

W. RICHARDS.

Breech-Loading Fire-Arms.

No. 133,665.

Patented Dec. 3, 1872.

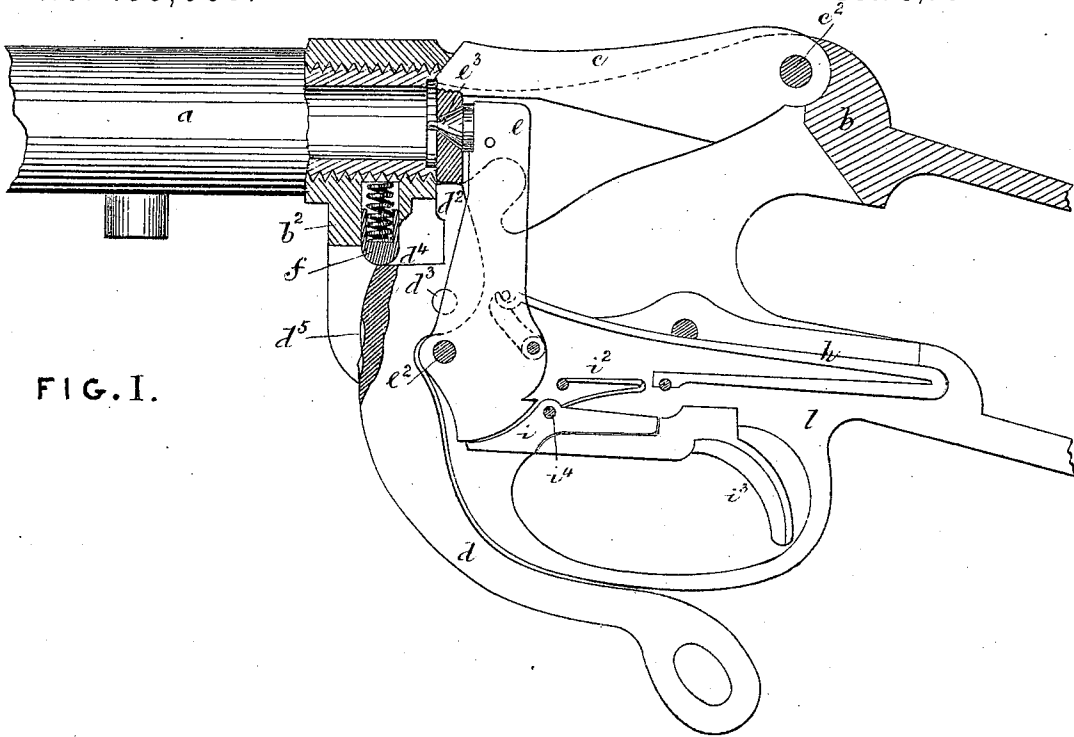
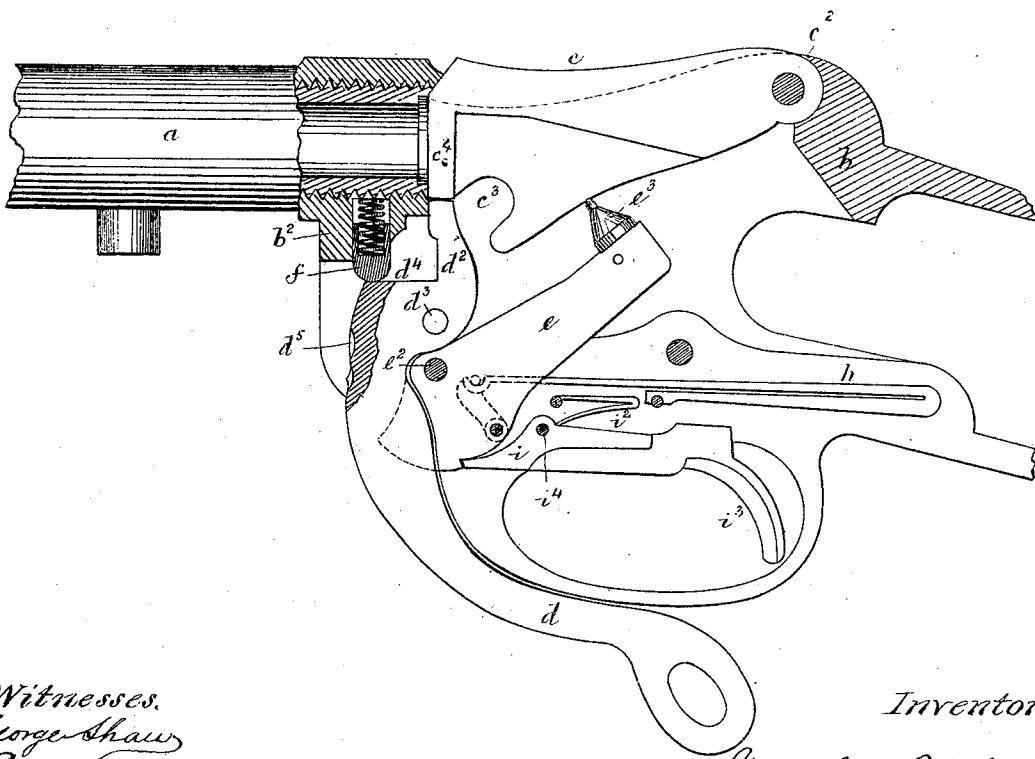


FIG II



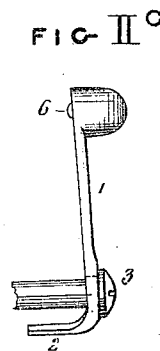
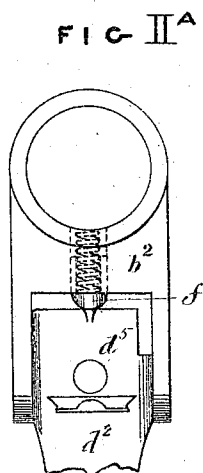
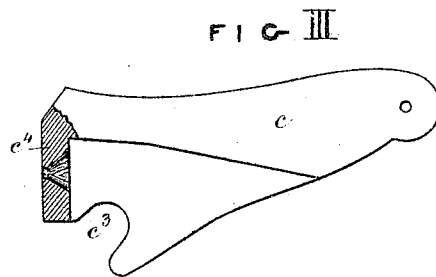
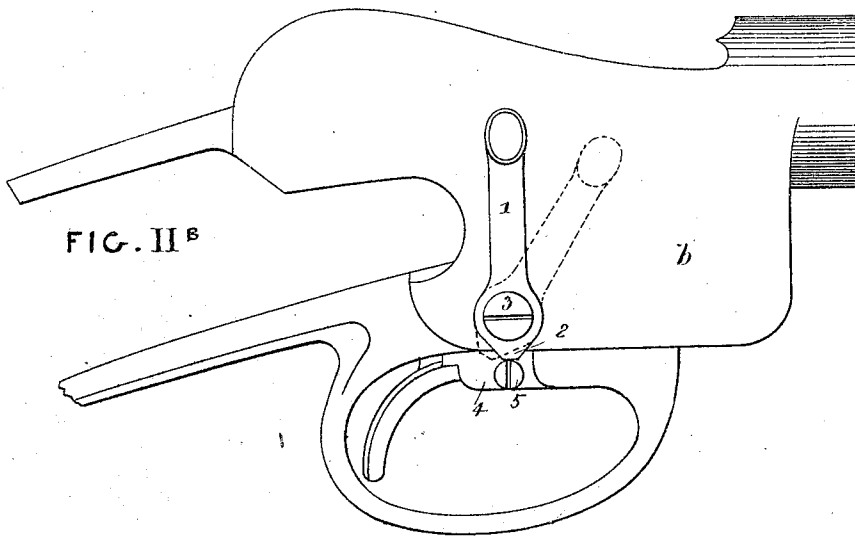
Witnesses.
George Shaw
Richard Perrett

Inventor:
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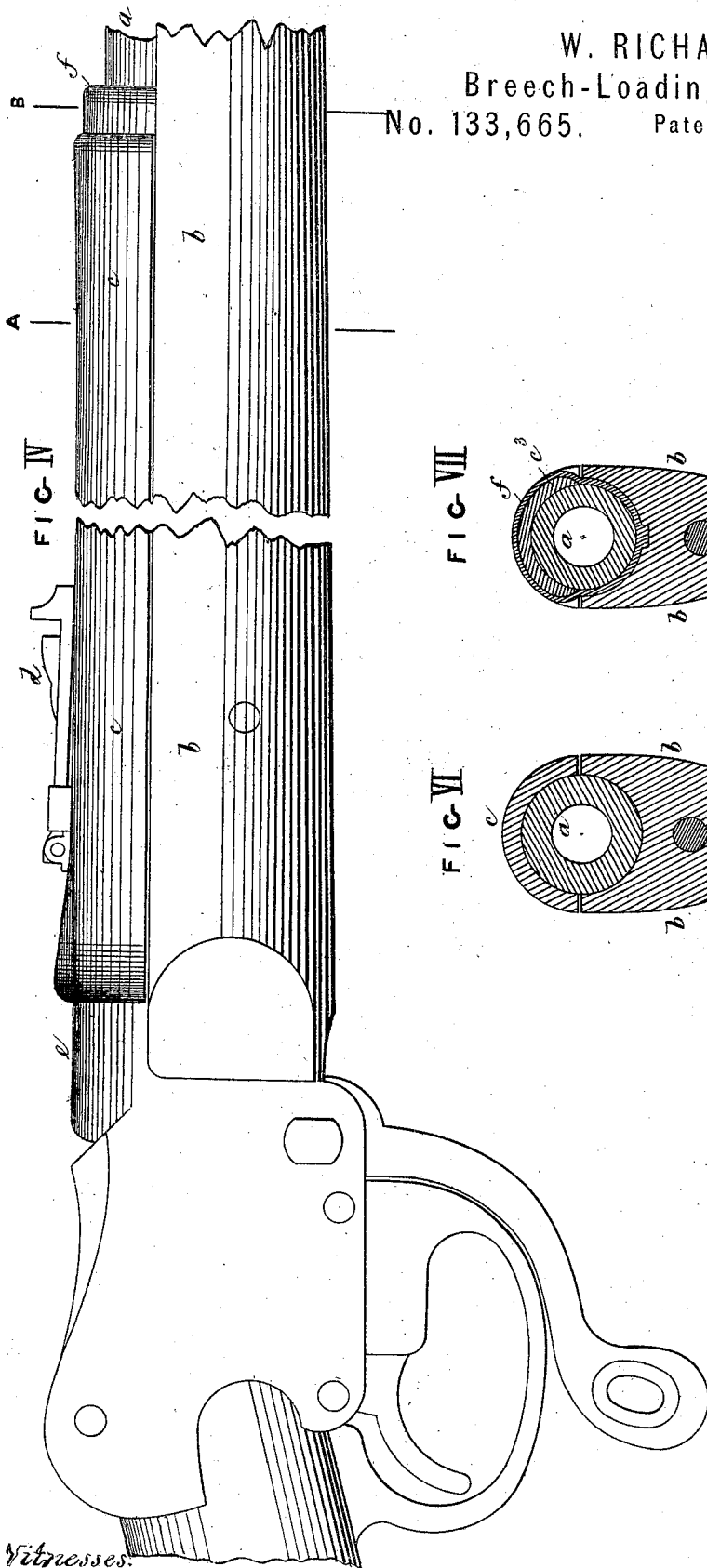


FIG-VII

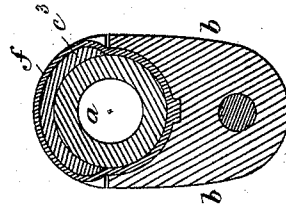


FIG-VI

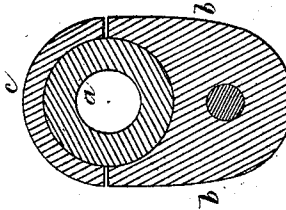
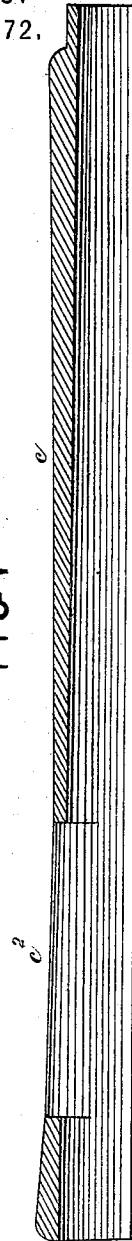


FIG-V



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UNITED STATES PATENT OFFICE.

WESTLEY RICHARDS, OF BIRMINGHAM, ENGLAND.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

Specification forming part of Letters Patent No. 133,665, dated December 3, 1872.

To all whom it may concern:

Be it known that I, WESTLEY RICHARDS, of Birmingham, in the county of Warwick, England, gun manufacturer, a subject of the Queen of Great Britain, have invented or discovered new and useful Improvements in Breech-Loading and other Fire-Arms; and I, the said WESTLEY RICHARDS, do hereby declare the nature of the said invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement thereof—that is to say:

My invention relates, first, to breech-loading guns of the kind called drop-block guns—that is, guns in which the breech-block is jointed at its rear end to the frame or body, the said block descending in the said body to open the breech for loading. This part of my invention consists in constructing and arranging the parts of the said breech-loading guns in the manner hereinafter described and illustrated in the accompanying drawing. The hand-lever, by which the block is supported and operated and by which the hammer is cocked, is placed at the front of the trigger-guard, but the acting part of the hammer of the gun is situated immediately behind, and is acted upon directly by the upper part of the said hand-lever to cock the hammer, as more particularly described with reference to the gun represented in Figs. 1, 2, and 3—

Figure 1 showing a longitudinal section of the breech end of the gun, the parts being in the positions which they respectively occupy after the gun has been discharged; and Fig. 2, the same when the hammer has been raised to full-cock preparatory to the discharge of the gun. Fig. 3 represents the breech-block of the gun detached.

The same letters indicate the same parts in Figs. 1, 2, and 3.

a is the barrel; *b*, the body or frame to which the drop-block *c* is jointed at *c'*. *d d'* is the hand-lever turning on the center *d''* for supporting and operating the drop-block *c* and for cocking the hammer *e*, the said hammer being situated immediately behind the upper part *d''* of the hand-lever *d d'*. The center *e'*, on which the hammer *e* turns, is situated directly under the axis or center *d''* of the hand-lever—that is, nearly in the vertical plane in which

the face *e'* of the block *c* and the base of the cartridge (in the loaded gun) are situated. The axis or center *e'* of the hammer is forged solid or in one piece with the hammer. The nose *e''* of the hammer *e* strikes through a hole in the face *e'* of the block *c* direct upon the percussion-cap of the cartridge. The said nose *e''* is made movable or separable from the hammer *e* so that the said nose or striker can be removed for repair or replaced by another. The said movable nose *e''* is screwed into the hammer, its rotation being prevented by a locking-pin. *h* is the mainspring, connected to the hammer *e* by a swivel. A rubber or tubular bolt, *f*, pressed upon by a coiled or other spring holds the hand-lever *d d'* either in the position which it occupies when the breech is open or that which it occupies when the breech is closed. The said rubber or bolt *f* is situated in a lump, *b'*, at the front end of the breech frame or body *b*. When the breech is closed the rubber *f* bears upon the shoulder *d'* of the hand-lever. When, however, the breech is opened the said rubber bears upon the front of the lever and drops into the concavity *d''*. An elevation of the front end of the body or frame *b* and upper part of the hand-lever are represented in Fig. 2^a. In the front end of the block *c* is a curved opening, *e'*, into which the upper arm *d''* of the hand-lever takes to depress and raise the said block. *i* is the sear for engaging with the bent in the hammer *e*. *i'* is the sear-spring. *i''* is the trigger, turning by preference on the same center *i'* as the sear *i*. The lock mechanism—that is, the hammer *e e'*, mainspring *h*, sear and sear-spring *i i'*, and trigger *i''*—are made upon or carried by the trigger-guard *l* and the tang of the said trigger-guard, so that the removal of the trigger-guard *l* detaches the whole mechanism of the lock from the body of the gun.

The action of the gun is as follows: After the discharge of the gun the parts occupy the positions represented in Fig. 1. To open the breech for the introduction of a fresh cartridge into the barrel the hand-lever *d d'* is moved forward. The first action of the upper arm *d''* of the hand-lever is to press back the hammer *e* by bearing on the breast of the said hammer and withdraw its nose or striker *e''* from the hole in the face *e'* of the block *c*. The block *c*

is now at liberty to descend. The continued motion of the hand-lever causes its arm d^2 to pass from under the face or front end c^4 of the block and enter the curved recess c^3 in the said block. The block now descends into the frame or body b and opens the barrel for charging, the hammer e at the same time being depressed and cocked by the sear i engaging with the bent in the said hammer, as represented in Fig. 2. During the whole of the motion of the hand-lever to depress the block and cock the hammer the upper arm d^2 is in contact with the breast of the said hammer. On bringing the hand-lever d d^2 into the position represented in Fig. 2 after the introduction of a fresh cartridge into the barrel, the block c is lifted and supported by the hand-lever so as to close the breech, the cocked hammer being left behind. The gun is now ready for discharge. By pressing the trigger i^3 the sear i is released from the bent of the hammer e , and the said hammer is liberated, and, being urged forward by the spring h , its nose e^3 strikes through the face of the block c and discharges the gun.

I apply to the gun a safety-lever bolt for preventing the accidental discharge of the gun. This lever-bolt is represented in side elevation in Fig. 2^a, and in edge view detached in Fig. 2^c. The said bolt is marked 1 2, and consists of a lever situated outside the body b and turning on the center 3. The lower arm 2 is turned at right angles to the upper arm 1, the extreme end of the said lower arm 2 bearing against the side of the trigger 4. On the trigger 4 is a pin or stud, 5. When the safety-lever bolt 1 2 is in the position represented in Fig. 2^a the lower arm 2 is situated immediately opposite the pin or stud 5 on the trigger, and the said trigger cannot be raised or moved, and the accidental discharge of the gun is thereby prevented. When it is wished to discharge the gun the safety-lever bolt is turned on its joint 3 into the position indicated in dotted lines in Fig. 2^a. The lower arm 2 of the said bolt is thereby removed from opposite the pin or stud 5, and the trigger can now be raised or moved to discharge the gun. A stud, 6, at the back of the handle end of the bolt drops into holes in the body b to fix the said bolt either in the position in which it fastens the trigger or in that in which it releases the trigger.

My invention consists, secondly, of the following improvements in fire-arms: By the rapid discharge of fire-arms, especially of such as are loaded at the breech, the barrel becomes so heated that it can be handled only with great difficulty. The object of this part of my invention is to obviate this difficulty and so to protect the hand from the heat of the barrel during rapid firing as to permit the fire-arm being handled without inconvenience from the heat of the barrel. This part of my invention consists of a guard or cover, of wood or other imperfect conductor of heat, applied to the upper side of the barrel and extending a short

distance toward the muzzle. The cover may be made in one piece with the fore part of the stock, or separate from the stock. In the latter case it may be attached in any convenient way to the barrel or fore part of the stock, or to the body of the gun.

Fig. 4 represents, in side elevation, a portion of a breech-loading gun provided with a separate guard or cover according to my invention. Fig. 5 is a longitudinal section of the guard or cover detached, and Figs. 6 and 7 are cross-sections of the gun taken, respectively, through the lines A B.

The same letters indicate the same parts in Figs. 4, 5, 6, and 7.

a is the barrel of the gun. b is the fore part of the stock, and c is the guard or cover, made of wood and having a semi-tubular figure. The under side of the guard or cover c fits upon the upper side of the breech end of the barrel a , and extends a short distance toward the muzzle end. The edges of the said guard c fit upon the edges of the fore part b of the stock. A hole at c^2 is made in the guard or cover c for the back sight d to pass through. The said guard or cover c is secured in its place on the barrel a by passing the said guard or cover over the back sight d , and making its rear end abut against the body a of the gun. By then slipping the band f over the contracted fore end c^3 of the guard or cover (see Fig. 7) it is securely fixed to the barrel.

The semi-tubular figure of the guard or cover c , and the manner in which the band f is passed over its front end, will be best understood by an examination of the cross-sections, Figs. 6 and 7. It is necessary to remove the fore part b of the stock from the barrel to connect the guard or cover c to or disconnect it from the barrel a . The guard or cover may only extend to the back sight d , its rear end engaging under a lip on the back sight; or the rear end may be fixed by a cross-pin.

Although I have described and represented the best methods with which I am acquainted of securing the guard or cover to the barrel, yet I wish it to be understood that the guard or cover may be fastened in a variety of other ways, which I do not think it necessary to describe. Besides wood the guard or cover may be made of ebonite or *papier-maché*, or other imperfect conductor of heat.

When a gun is provided with a guard or cover according to my invention that portion of the barrel which is grasped by the hand in use is completely covered, and the barrel can thereby be handled in its heated state without inconvenience.

My invention is specially valuable in its application to breech-loading guns, but may also be applied to muzzle-loading guns and to pistols.

Having explained the nature of my invention and the manner in which the same is to be performed, I wish it to be understood that I claim as my invention—

1. The arrangement and combination with

the hand-lever d d^2 of the hammer e , substantially as described and represented in Figs. 1, 2, 2^a, and 3 of the drawing, the said hammer turning upon an axis immediately under that on which the hand-lever turns, and being cocked by the direct action of the said hand-lever.

2. In combination with the breech-block and the hand-lever, the hammer e having its center or axis arranged below and relatively to the center or axis of the hand-lever, as described, and the lock mechanism connected therewith, the said hammer and lock mechanism being mounted on and carried by the trigger guard and tang, substantially as herein shown and described.

3. In combination with the hand-lever provided with shoulder d^4 and concavity d^5 , the spring rubber or bolt f , said parts being con-

structed and arranged for joint operation substantially as shown and described.

4. The improved safety-lever bolt and stud for fixing and releasing the trigger hereinbefore described and illustrated in Figs. 2^b and 2^c of the drawing.

5. The combination, with the barrel of a firearm, of a guard or cover, of wood or other imperfect conductor of heat, for the purpose of protecting the hand from the heat of the barrel after rapid firing, the said guard or cover being constructed and applied substantially as hereinbefore described and illustrated in Figs. 4, 5, 6, and 7 of the drawing.

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Witnesses:

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