fig. 2, and thus hold them against movement, to prevent the premature discharge of the gun, if loaded and the hammers cocked. The upper end, z, of the lever V lies between two arms, a' and b', of a thumb piece or plate, W, on the upper surface of the tang C, the said arms projecting downward through a slot, d', in said tang.

Y is a bar arranged to slide longitudinally on the under side of the tang C, and guided in its movements and from lateral play by a slot, f', near its inner end, u', playing over a pin, g', in the tang, and at its other end by a slot, h', through which the arms a' b' project.

t' is a pin firmly secured to the arm b' of thumb-piece W, and when the bar Y is in its working position it lies in a notch or depression, m', in the under side of the bar Y, and when in such notch the bar, being of a springy nature, is held firmly and against accidental movement. The end n' of the bar Y is bent up, as shown, and is arranged to rest in notches r' and t' in the under side of the tang in the movements of the bar, as hereinafter described. Pushing the bar Y forward through the arms a' b' moves the lever V so as to secure the triggers from movement, and this movement of the bar Y is accomplished by a cam, u', on the spindle G of the top snap-lever working against the end of said bar when the top snap-lever is swung in the direction to unbolt the gun, and by such movement the end x of lever V is swung over the upper edges, y, of the triggers K, in which position the bar and lever remain, being there held by the engaging of the end n' of bar Y in the notch t' of the tang, all as shown more particularly in Fig. 2. To relieve the triggers, press the thumb-piece W toward the top snap-lever by hand, which will force through the arm b' and pin x the

bar Y and lever V back into the position shown in Fig. 1, the end n' of bar Y moving from its notch t' into and then resting in the notch r'. To disconnect the lever V, and prevent it from securing the triggers, as described in the movement of the top snap-lever, push the thumb-piece W still farther forward, or as far as it can go, which will remove the pin t' from the notch m' in the bar Y into a notch, x', in said bar, and carrying with it by the arm b' the upper end of lever V, and thus the other end, x, of the lever will be swung so far out of position as not to have any effect on the triggers, should the bar Y be moved then, in the operation of the lever F, all as shown in Fig. 10.

Z is a horizontal plate or bolt adapted to swing horizontally on a pivot at a² in the upper part of the breech-block, and having an arm, b², which engages in a notch, d², in the upper part of the spindle G of the top snap-lever. Turning the top snap-lever in the direction to bolt the gun, the plate Z will move or swivel on its pivot, and its end f² engage in an open slot, g², in the extension-rib A' of the barrel, and thus, in combination with the usual bolt of the gun, the barrels will be trebly locked and secured; and swinging the top snap-lever to unbolt the gun swings the end f² of plate Z out of the open slot g². At the same time the usual bolt of the gun disengages from the notches b of the lugs E, when the barrels can be swung down.

By this invention the tilting or swinging down of the barrels cocks the hammers. At the same time the triggers are locked to prevent their accidental movement, and when the barrels are returned to their locked or closed position the hammers are left cocked, the triggers held from movement, and the bar N returned to its original and normal position, where it cannot interfere with the movements of the hammer in the discharge of the gun.

The arrangement of the bar Y and lever V to be operated by the top snap-lever secures a perfect safety of the gun against accidental discharge of the same when loaded; and to discharge the gun the simple movement of the thumb-piece by hand, as described, suffices to relieve the triggers when they can be operated as desired. The extra locking-plate secures the locking of the gun beyond peradventure, all of which advantages are obvious, as well as others not needing mention.

The upper arm, P, to the lever plate L can be dispensed with, if desired; but it is preferable to have it for the reasons stated.

Connecting the bar N to the lever-plate L by link M enables the bar to move, as described, in a straight line and in a socket, c, in the end of a breech-block of a size in cross-section that is sufficient for the end of the bar attached to the link to freely move. Such link overcomes the necessary lateral movement of the bar, if pivoted directly to the lever L. Thus such socket c can be smaller and easier made than if more or less elongated, as would be

necessary to allow for such lateral movement, less metal is cut away, saving the strength of the breech-block. The bar N can, however, be pivoted directly to the plate L, if desired; but in such case the socket for the connecting-pivot in the plate or bar must be elongated in the right direction; also, the lever V and the locking-plate Z can be operated by a lever separate from and independent of the top snap-lever, although it is preferable to operate both by the top snap-lever. As is obvious, the friction-roller on pin R can be dispensed with, but it is preferable to use such, and the fore end of the gun can engage with the arms of the plate L in any suitable manner.

Although only one hammer and its operating-bar N and connecting parts are shown, the same are duplicated for the other barrel of the gun.

Having thus described my invention, what I claim is—

1. In a breech-loading gun, the combination, with its fore end, of a lever pivoted to the breech-block and connected to a bar, N, by a link, M, a hammer, H, acted on by the bar N to bring it into a cocked position, and mechanism for securing it in such position, substantially as described.

2. In a breech-loading gun, the combination of its fore end, having a pin, R, a lever, L, pivoted to the breech-block and having an arm, P, a bar, N, a link, M, connecting said bar and lever L, a hammer, H, acted on by the bar N to bring it into a cocked position, and mechanism for securing it in such position, substantially as described.

3. In a breech-loading gun, the combination of its fore end, having a pin, R, a lever, L, pivoted to the breech-block and having an arm, Q, a bar, N, a link, M, connecting said bar and lever L, a hammer, H, acted on by the bar N to bring it into a cocked position, and mechanism for securing it in such position, substantially as described.

4. In a breech-loading gun, the combination of its fore end, having a pin, R, a lever, L, pivoted to the breech-block, and having arms P and Q, a bar, N, a link, M, connecting said bar and lever L, a hammer acted on by the bar N to bring it into a cocked position, and mechanism for securing it in such position, substantially as described.

5. In a breech-loading gun, the combination of its fore end, provided with a friction-roller, a lever, L, pivoted to the breech-block and having arms P and Q, a bar, N, a link, M, connecting said bar and lever L, a hammer acted on by said bar to bring it into a cocked position, and mechanism for securing it in such position, substantially as described.

6. In a breech-loading gun, the combination of the mainspring J, the breech-block pro-

vided with stud s, bearing on the mainspring, the hammer H, the bar N, slotted to receive the stud s, and sliding to strike the hammer to bring it into a cocked position, means for sliding said bar, and mechanism to hold the hammer in its cocked position, substantially as described.

7. In a breech-loading gun, the combination of the trigger K, the lever V, pivoted to project over the upper edge of the trigger when moved in one direction, the sliding bar Y, to secure the triggers from movement, and the swinging top snap-lever, F, provided with the spindle G, having a cam, u' , working against the end of bar Y, to move the bar, substantially as described.

8. In a breech-loading gun, the combination, with the trigger K, of a pivoted lever, V, adapted to abut against said trigger, a sliding thumb-piece, W, provided with arms a' and b' , to bear against opposite sides of the upper end of said lever, a sliding bar, Y, on the under side of tang C, adapted to move arms a' and b' , and a lever, F, provided with a cam, u' , to bear against bar Y to move the same, substantially as described.

9. In a breech-loading gun, the combination, with the trigger K, of a lever, V, thumb-piece W, having arms a' and b' , a bar, Y, having a projection, n' , and notch r' in tang C, and a pin, l' , in arm b' , and notch m' in said bar, substantially as and for the purpose specified.

10. In a breech-loading gun, the combination, with the trigger K, of a lever, V, a thumb-piece, W, having arms a' and b' , a bar, Y, having a projection, n' , and notch t' in tang C, and a pin, l' , in arm b' , and notch m' in said bar Y, substantially as and for the purpose specified.

11. In a breech-loading gun, the combination, with a trigger, K, of a lever, V, adapted by one end to abut against said trigger, and by its other end to be operated by arms $a' b'$, of a thumb-piece, W, a sliding bar, Y, having a notch, x' , for engagement with a pin, l' , on the arm b' of said thumb-piece W, substantially as described.

12. In a breech-loading gun, the combination, with the rib-extension A' at the rear of the barrels, of a plate or bolt, Z, pivoted at one side of the center line of the rib-extension, and provided with an arm, b^2 , engaging in a notch, d^2 , in spindle G of top snap-lever, F, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOSEPH TONKS.

Witnesses:

EDWIN W. BROWN,
WM. S. BELLOWES.