(No Model.)

A. GROULEFF & H. B. WILLIAMS.

BREECH LOADING FIREARM.

No. 477,410. Patented June 21, 1892.

Fig. 1.

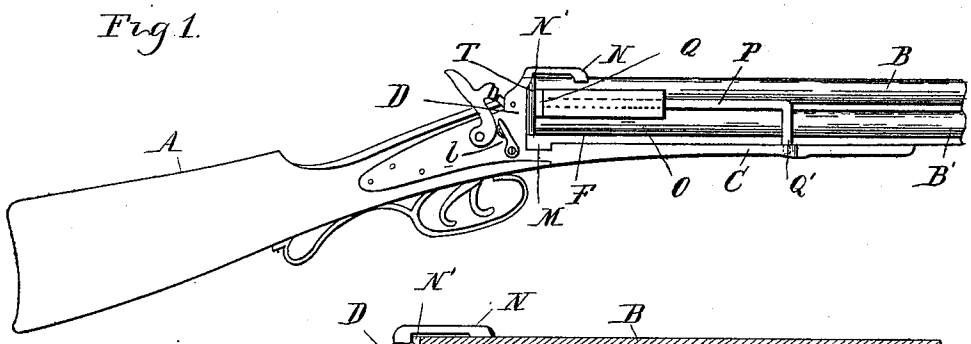


Fig. 2.

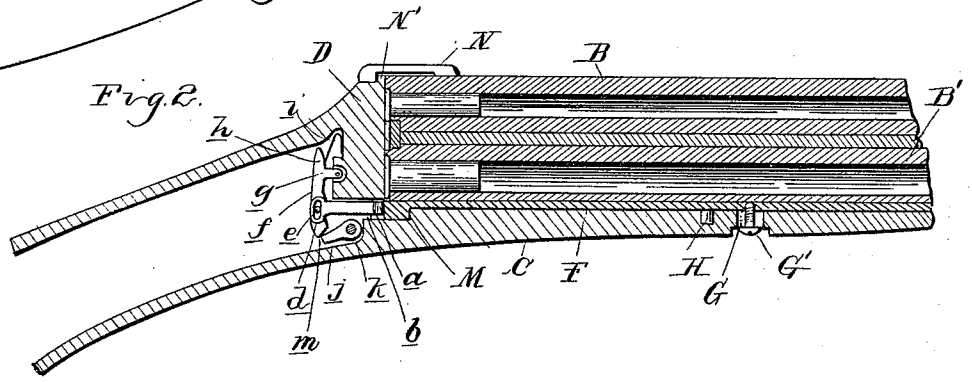


Fig. 4.

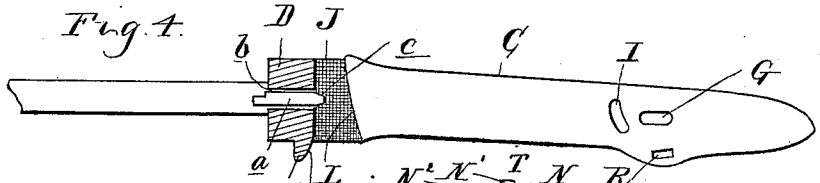
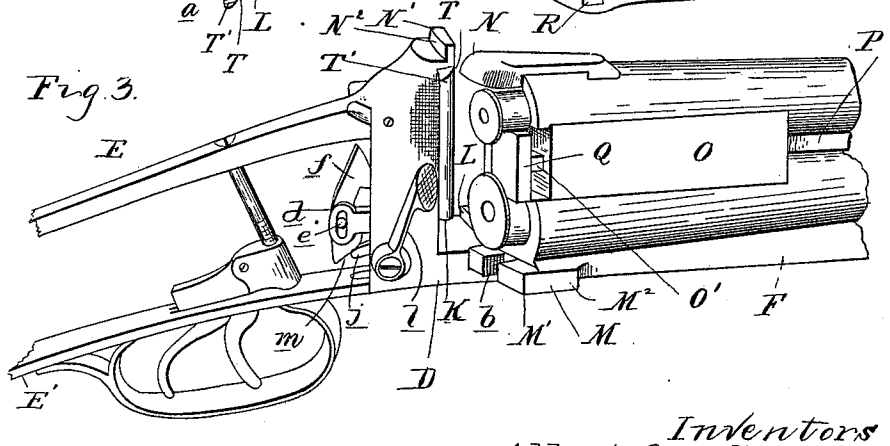


Fig. 3.



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UNITED STATES PATENT OFFICE.

ALBERT GROULEFF AND HENRY B. WILLIAMS, OF GRAYLING, MICHIGAN.

BREECH-LOADING FIREARM.

SPECIFICATION forming part of Letters Patent No. 477,410, dated June 21, 1892.

Application filed November 12, 1891, Serial No. 411,759. (No model.)

To all whom it may concern:

Be it known that we, ALBERT GROULEFF, a subject of the King of Denmark, and HENRY B. WILLIAMS, a citizen of the United States, both residents of Grayling, in the county of Crawford and State of Michigan, have invented certain new and useful Improvements in Breech-Loading Firearms, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in breech-loading firearms; and the invention relates to that class of breech-loading guns in which the barrel or barrels are pivoted upon the fore-arm and are opened by a horizontal movement, such movement extracting the cartridge.

The invention consists in the peculiar construction of the extractor, the fore-arm, the breech-block, and the lock for the barrels, whereby we obtain a simple and efficient construction, always insuring a tight closing of the breech upon the breech-block, and whereby all the strain in firing the gun is taken off from the pivot-pin upon which it turns, and, further, in the peculiar construction, arrangement, and combination of the various parts, all as more fully hereinafter described.

In the drawings, Figure 1 is a side elevation of our improved gun. Fig. 2 is a vertical central longitudinal section therethrough. Fig. 3 is a perspective view of the breech-block, &c., showing the barrels in their open position and with the stock removed. Fig. 4 is a plan view of the fore-arm, with the breech-block in section.

A is the stock.

B and B′ are the barrels.

In the drawings we have shown the barrel B as a rifle-barrel, and the barrel B′ designed for shot, the two being arranged in vertical line.

C is the fore-arm, which is provided with the usual breech-block D, having the rearwardly-extending butt-plate E and the tongue E′.

F is a plate secured to the under side of the rear end of the barrels and extending forward about the length of the fore-arm and rearwardly projecting slightly beyond the end of the barrels. The fore-arm is provided with a slot G, through which the pivot screw or bolt G′ is adapted to pass and to engage in a suitable aperture in the plate F, forming the pivot-pin upon which the barrels turn. The plate F is also provided with the downwardly-extending lug H, adapted to engage in the camway I in the fore-arm, the parts being so constructed that in swinging the barrels to their closed position, the lug H, engaging in the camway I, will force the barrels to snugly fit against the breech-block and make a tight joint.

To take the strain off of the lug H and pivot-pin G′ in the firing of the gun and to more securely lock the barrels to the breech-block, we form a groove J in the fore-arm, the undercut portion K in the breech-block, and the curved or inclined shoulder L at the forward edge of the groove, a corresponding locking-lug M being formed on the plate F, having the projection M′, adapted to engage in the undercut portion K, and the shoulder M^2, adapted to engage with the shoulder L and tightly lock the barrel against forward or rearward motion, the extension M′ engaging into the undercut portion K, also preventing vertical displacement of the barrel.

N is a hook secured to the top of the barrels and overhanging the rear end thereof, adapted to engage with a locking-lug N′ upon the top of the breech-block having the inclined or curved shoulder N^2, with which a corresponding shoulder of the hook N engages, thus forming a lock at top and bottom with the wide bearing-surfaces to hold the barrels in their closed position against any possible movement.

a is a locking-bolt journaled in a suitable way formed in the breech-block, adapted to engage with its forward end in the notch *b* in the rear end of the plate F, as plainly shown in Fig. 4, this bolt being preferably provided with an inclined face *c*, so constructed as to act as a wedge to continually press the barrel toward its closed position. This bolt at its rear end is provided with an eye *d*, in which a pin *e* on the lever *f* engages. This lever has an extension *g* engaging with a suitable pivot-pin in the rear face of the breech-block. It is also provided with an extension *h*, against which a spring *i* bears, which spring tends to hold the bolt normally extended. To retract the bolt, a finger *j*, journaled upon a shaft *k* and adapted to be actuated by means of a

crank-arm *l* upon the outside of the gun, bears against the cam or inclined face *m* on the lower end of the lever, all so arranged that by rocking the crank *l* the finger *j* will strike the inclined face *m* and withdraw the bolt, compressing the spring *i*. As soon as the operator releases his hold of the crank the spring will expand and again extend the bolt in position to engage the notch on the plate F as the barrel is turned to its closed position.

O is a guide-plate secured on the side of the barrels, preferably between the two, and provided with a suitable aperture O′, through which the extractor-bolt P slidingly engages. This bolt is provided at its outer end with an extractor-head Q, of suitable shape to engage with the rim of the cartridge in both barrels. The bolt P extends rearwardly to a point at or near the pivot-pin, and is provided with a downwardly-extending arm Q′, engaging in a slot R in the fore-arm, as shown in Fig. 4, all so arranged that in swinging the barrels upon the pivot the differential movement between the barrels and the extractor-bolt will cause that bolt to be pushed out beyond the end of the barrels, as shown in Fig. 3, and carry with it the cartridges to extract the same from the barrels. Cartridges having been inserted into the barrels until they strike the extractor-head, in closing the barrel they will strike the curved face T on the lip T′, formed at the side of the breech-block, and will be readily fed into the barrel to their seat.

What we claim as our invention is—

1. In a breech-loading firearm, the combination, with the fore-arm having the groove J, the breech-block formed with the undercut portion K, and the barrels, of a plate F on the barrels, a pivotal connection between the plate and fore-arm, the locking extension projecting beyond the end of the barrels engaging the groove and undercut portion, a cam formed on the fore-arm, and the lug H, engaging the cam, substantially as described.

2. In a breech-loading firearm, the combination, with the fore-arm and breech-block formed, respectively, with the groove J and undercut portion K, of the barrel, the plate on the under side thereof, a pivotal connection between the plate and fore-arm, a locking extension on the plate engaging in the groove and undercut portion, the hook N on the top of the barrel, and a shoulder on the breech-block having a curved face with which the hook engages, substantially as described.

3. In a breech-loading firearm, the combination, with the fore-arm, of laterally-movable barrels pivoted thereto, a breech-block, a vertically-disposed lip on the side thereof having a curved forward face, and means for locking the barrels, substantially as described.

4. In a breech-loading firearm, the combination, with the fore-arm having the slot R therein, of the laterally-movable barrels pivoted to the fore-arm, the extractor-head Q between the barrels, and the bolt P, engaging the extractor-head, of the arm Q′, engaging the slot R of the fore-arm, substantially as described.

5. In a breech-loading firearm, the combination, with the fore-arm, of the laterally-movable barrels pivoted thereto, a reciprocating bolt *a*, engaging the barrels, the lever *f* at the rear of the bolt, the spring *i*, engaging the lever, a pivoted finger engaging the lever at a point opposite the spring, a cam on the lever at the point of engagement between the same and the finger, and the crank *l* for actuating the finger, substantially as described.

In testimony whereof we affix our signatures in the presence of two witnesses.

ALBERT GROULEFF.
HENRY B. WILLIAMS.

Witnesses:
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