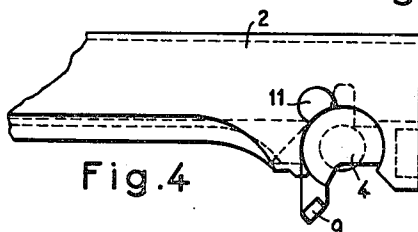
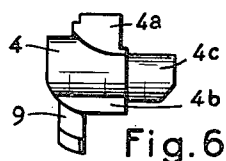
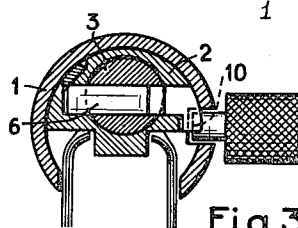
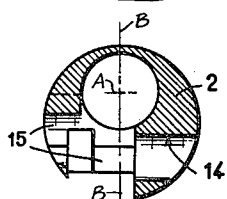
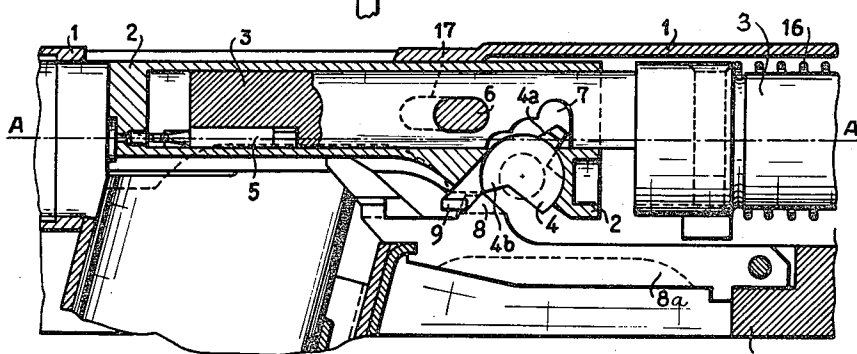
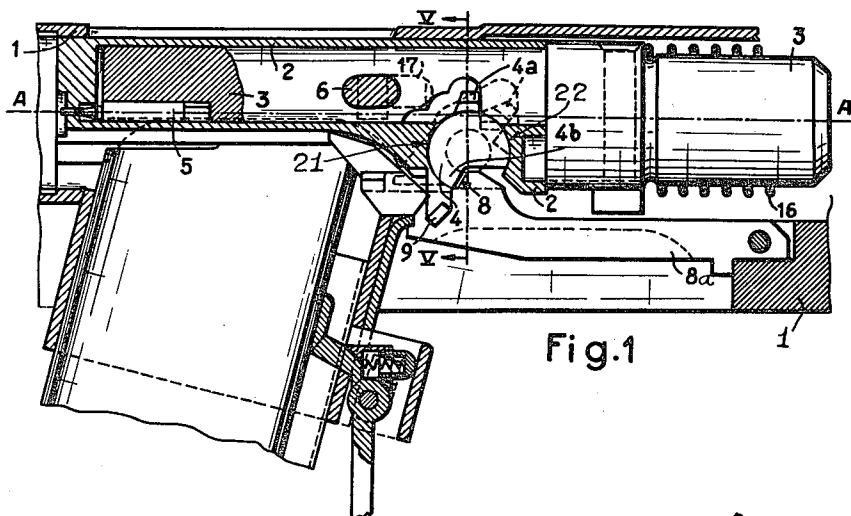


April 17, 1956

P. DE KIRALY
AUTOMATIC FIREARM
Filed June 6, 1950

2,741,951



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2,741,951

AUTOMATIC FIREARM

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Application June 6, 1950, Serial No. 166,454

Claims priority, application Switzerland June 11, 1949

1 Claim. (Cl. 89—194)

This invention relates to automatic fire-arms and refers more particularly to a fire-arm with a non-bolted breech comprising a breechblock and a striker, which are connected by a retarding lever, the working method of which is already known.

It is one object of the present invention to provide an improved and simplified constructional form of the breech.

The invention has for another object to construct the two-armed retarding lever so that its transmission ratio can be substantially increased and that the pressure of the breechblock, due to the pressure of the powder gases, is chiefly transmitted in the barrel axis to the said retarding lever.

With these as well as other objects in view, the automatic fire-arm according to the present invention comprises a two-armed retarding lever made in one piece with its control pivot pin, for increasing the lever transmission ratio, the body of said lever being supported centrally in a transverse bore or bearing of the breech and securely guided in every direction.

The required improvements are thus made possible by a more suitable form, dimension and arrangement of the breech parts.

A constructional form of the fire-arm according to the invention is illustrated by way of example in the accompanying drawing, in which:

Figure 1 is a longitudinal section through the closed breech which is shown in the moment of firing;

Figure 2, a longitudinal section through the partly opened breech mechanism, at a short time after firing;

Figure 3, a cross-section through the transverse cotter;

Figure 4, a side elevation of the breech block with the retarding lever;

Figure 5, a cross section of the breech through the lever bearing along line V—V of Figure 1, and

Figure 6, an elevational rear view of the retarding lever.

The breech, the general form of which is cylindrical, is supported so as to be movable in the casing 1. Guided partly in the breech 2 and partly in the casing 1 is a striker 3 which is connected with the breech 2 by the retarding lever 4. The latter, a two-armed lever, is supported by its pivot pin 4c in a lateral bore or bearing 14 of the breech block 2. Its upper arm 4a is in contact with the rearward surface of a milled out place 7 intermediate the length of the striker 3. The contacting area of place 7 forms an axial abutment, quite near the barrel axis AA. The lower arm 4b of the retarding lever stands, when the breech is closed, before a shoulder 8 of an arm 8a which is connected rigidly with the casing 1. On the breech being forced back by the cartridge case under the pressure of the powder gases, the lower arm of the retarding lever strikes against the shoulder 8 acting as a cam and is rocked in the clockwise sense, so that the upper lever arm 4a forces the striker back by a certain distance relatively to the breech. This produces a resis-

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tence to the backward motion of the breech. The amount of this resistance is determined by the lever transmission ratio and by the amount of the weight of the striker 3 and is selected in accordance with the force of the cartridge used in the fire-arm.

In its new constructional form the retarding lever 4 is made in one piece with its pivot pin 4c. Its middle part itself is cylindrical and is supported centrally in a corresponding recess 15 in the breech in such a manner that the pressure of the breech block 2 is chiefly transmitted in the barrel axis AA to the retarding lever. By this means eccentric impacts on the breech and on the retarding lever are avoided.

Retarding lever 4 is chiefly guided by two coaxial bearing surfaces 21 and 22, shaped as opposite portions of a same hollow cylinder. Consequently there is practically no shearing action on any part of the retarding lever. The bearing surfaces 21 and 22 meet the vertical plane of symmetry B—B passing through the barrel axis A—A (Fig. 5), so that any notable lateral breaking strain on the breech block is avoided.

The arrangement, by which the retarding lever 4 is made in one piece with its pivot pin, makes possible a considerable increase in the transmission ratio of the lever, in so far as this is required by the force of the cartridge.

The transmission ratio of the lever, that is the ratio of the lengths of the two lever arms 4a and 4b, is mainly altered by the cam or shoulder 8 projecting to a greater or less extent into the lower part of the retarding lever 4.

When the retarding lever 4 has been sufficiently turned its lower arm can slide over the shoulder 8. The breech 2 and the striker 3 will then run back together in a straight line in the casing 1.

During the backward and forward motion of the breech the retarding lever 4 is held in its rocked position, in order that the lower arm of the retarding lever 4 will be able during the forward motion of the breech to slide again over the shoulder 8.

During the backward and forward motion of the breech the retarding lever 4 must be held in its backwardly rocked position. This is effected by means of a wing 9 which is provided on one side of the lever 4 and, sliding in the rocked position of the lever on the inner surface of the casing 1, prevents a forward turning motion of the lever 4, until the lower arm of the latter has passed the shoulder 8.

The motion of the striker 3 relative to the breech block 2 is limited by a transverse cotter 6 which, supported in the striker, moves in corresponding slots 17 of the breech block 2 by the requisite amount. On one side a head 10 of the transverse cotter 6 projects into the path of a tooth of the side handle, so that, on the latter being actuated, the striker and consequently also the breech are drawn back.

A closing spring 16 provided in the casing behind the breech in the usual manner acts directly on the striker.

At the forward end of the striker 3 an ignition pin 5 is supported in a T-shaped recess of the striker so as to be easily removable.

The functioning of such a breech action is already well known in various constructional forms and need not be more particularly described.

The novel and peculiar features of the arrangement according to the present invention are the construction and manner of mounting of the retarding lever, the transverse cotter and the ignition pin.

According to the novel constructional form the breech block is in general locked in its entire length in such a manner that the pressure of the cartridge case transmitted through the retarding lever and the recoil of the thrown back striker, produced each time the fire-arm is fired,

are taken up in a very advantageous manner, without any danger of the breech block being fractured.

The arrangement of the breech block 2 is shown in detail in Figures 1 to 5. A cylindrical bore in the upper part of the breech block serves the purpose of receiving and guiding the forward part of the striker 3, the forward end of which supports the ignition pin 5.

Below this longitudinal bore in the breech block 2 there is provided in the rear part of the same a bore in the transverse direction (Figure 5). This bore has two different diameters. In the part of the bore of greater diameter 15 is the body 4 of the retarding lever. Here the pressure of the breech is taken over, thus avoiding any eccentric power transmission. The lever body of increased diameter enables the retarding lever to take up great pressures. The peculiar form of the retarding lever makes it possible to use a very short lower arm, that is a greater leverage. In this way the lever breech in this constructional form can be adopted for cartridges as well, which are far more powerful than the most powerful pistol cartridges at present in use.

The transverse cotter 6 may project out of one side of the casing and act both as a straight guide for the breech and as a handle.

The retarding lever 4 is pushed from one side into its bearing in the breech 2, in a position which does not occur, while the breech is in action. For this purpose there is provided at the rear part of the breech an aperture 11 (Figure 4) which opens into the bearing of the retarding lever. The retarding lever, when turned over slightly forward, can thus easily be pushed into or out of its bearing.

As long as the breech is in the casing, one of the lateral walls of the casing will prevent the retarding lever leaving its bearing. The principle of the breech mechanism remains unaltered, whether the breech is of cylindrical or prismatic form and whether the retarding lever is mounted horizontally, vertically or in an inclined position.

What I claim as my invention is:

An automatic fire-arm comprising a fixed barrel having at its rear part a longitudinal casing carrying a stationary abutment, a breech provided with an axial bore, slidable in said casing, a slidable striker guided in said axial bore and in said rear casing, said breech being provided with a transversal recess limited by partly cylindrical walls, said recess being connected to a lateral cylindrical step bearing arranged coaxially with respect to said cylindrical walls, a rocking lever made of one piece comprising a main cylindrical body fitted in said recess and a single lateral trunnion carried by said bearing, said lever also comprising at least an upper arm and a much shorter, lower arm adapted to engage said stationary abutment to rock said lever, whereby the upper arm of said lever accelerates said striker in a rearward direction during the recoil movement of the breech, said breech further being provided with a notch connected to said recess and in opposite relationship to said step bearing said notch being adapted to constitute a crosswise arranged, releasing passage for said upper arm of said rocking lever in an angular position of the latter beyond its normal rocking range, for the purpose of enabling an easy withdrawal of the whole rocking lever from said recess and said bearing after the breech and the striker have been removed from said casing as a unit.

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