

(No Model.)

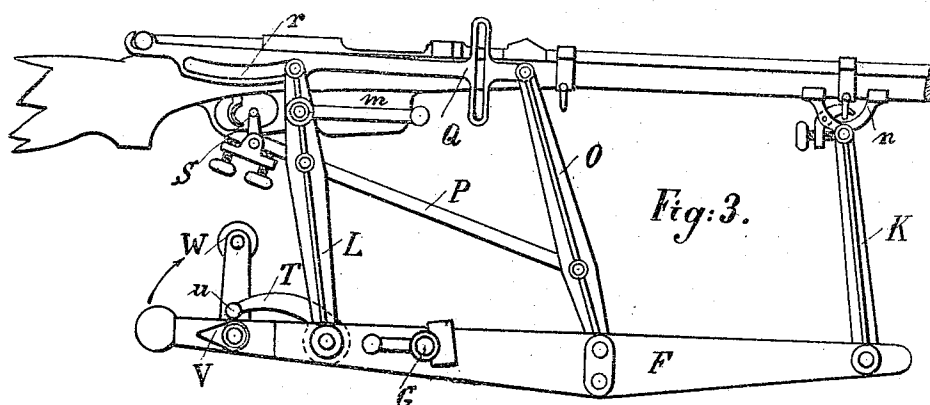
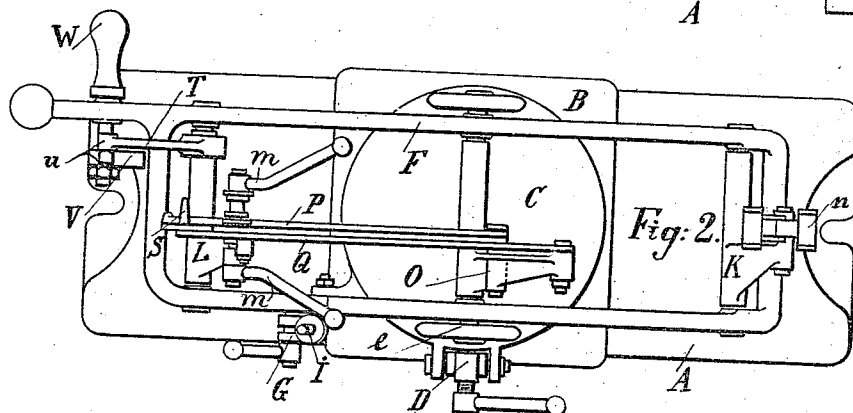
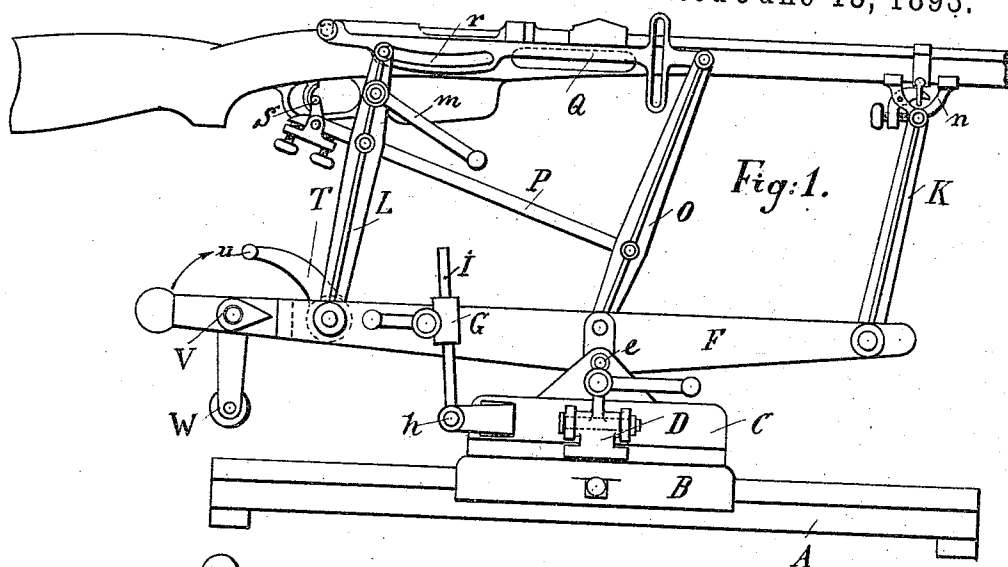
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H. BORCHARDT.

AUTOMATIC RECOIL REST FOR BREECH LOADING GUNS.

No. 499,315.

Patented June 13, 1893.



WITNESSES:

Fred White

M. J. Power

INVENTOR:

Hugo Borchardt,

By his Attorneys

Arthur C. Fraser & Co.

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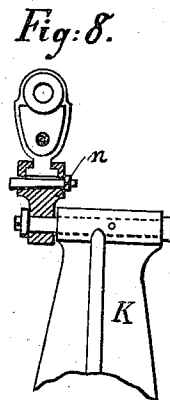
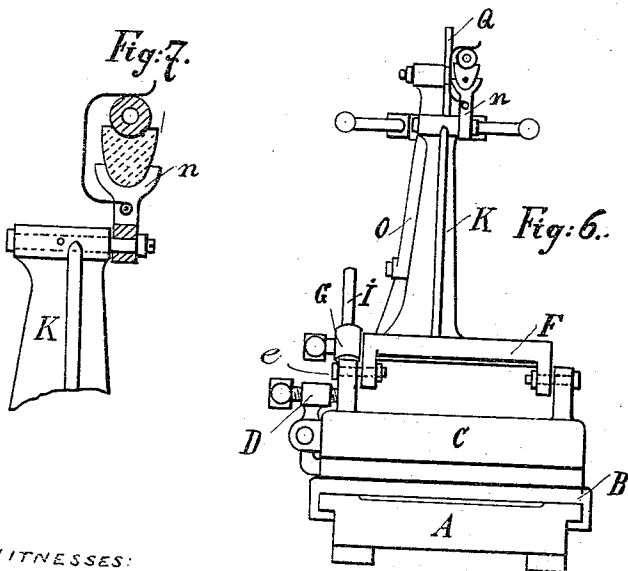
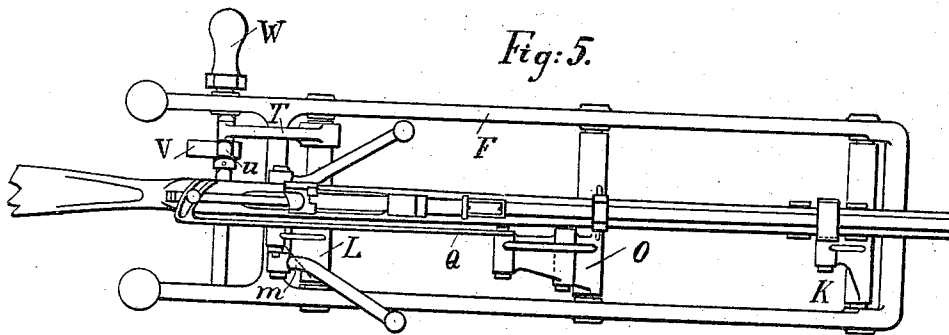
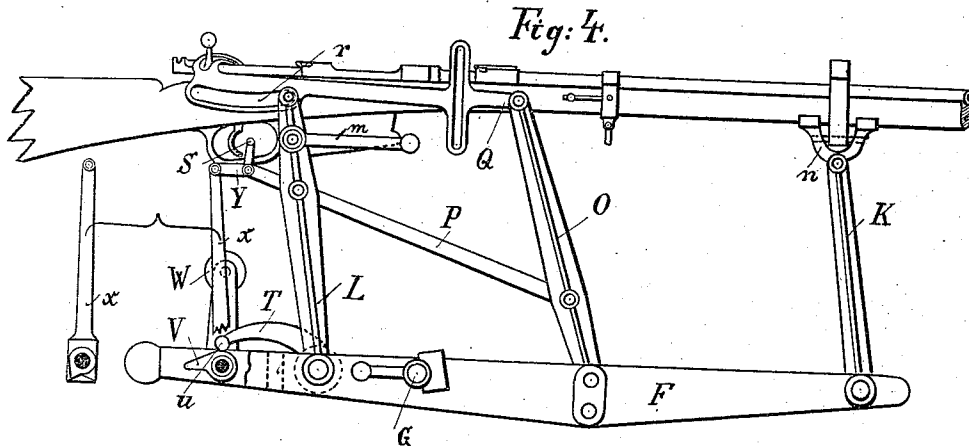
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UNITED STATES PATENT OFFICE.

HUGO BORCHARDT, OF BERLIN, GERMANY.

AUTOMATIC RECOIL-REST FOR BREECH-LOADING GUNS.

SPECIFICATION forming part of Letters Patent No. 499,315, dated June 13, 1893.

Application filed January 5, 1893. Serial No. 457,329. (No model.)

To all whom it may concern:

Be it known that I, HUGO BORCHARDT, a citizen of the United States of America, at present residing in the city of Berlin, in the Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in Automatic Shooting-Rests for Breech-Loading Firearms, of which the following is a specification.

10 This invention relates to shooting rests or gun carriages for holding fire arms.

The object of the invention is to provide a shooting rest or gun carriage upon which a breech loading small arm can be fixed in such 15 manner that the recoil of the arm when fired operates to effect the opening of the breech mechanism of the arm through mechanism carried by the rest, whereby the arm is placed in condition for reloading, while the replacing of said mechanism into its first position 20 causes the closing of the breech mechanism and the firing of the arm.

According to this invention the recoil of the arm is used preferably only for opening the 25 breech, for which purpose the force of the recoil is sufficient even with very small caliber arms, while the replacing of the arm into its former position, the closing of the breech mechanism, and the firing, is done by hand. 30 A very rapid and well aimed fire can be obtained in this way even with single loading breech loaders. The rapidity of the fire is much greater with the so called magazine guns or repeating rifles.

35 This invention is best adapted for a defense behind temporary fortifications, but it may be used also in the open fields or under other conditions. The gun rests or carriages are provided with stationary or transportable understructures according to the use for which 40 they are intended.

I will now describe certain adaptations of the invention with reference to the accompanying drawings which represent the rest or 45 carriage on a stationary understructure, and in which—

Figure 1 is a side elevation of a gun rest constructed according to my invention, carrying a Mannlicher gun, or one in which the cylindrical bolt moves only in a straight line, 50 the rest being in the closed or firing position. Fig. 2 is a plan view thereof, with the gun re-

moved. Fig. 3 is a side elevation corresponding to Fig. 1 showing the parts in the opened position. Fig. 4 is a view corresponding to 55 Fig. 3 showing a modified construction of rest in the opened position adapted for and carrying a Mauser gun, or one in which the cylindrical bolt has a combined motion, both oscillatory and reciprocatory. Fig. 5 is a plan 60 view thereof. Fig. 6 is a front elevation of the rest shown in Fig. 1. Fig. 7 is a fragmentary sectional view on a larger scale showing a modified form of fastening for the muzzle end of the gun, and Fig. 8 is a similar view 65 showing another modified form of fastening.

Referring to the drawings, the gun rest or carriage will now be described. The stationary under-structure, seen in Figs. 1, 2 and 6, consists of a bed A upon which a slide B is 70 movably mounted and can be shifted to and fro and fixed at any place. Upon this slide is revolvably mounted a turn table C, which supports the frame F, which latter swings upon trunnions *e* fixed to the turn-table. Any 75 suitably adjustable fastening for controlling the position of the frame F relatively to the table C can be used. The fastening shown consists of the bar *i*, jointed at *h* to the table C and sliding through a clamp G joined to 80 the frame F, whereby by loosening the frame G the frame can be tilted on its trunnions, and by tightening the clamp it can be locked in position. Any method of arresting the turn-table C may be used, as for example the 85 screw brake D, carried by the table and acting to lock the latter to the slide B.

Between the side bars of the frame F, near its opposite ends, two swinging arms K and L are placed, the former at front and the latter 90 at rear, and to the upper ends of these arms are suitably fixed the devices by which the gun is secured to the rest or carriage. Between these two swinging arms a third arm O pivoted to the frame F is provided, which arm 95 O is connected by a spring rod Q at its upper and free end with the bolt handle of the gun. An oblique bar P connects the lower part of the arm O with the upper part of the rear swinging arm L in such manner that the motion 100 of the latter will be transmitted to give an enlarged and accelerated motion to the swinging arm O at its upper end, whereby the upper end of the arm O swings simultane-

ously with the swing of the arm L, but much more rapidly and to a greater extent.

To the rear of the swinging arm L is fixed the lever arm T, carrying a friction roller *u*, which is actuated by a cam V on a shaft traversing the frame F, which shaft is rotated by means of a hand crank W. The lever arm T and the cam V are of such relative dimensions that when the breech is opened as in Fig. 3 the roller *u* is ineffective, resting above the cylindrical part of the cam, and when the crank W is turned the cam V acts against the roller *u* and lifts the lever arm T sufficiently to advance the swinging arm L, and with it the gun, into its forward position, that seen in Fig. 1.

The devices for securing the gun to the rest, and the mechanism, for opening, closing and firing the gun, must be varied according to the construction of the latter, but they should accomplish the following: When the gun is moved backward they should open the bolt and push it into its extreme backward position, and when it is moved forward they should close the breech and place the gun in position for firing, and preferably operate the trigger to fire it. In the construction shown the spring rod Q when moved backward will open the bolt and push it into its extreme backward position, and when moved forward will draw the bolt forward and close the breech, thus making the gun ready for firing. The pulling of the trigger and the firing of the gun may be accomplished by any suitable device. In the construction shown this is accomplished by that portion of the oblique bar P which protrudes at the rear of the arm L.

In Figs. 1, 2, 3 and 6 a gun in which the bolt moves in a straight line only is shown in the rest. The front arm K in this construction carries a swinging furcated block *n* between the prongs of which the usual strap swivel of the gun fits. A bell crank hook engages the usual loop of this strap at one end, is pivoted to the block, and carries a thumb screw at its other end, by adjusting which screw the bell crank is caused to hold the muzzle end of the gun in firm engagement with the block. The butt end of the gun is placed with the portion between the trigger guard and the magazine box over a clamping bolt *m* turning in a socket in the swinging arm L, and this end of the gun is then clamped to the arm L by adjusting this clamping bolt *m* against it. The spring rod Q, joined to the swinging end of the swinging arm O is guided by means of a slot *r* embracing a stud secured to the upper part of the swinging arm L. This rod Q is forked at its rear end, and this fork fits loosely over the bolt handle and works the same. The finger S, carried on a crank lever supported by the oblique bar P to be adjustable relatively thereto, is adjusted, preferably by a suitably arranged set screw, to bring it into position to gage and operate the trigger of the gun at the proper time for firing.

In operation, after proper aiming by regu-

lating and fixing the turn-table C and frame F, and after placing a charge or package of cartridges in the magazine of the gun, the firing can begin. Assuming the gun and its rest to be in the open position shown in Fig. 3, the crank W is turned quickly in the direction of the arrow, see Figs. 1 and 3, whereupon the cam V acting against the roller *u* tilts the lever T, thereby swinging the three swinging arms L, O and K forward, the motion being transmitted through the gun itself from the arm L to the arm K, and through the oblique bar P to the arm O to move the latter more rapidly than the arm L. The spring rod Q travels forward with the arm O, and in its movement draws the bolt of the gun forward, thus closing the breech. The finger S, retarded in its motion relatively to the other parts engages and pulls the trigger of the gun as the latter reaches the forward position, thereby firing the gun. The recoil throws the fire arm back to the position shown in Fig. 3, and in moving to this position the bolt is opened by the rearward movement of the spring rod Q. The fire arm remains in the open state, and the gun rest in the open position, until a second rotation of the crank W repeats the operation described. The closing of the breech and the firing are executed by the turning of the crank, the speed of rotation of which is at the will of the operator. The opening of the breech is effected automatically by the recoil.

In Figs. 4, 5 and 7 a gun, as the Mauser gun, which has a combined motion, or both oscillatory and reciprocatory motion is shown in the rest.

Fig. 7 shows the means for fastening the muzzle end of the gun used in this instance, which consists of a curved leaf spring pivoted at one end to the block *n* and embracing the top of the barrel of the gun at its other end to press it against the block. In the construction shown in these figures the forked end of the spring rod Q is constructed as a spirally curved groove engaging the handle of the bolt and disposed so as to turn the handle and thereby oscillate the bolt at the initial portion of its back stroke and until the bolt handle is turned upward, whereupon the spring rod Q during the remainder of the back stroke slides the bolt back to the open position, and on returning it first slides the bolt to the closed position and then turns its handle down. In Figs. 4 and 5 the bolt and the gun rest are shown in the open position.

Fig. 4 shows a modified arrangement for pulling the trigger of the gun. In this construction a rod *x* is employed, which rod is carried on its lower end by a pivotal connection with the frame, and is actuated at this end by a cam upon the crank shaft, whereby it is swung by such cam. At its upper end it is fastened to a bell crank Y which carries the finger S for engaging the trigger. The bell crank Y is fulcrumed to the rear end of the oblique bar P, whereby when the apparatus

moves to the forward position and the rod x is simultaneously actuated, the bell crank Y is tilted to bring its finger S against the trigger, thereby firing the gun.

5 Fig. 8 shows a further modification of the device for securing the gun to the forward swinging arm K . In this construction the block n pivoted to the arm is constructed with an overhanging groove, into which groove the
10 bayonet stud on the under side of the top band of the gun passes, whereupon the parts are clamped together by a screw wedge carried in the block n and acting against said stud.
15 It will be seen that my invention provides a simple and effective gun rest or carriage which is automatic in operation and can be variously availed of.

It will be understood that the invention may be availed of in many different forms
20 and with other structural details than those shown and described without departing from the essential features of the invention. For example the gun instead of being placed upon swinging arms may be carried by any well
25 known substitute therefor, as a sliding support. The means for adjusting the rest in both directions can be variously modified. All such changes will be dictated by circumstances or the judgment of those skilled in
30 the art, and do not alter the characteristic features of the invention.

What I claim is, in gun rests or carriages, the following-defined novel features and combinations, substantially as hereinbefore set
35 forth, namely:

1. An automatic shooting rest for breech loading small arms, adjustable in all directions and consisting of a movable support for the arm moving rearwardly under the recoil
40 thereof, and a bolt-shifter connected to said support and actuated during its said move-

ment to open the breech of the arm, and a trigger-finger connected to said support and actuated by the forward movement thereof to fire the gun, substantially as and for the
45 purpose set forth.

2. An automatic shooting rest for breech loading small arms, consisting of a movable support carrying the arm, a bolt shifter connected to and actuated by the movement of
50 said support to move the bolt, and a trigger finger connected to and actuated by the movement of said support to operate the trigger to fire the gun, substantially as and for the purpose set forth.

3. In a shooting rest for breech loading small arms, a movable support carrying the arm, a bolt shifter carried by said support and actuated when the latter is moved to the closed
55 position to close the bolt of the gun, and a trigger-finger carried by said support and actuated when the latter is moved to the closed position to fire the arm, and a hand operated cam engaging said support, for moving it to
60 the closed position, whereby when said cam is operated the breech is closed and the gun fired, substantially as and for the purpose set forth.

4. In a shooting rest for breech loading small arms, a support carrying the arm, in
70 combination with an adjustable trigger finger carried by said support for operating the trigger of the arm and mechanism, for actuating said trigger finger, substantially as and for the purpose set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing
75 witnesses.

HUGO BORCHARDT.

Witnesses:

W. H. EDWARDS,
W. HAUPT.