B. CLARUS.

BREECH MECHANISM OF GUNS.

APPLICATION FILED OCT. 12, 1911.

1,143,612.

Patented June 22, 1915.

2 SHEETS—SHEET 1.

Fig. 1.

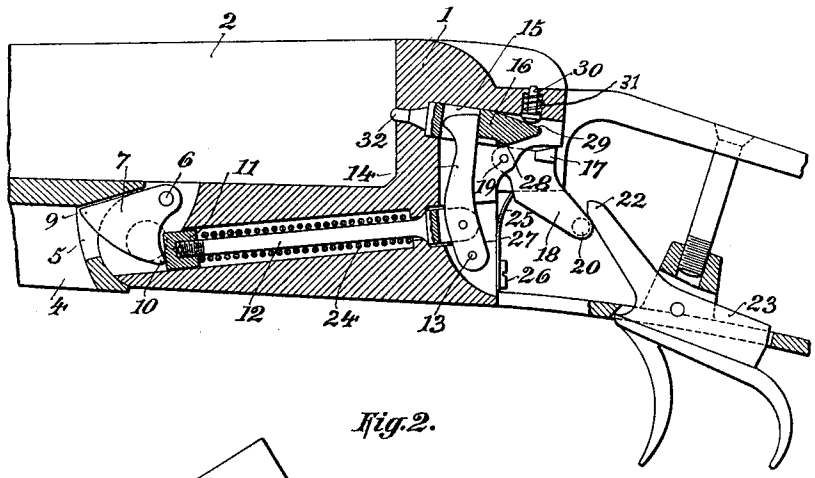


Fig. 2.

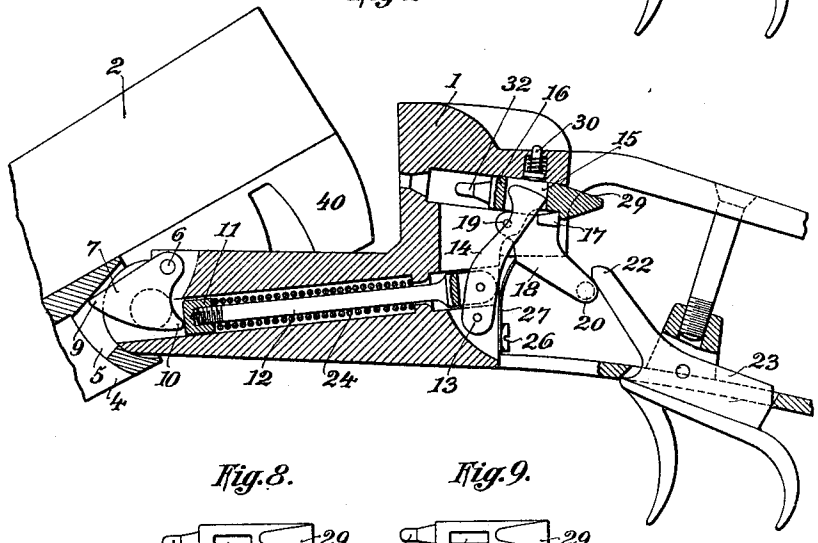
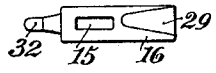


Fig. 8.



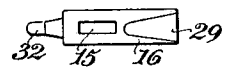
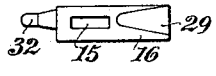
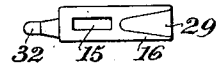


Fig. 9.





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BREECH MECHANISM OF GUNS.

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2 SHEETS—SHEET 2.

Fig.3.

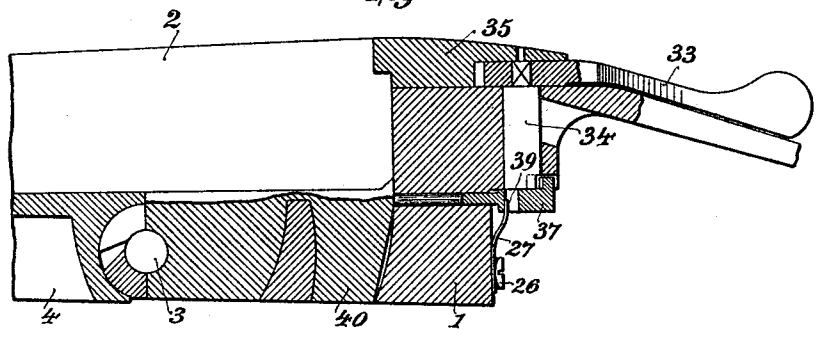


Fig.4.

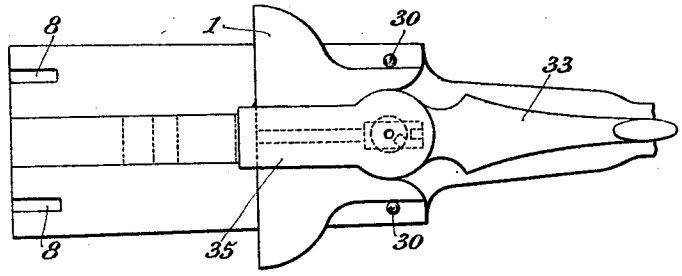


Fig.5.

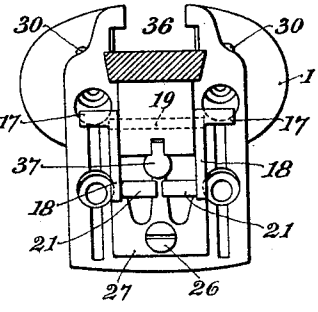


Fig.6.

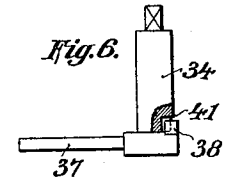


Fig.10. *Fig.11.*

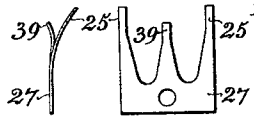
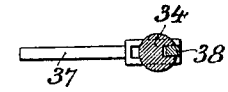


Fig.7.



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UNITED STATES PATENT OFFICE.

BRUNO CLARUS, OF LIEGE, BELGIUM.

BREECH MECHANISM OF GUNS.

1,143,612. Specification of Letters Patent. Patented June 22, 1915.

Application filed October 12, 1911. Serial No. 654,369.

To all whom it may concern:

Be it known that I, BRUNO CLARUS, engineer, a subject of the German Emperor, residing at 20 Rue des Armuriers, Liege, in the Kingdom of Belgium, have invented certain new and useful Improvements Relating to the Breech Mechanism of Guns, of which the following is a full, clear, and exact description.

The present invention relates to an improved mechanism for hammerless guns which is easy to manufacture while its fitting and adjustment do not demand special skilled workmen.

An embodiment of the invention is illustrated by way of example in the accompanying drawing in which: Figure 1 is a longitudinal section through the breech frame, showing the mechanism in uncocked condition, as after firing. Fig. 2 is a similar longitudinal section with the percussion bolt cocked and barrels rocked. Fig. 3 shows a central vertical and longitudinal section through the breech frame and barrel lock. Fig. 4 is a plan of the breech frame and barrel lock, the barrel being removed. Fig. 5 is a rear elevation of the frame and breech mechanism with the stock removed, the tang being shown in section. Fig. 6 illustrates the pivot of the barrel lock with the locking plate. Fig. 7 is a horizontal section through the pivot of the barrel lock, showing the locking plate in plan view. Figs. 8 and 9 show the percussion bolts employed in the present mechanism. Fig. 8 is a percussion bolt for guns of 16 caliber. Fig. 9 shows a percussion bolt for guns of 12 caliber. Figs. 10 and 11 show the spring employed in this mechanism which consists of three arms, of which the two outer act upon the sears while the middle arm actuates the locking plate of the breech bolt.

The breech frame 1 carries the barrel or barrels 2 which are able to rock around the pivot 3 in the known manner. In the fore stock iron 4 two recesses 5 are provided in the known manner and in these recesses the cocking lever 7 fixed to the breech frame 1 by means of the pivots 6 engage. These cocking levers 7 are arranged in the recesses 8 in the breech frame 1 and are also able to rotate freely about their pivots 6. Their noses 9 are in contact with the upper faces of the fore stock iron 4 while their noses 10 bear against the nut 11 of the percussion mechanism. The case illustrated is that of a double-barreled gun but obviously the mechanism shown can also be employed for a gun with a single barrel. When the breech is opened by rocking the barrel or barrels 2 the cocking lever 7 presses the nut 11 rearward in rotating about its pivot 6. As this nut is screwed onto the rod 12 which is connected with the lever 14 rotatable upon the pivot 13 in the breech frame 1 the rocking of the barrels operates the percussion bolt lever 14. This causes the upper part of the lever 14 which engages in a recess 15 in the percussion bolt 16 to press the latter rearward where it is held by the nose 17 of the sear 18 which is rotatably mounted on the pivot 19 fixed to the breech frame 1. The sear 18 comprises an arm 20 carrying a pin 21 on which the arm 22 of the trigger 23 acts in the known manner. When the trigger 23 is pressed the sear 18 rotates about its pivot 19 and releases the percussion bolt 16 which then under the influence of the spring strikes vigorously against the cap of the cartridge inserted in the cartridge chamber of the barrel.

The spring 24 surrounds the rod 12 and bears against the breech frame 1 and against the nut 11. Owing to this arrangement as a whole the breech frame is only slightly recessed.

Fig. 2 shows that the percussion mechanism can only act when the breech is closed as otherwise the cocking lever 7 would prevent the rod 12 from moving forward. The sears 18 are constantly pressed upward by the arms 25 of the spring 27 fixed by means of the screw 26 to the breech frame 1. The percussion bolt 16 comprises a notch 28 in which the nose 17 of the sear 18 is able to engage; it also comprises on its upper side an inclined face 29. These faces are of such a length that the device 30 indicating whether the firearm is cocked constantly bears on them thereby rendering holding screws unnecessary. The alteration in the position of this indicator is effected by the inclined face 29. The indicators are constituted by small studs 30 which when the percussion mechanism is cocked project slightly from the breech frame 1 but disappear when the shot has been fired. A small spring 31 constantly presses the indicator downward and holds it in contact with the inclined face 29 of the corresponding percussion bolt 16. In order to simplify the tools which are necessary for the mechanical

manufacture of this improved hammerless gun in different calibers a single type of breech frame is employed for calibers 12 and 16. In order to meet the circumstance that the axes of the barrels of caliber 16 are located closer together than the axes of the barrels of caliber 12 it is only necessary to alter the points of the percussion bolts to enable the breech frame to be employed for both calibers. As shown in Figs. 8 and 9 the points 32 of the percussion bolts for caliber 12 are eccentric in order to arrange them at the interval which separates the axes of the barrels of this caliber 12. The breech mechanism employed can be of any suitable type; the type illustrated is actuated by means of a lever 33. The lever 33 with which the pivot 34 rotates, displaces a bolt 35 which is adapted to slide into a groove 36 provided in the face of the breech frame 1. When the breech is closed the bolt 35 engages in a recess formed between the two barrels as shown in Figs. 3 and 4.

The arrangement illustrated in Figs. 6 and 7 has for its object to prevent the lever 33 from moving into the closed position under the influence of its spring when the breech has been opened. This device which consists of a slide 37 with a claw 38 is arranged in a hole provided in the breech frame 1. The middle arm 39 of the spring 27 always presses this slide forward and holds it in contact with the barrel lug 40. The pivot 34 is provided with a recess or groove 41 in which the claw 38 of the slide 37 engages as soon as the barrel lug 40 comes out of contact with the front end of the slide 37, that is to say when the breech has been opened by rocking the barrels. On closing the breech the barrel lug 40 forces the slide 37 rearward so that the claw 38 leaves the groove 41 in the pivot 34 and the bolt 35 is able to move forward.

The present mechanism comprises but few parts and is exceedingly simple whereby its manufacture is facilitated. The breech frame 1 (which is the most important part of a sporting gun) is particularly simple; for fitting the percussion mechanism it is only necessary to bore a hole through the breech action for the rod 12 and its spring 24 and also to cut the grooves for the cocking lever 7 the percussion bolt lever 14 and the sears 18. This does not in any way weaken the breech frame 1 as has been the case heretofore. The employment of cartridges with a large charge of powder necessitates the use of guns of good construction and the manufacturer must direct his especial attention to the strength of the breech frame which constitutes the most important part of a sporting gun.

What I claim and desire to secure by Letters Patent of the United States is:

1. A hammerless gun comprising a barrel, a pivotally mounted cocking member actuated during the rocking of the barrel, a spring-controlled rod actuated by said cocking member, a percussion lever connected to said rod, a percussion bolt formed with a recess adapted to be engaged by said percussion lever so as to move said percussion bolt rearwardly, and also formed with a slot, and a sear adapted to engage said slot to hold the percussion bolt in its cocked position.

2. A hammerless gun comprising a breech, a stock-iron, a cocking member pivotally mounted in the stock-iron and actuated during the opening of the breech, a breech frame, a rod passing through a recess formed in said frame, an adjustable nut on one end of said rod adapted to be engaged by said cocking member to move said rod longitudinally, a spring surrounding said rod arranged between said nut and said breech frame, a percussion lever pivoted to the other end of said rod, a percussion bolt formed with a recess adapted to be engaged by said percussion lever so as to move said bolt rearwardly on the opening of the breech, a sear, a lug on said sear adapted to engage a slot formed in the percussion bolt so as to hold said bolt in its cocked position, and a trigger adapted to actuate said sear to disengage said lug from said slot so as to allow the percussion bolt to move forward rapidly under the action of said spring.

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

BRUNO CLARUS.

Witnesses:
L. A. LEELER,
A. F. CRUGER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."