

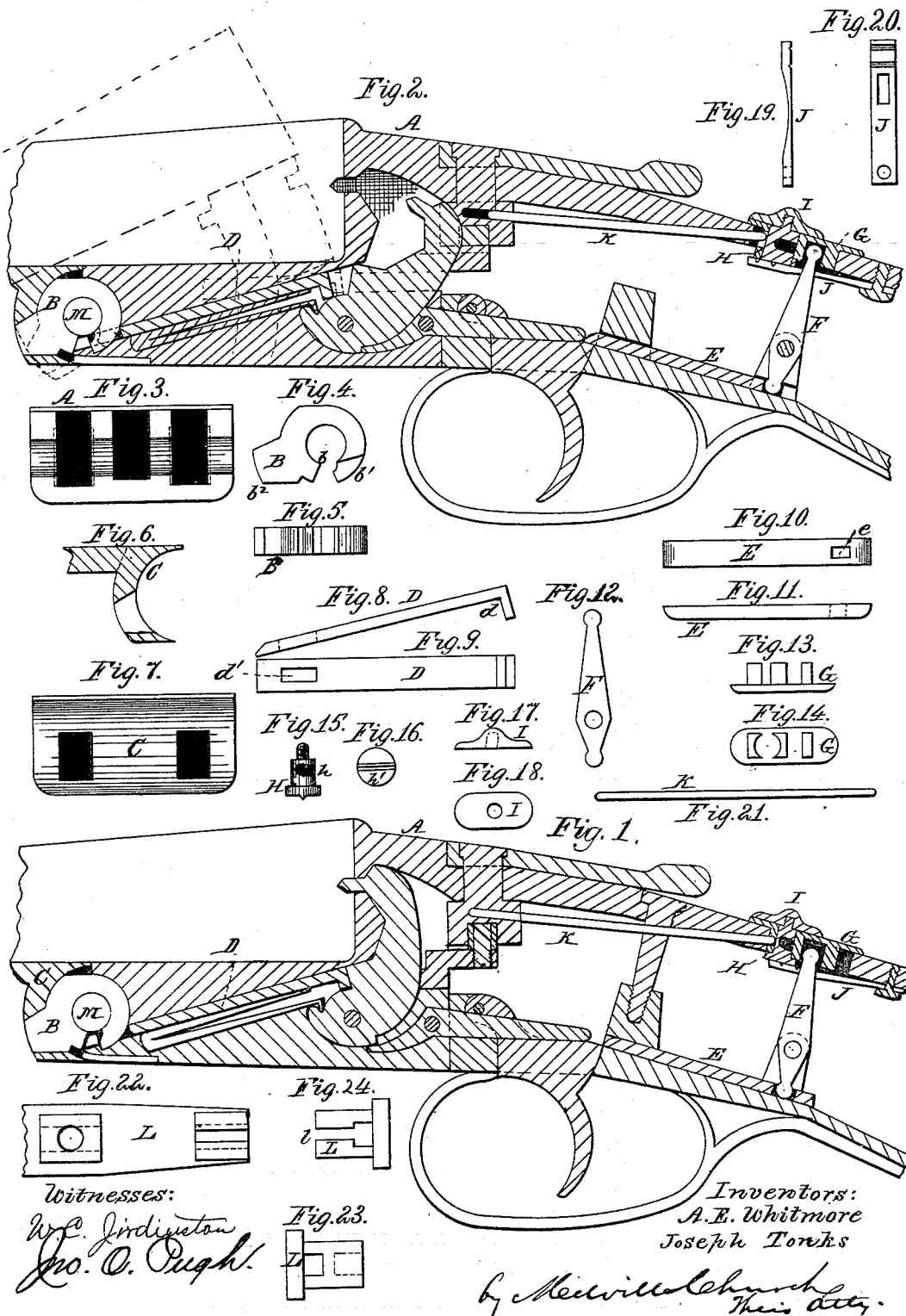
(No Model.)

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BREECH LOADING FIRE ARM.

No. 282,429.

Patented July 31, 1883.



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UNITED STATES PATENT OFFICE.

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BREECH-LOADING FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 282,429, dated July 31, 1883.

Application filed September 30, 1882. (No model.)

To all whom it may concern:

Be it known that we, ANDREW E. WHITMORE, of Springfield, in the county of Hampden, State of Massachusetts, gun-maker, and

5 JOSEPH TONKS, of Malden, in the county of Middlesex, State of Massachusetts, gun-maker, have invented Improvements in Breech-Loading Fire-Arms; of which the following is a specification.

10 Our invention has reference to breech-loading fire-arms of the kind commonly called "drop-down internal-hammer guns"—that is, breech-loading guns in which the barrel turns on a joint, the open breech end being raised

15 from the break-off for charging, and shut down and fastened against the break-off during discharge.

Our improvement consists, first, in the following construction and arrangement of parts

20 of the lock mechanism, whereby the cocking of the arm is effected by the raising of the breech end of the barrel for charging; and, secondly, in a safety device for locking the trigger automatically on opening the arm for

25 charging, and a swivel thumb-piece on top of the breech-tang, whereby the safety mechanism can be disconnected and reconnected at pleasure.

In the joint of the breech-block is a slot or

30 cavity, through which the joint-pin passes, and on said joint is hung a lever with tapering projection or stud fitting into the cross-head of fore end. The said projection or stud is made tapering to allow the fore end

35 to be easily attached and detached without first cocking the arm, and when the fore end is attached to the barrel it constitutes the long arm of a lever. In said lever is a slot or shoulder, which is the short arm of a lever which presses

40 against the lower end of the push-bar which pushes the hammer or striker to the cock-notch, when the barrel is dropped to receive the charge. In said lever, opposite the slot or shoulder, is a hook, which engages in a slot

45 in the push-bar which returns the push-bar to its normal position when the barrel is closed ready for firing. On the other end of push-bar is a knee or offset, which lifts the hammer or striker and gives the same a longer sweep

to insure the certain explosion of the cap or primer. The said push-bar works in an inclined groove in the under part of the breech-block. The hammer or striker is hung in a vertical groove at the rear end of the breech-block, and is provided with a mainspring lying in a groove underneath the push-bar. Said groove is somewhat wider than the groove that the push-bar works in, in order to provide bearings for said springs and allow free action of the push-bar, and is also provided with a sear and sear-spring, and is operated by a trigger in the usual manner.

The action of parts is as follows: When the barrel is dropped to receive the charge, the fore end is depressed and the slot or shoulder in the cocking-lever or the joint-pin operates against the lower end of the push-bar, which raises the hammer or striker until it engages with the sear and is retained in its cocked position. On closing the barrel for firing the push-bar is returned to its normal position by the hook on the cocking-lever, and the hammer or striker is relieved by a pull on the trigger in the usual manner, and the hammer or striker, by the action of the mainspring, discharges the arm.

The safety device consists of a sliding bolt working through two slots in the studs on the trigger-plate and securely locking the trigger at its rear end. The said bolt is provided with a slot in which works a lever pivoted in the rear stud on the trigger-plate, said lever extending through the hand of the stock to the under part of the breech-tang, and is operated by a sliding thumb-piece. The said thumb-piece is automatically worked by a sliding rod connected with the bolting mechanism which fastens down the barrel. On opening the gun to receive the charge the rod is propelled backward against the thumb-piece which operates the long arm of the lever passing through the stock, which slides the bolt over the end of the trigger for safety, and is pushed forward by the thumb and relieves the trigger for firing. The said thumb-piece is made in two parts, and connected by a screw which has a recess or cavity therein, and, when said recess or cavity is turned toward the end of the sliding rod,

stops the action of the trigger-locking device; when turned to former position, reconnects the action. On the head of said screw is a tooth which works in two grooves in a spring attached to the under part of the breech-tang to govern the action of the thumb-piece.

We will now describe our invention by the accompanying drawings, and the manner of working the same.

Figure 1 represents in longitudinal vertical section a breech-loading drop-down internal-hammer gun, containing cocking mechanism and trigger safety device, constructed according to our inventions, the hammer or striker being represented in its discharged position, and the trigger-locking bolt drawn back from end of trigger. Fig. 2 represents the said mechanism with the hammer or striker in its cocked position ready for firing, and a safety mechanism with a trigger-locking bolt over the end of trigger; also showing in dotted lines the breech end of barrel raised, and the action of the fore end, cocking-lever, and push-bar to cock the arm. Fig. 3 represents in cross-section and end view the joint of the breech-block, showing the slots or cavities in which the cocking-lever hangs on joint-pin; also, in dotted lines, the grooves for main-spring. Fig. 4 is a side elevation of the cocking-lever, showing the tapered projection or stud that connects with the fore end; also, the slot or shoulder that engages the push-bar that raises the hammer or striker; also, the hook on the same that returns the push-bar to place. Fig. 5 is a cross-section view of the cocking-lever. Fig. 6 is a sectional elevation of the fore-end strap, showing the slot in which the tapering projection or stud of the cocking-lever fits. Fig. 7 is an end view of the cross-head of fore-end strap, showing the said slots. Fig. 8 is a side view of the push-bar, showing a knee or projection on one end for raising the hammer or striker. Fig. 9 is a bottom view of the same, showing the slot in which the hook on the cocking-lever works. Fig. 10 is a top view of the trigger-locking bolt, showing the slot in which the pivoted lever in rear stud on trigger-plate slides said bolt back and forth. Fig. 11 is a side view of the same. Fig. 12 is a lever pivoted in the rear stud on trigger-plate, passing through the hand of the stock, and is operated by the thumb-piece on breech-tang. Fig. 13 is a side view of the lower part of the thumb-piece, on which are two posts to operate the said lever. In said piece is a hole, through which passes a screw to connect the top part of thumb-piece with the lower. Fig. 14 is a bottom view of the same, showing the hole in which the screw passes, and the ends of posts. Fig. 15 is a screw which has a tooth on the head and a recess or cavity in the shaft, to allow the play of the sliding rod and to stop the action of the trigger-locking device. Fig. 16 is an end view of the head of screw with tooth thereon, to hold the thumb-piece in place. Fig. 17 is a side view of the

top part of the thumb-piece. Fig. 18 is a bottom view of the same, showing a hole for the screw to connect the two parts of thumb-piece together. Fig. 19 is a side view of a spring with two grooves across, in which works the tooth or the head of screw to govern the action of the thumb-piece. Fig. 20 is a top view of same, showing grooves across with slot and hole to attach it by a screw to the breech-tang. Fig. 21 is a sliding rod, one end connected with the barrel-locking mechanism, the other end operating the sliding thumb-piece on the breech-tang. Fig. 22 is a top view of a part of trigger-plate with the two studs thereon, the forward stud showing the hole for breech-pin, and in dotted lines the slot to receive the trigger-locking bolt, the rear stud showing in dotted lines the slot for said bolt, also the slot for trigger-locking lever. Fig. 23 is an end view of forward stud, showing the slot for trigger-locking bolt, and in dotted lines the hole for the breech-pin. Fig. 24 is an end view of rear stud, showing slot for trigger-locking bolt, also slot for trigger-locking lever.

The same letters of reference indicate the same parts.

We will now describe the working of the several parts of our invention by the accompanying drawings, with the aid of the several figures and letters of reference.

C, Figs. 6, 7, is the fore-end strap, which is attached to the under side of barrel and connected with the cocking-lever B, Figs. 4, 5; also shown in A, Figs. 1, 2. It constitutes the long arm of a lever, turning on joint *m*.

b is the slot or shoulder in the cocking-lever B, Figs. 4, 5, which constitutes the short arm of lever, and when the barrel is dropped engages the lower end of push-bar D, Figs. 8, 9, the knee *d* of which raises the hammer or striker to cock-notch, where it is held by the sear, as shown in A, Fig. 2.

b' is the hook on cocking-lever B, Figs. 4, 5, that works in the slot *d'* in push-bar D, Figs. 8, 9, and returns the same to place when the gun is closed.

E, Figs. 10, 11, is the trigger-locking bolt, working in the slots L through studs on trigger-plate L, Figs. 23, 24, the forward end of bolt passing over the back end of trigger, as shown in A, Fig. 2.

e is the slot in the bolt E, Figs. 10, 11, in which the short arm of the trigger-locking lever F, Fig. 12, slides E, Fig. 10, back and forth.

F, Fig. 12, is the trigger-locking lever, pivoted in slot *l*, Fig. 24.

G, Figs. 13, 14, is the lower part of thumb-piece on breech-tang.

G, Figs. 13, 14, is an opening between the posts, in which the long arm F, Fig. 12, operates E, Fig. 10.

H, Figs. 15, 16, is the screw that connects G, Fig. 13, and I, Fig. 17, together.

h, Fig. 15, is the cavity in post to disconnect the push-rod K, Fig. 21.

h, Fig. 16, is the tooth across the head of screw that works in the grooves *b* across the spring *l*, Figs. 19, 20.

l, Figs. 19, 20, is the spring that holds the thumb-piece on breech-tang in place.

k, Fig. 21, is a push-rod, one end connected with the barrel-locking mechanism, the other end operating thumb-piece.

Our improvements apply to either single or double barrel drop-down guns.

We do not broadly claim cocking the hammer or striker of an internal-hammer gun by a lever or levers, using the pivot on which the barrel is hinged for a fulcrum, for there are several to our knowledge—namely, Scott and Baker's, December 3, 1876; but we do claim, by the construction and placing of the several parts of our invention, to reduce the friction of cocking to its minimum without sacrificing any strength or durability of the arm; nor do we claim originality in locking the trigger automatically by the barrel-bolting mechanism, or rendering the same inoperative at the will of the operator; but we do claim an effective and positive trigger-locking bolt, and a very simple and cheaply-made mechanism for disconnecting and reconnecting the automatic working of the same, as specified and shown.

Having described our invention, what we claim to be new and useful, and desire to secure by Letters Patent, is—

1. In a breech-loading fire-arm in which the barrel tilts up at the inner end to open the breech, the combination, with the breech-block, the hammer, and a cocking push-bar, of the fore end, provided with the tapering recess or socket, the hinge-pin, and the rocking operating-lever mounted on the hinge-pin and having the tapering projection which fits the corresponding recess in the fore end, substantially as described, for the purpose specified.

2. In a breech-loading fire-arm in which the barrel tilts up at its inner end to open the breech, the combination of the breech-block, the hinge-pin, the lever mounted upon the hinge-pin and having a projection which engages the fore end, so as to be rocked by the tilting of the barrel, and having also a retracting-hook, with the cocking push-bar, with which said retracting-hook positively engages to retract it when the breech is closed, substantially as described.

3. The combination of the breech-block, the hinge-pin, the lever mounted upon the hinge-pin, and having a projection which engages the fore end, and having also a retracting-hook, and a pushing projection, and the cocking push-bar, with which the pushing projection and retracting-hook engage, so as to alternately and positively push and retract it, substantially as described.

4. The combination, with the trigger-locking bolt and its operating-lever, of the sliding thumb-piece for vibrating the said lever and having the swiveled post, provided with the slot in its side, the barrel-locking mechanism, and the push-rod operated thereby, adapted to be thrown into or out of co-operation with the post of the thumb-piece, according to the position in which said post is turned, substantially as described.

5. The combination, with the trigger, of the trigger-locking bolt, the vibratory lever for sliding said bolt, the sliding thumb-piece having the rib, and the spring co-operating with said rib to hold the thumb-piece in its adjusted positions, substantially as described.

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