May 22, 1945. W. ROSSMANITH 2,376,726

AUTOMATIC SHOULDER FIRE-ARM ADAPTED TO BE USED IN CARRIAGES

Filed Oct. 22, 1940

Fig. 1

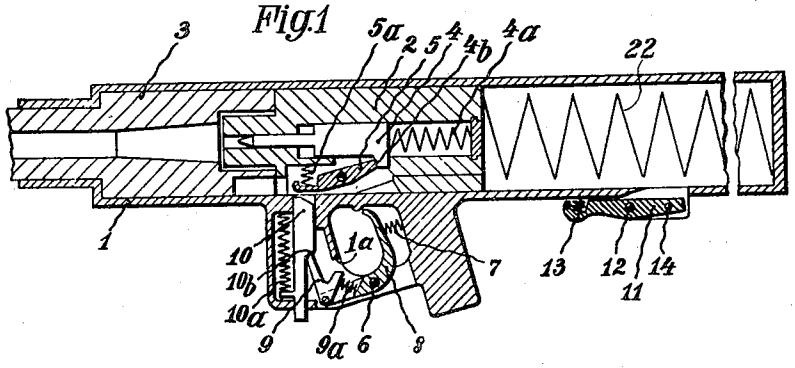


Fig. 2

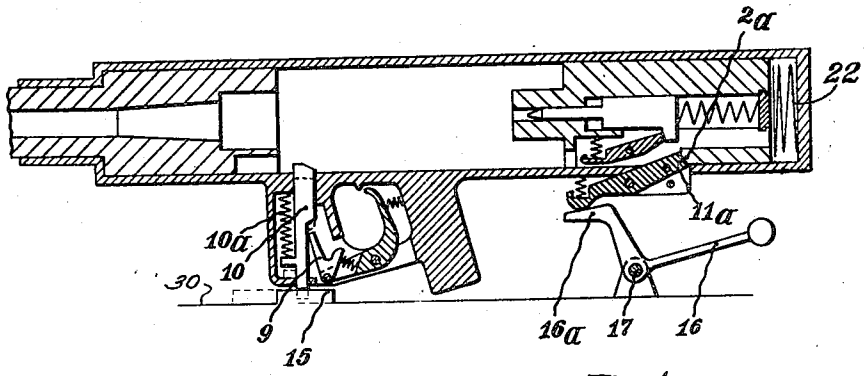


Fig. 3

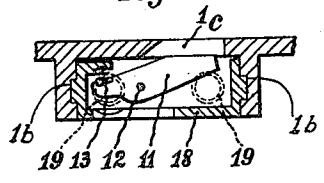


Fig. 4

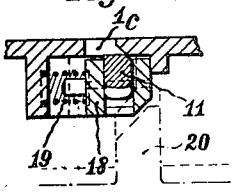
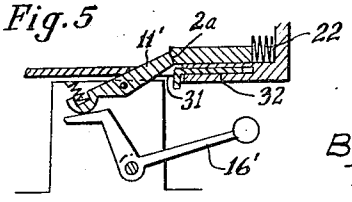


Fig. 5



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AUTOMATIC SHOULDER FIREARM ADAPTED TO BE USED IN A CARRIAGE

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Application October 22, 1940, Serial No. 362,261
In Germany November 8, 1938

1 Claim. (Cl. 89—27)

In automatic fire-arms with trigger device acting upon the striker of the closed breech, the inconvenience exists, that when the fire is interrupted a cartridge is still in the barrel and unintentionally might be fired in the barrel which has become hot by the previous firing of the cartridges. For this reason it has already been proposed to provide a catching device adapted to catch and stop the breech block in the rear extreme position. This breech catch is held during the firing in disengaged position and, when it is intended to stop the firing, released so that it can engage and lock the breech block returning into its open position.

Trigger devices acting upon the striker have the advantage to ensure for single firing that the fire-arm is steadily held in the aiming position. In the continuously firing arms, however, the breech rapidly moves forward as striking device from the rear cocked position. As soon as the breech block reaches the locking position the shot is fired and by the forward movement of the masses of the breech block in conjunction with the shock occurring when they are stopped the aimed single shot is disturbed.

Heretofore a transformation arrangement has been provided which admits of adjusting the trigger mechanism of the fire-arm to single or continuous firing and to make the same act as striking device in the first instance upon the striker and in the second instance upon the breech block. It has also already been proposed to arrange on the fire-arm two independent triggers of which one acts upon a catch for the cocked striker and the other upon a catch for the cocked breech block.

The invention relates to the different possible firing procedures of such fire-arms in relation to their object of use and employment, now as independent shoulder arm and then in a carriage. At the same time an adjustment of the arm from single-firing to continuous firing can be effected. In this manner it is possible for instance to employ the well known large-calibre tank gun, which from the shoulder and placed in a fork-shaped support fires single shots, or as a machine-gun in a carriage for aircraft defence.

By this invention the actual manner of firing is thus automatically imparted to those fire-arms, which are capable of carrying out different kinds of firing corresponding to their employment as shoulder arm or mounted in a carriage. Errors in the adjustment are excluded and the soldier himself need not trouble himself about carrying out the adjustment. The holding and trigger arrangements for the striker and breech block of the fire-arm may be made and constructed as desired. Of the known types of fire-arms those with two triggers independent the one from the other and also such which have only one trigger with transforming mechanism are suitable herefor.

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

Fig. 1 is a longitudinal section of a fire-arm in the operative position of the trigger arrangement destined for use as shoulder arm, the breech being closed,

Fig. 2 is a view similar to Fig. 1 showing the fire-arm used as mounted on a carriage, the breech being in the open position,

Figs. 3 and 4 are views, the one in longitudinal section and the other in cross-section, of a suitable special construction of a part-arrangement,

Fig. 5 is a detail sectional view partly in elevation showing a modified form of breech catch actuating means.

In the casing 1 of the fire-arm the breech block 2 is guided at firing in known manner so that, when unbolted from the barrel 3, it can recoil in opposition to a closing spring 22. During the recoil movement the striker 4, mounted in the breech block 2 so that it can move in longitudinal direction and controlled by a firing spring 4a, is cocked by well-known means (not shown). A sear 5 biased by a spring 5a and oscillatably mounted in the breech block 2 engages in front of a nose 4b of the cocked striker 4, said trigger pawl 5 being adapted to be disengaged by a trigger device for firing a single shot.

In the present case the trigger device consists of a trigger tongue 8 oscillatable about a pin 6 in the trigger guard in opposition to a return spring 7. A catch pawl 9 consisting of an elbow lever is pivotally mounted on said trigger tongue and one arm of this elbow lever is pressed by a spring 9a against a trigger rod 10 controlled by a spring 10a. One arm of the catch pawl 9 cooperates with a shoulder 10b of the trigger rod 10 and pushes this trigger rod upwards into the firing position when the trigger tongue 8 is pulled back. The sear 5 is thus brought out of the position in which it catches the cocked striker 4. When this position has been reached, the second arm of the elbow lever 9 abuts against a face 1a of the trigger guard. When the trigger movement continues, the arm of the elbow lever acting upon the trigger rod 10 slips off the shoulder 10b of the trigger rod and this rod can return into the

initial position under the pressure of its spring 10a. To again fire a shot the tongue 8 of the trigger must be released to return into the position of rest and then be pulled back. The trigger device operates therefore as single fire trigger and for the operation of the fire-arm as open-firing system.

Besides the single-firing trigger arrangement a breech catch is provided in the rear portion of the casing 1 of the fire-arm, said breech catch consisting of a catch pawl 11 for the breech block 2 oscillatable about a bolt 12 in the casing 1 and biased by a spring 13. When the fire-arm is to be used as shoulder arm for firing single shots, the catch pawl 11 for the breech block is disengaged and, as shown for instance in Figs. 1 and 2, secured in the inoperative position by an insertable pin 14 or by any other locking device adapted to be inserted by hand or automatically by a spring. A suitable construction of the last mentioned type is shown in Figs. 3 and 4. The breech catch 11 is shiftably mounted in a casing 18 in transverse guides 1b on the bottom of the fire-arm. The shiftable casing 18 is biased by springs 19 in a position in which the breech catch 11 is laterally displaced relative to the aperture 1c in the bottom of the fire-arm.

If then the fire-arm is placed into a carriage 30 as diagrammatically indicated in Fig. 2, a projection 15 on the carriage or a similar element acts for engaging the trigger rod 10 and maintaining the same in the position in which the sear 5 for the striker will be disengaged so that, when the breech block 2 moves into its extreme front position, a shot is fired. The interrupting effect of the single-firing trigger device therefore cannot occur. The controlling of the firing is then effected by the breech block catch 11, the catch face 11a of which is oscillated by the spring 13 into the path of a catch notch 2a of the breech block 2 and by pulling out the pin 14 or, in the construction according to Figs. 3 and 4, automatically and positively by a stop 20 of the carriage, this stop 20 shifting the casing 18 in lateral direction when the fire-arm is placed on the carriage, so that the breech catch 11 catches the breech block 2 in the open position as striking device of the arm. The control of the breech catch 11 for shooting can be effected by a trigger lever 16 mounted in the carriage, this lever being oscillatably mounted on a bolt 17 of the carriage and having an end 16a which disengages the breech catch 11, against the action of a spring 13, from the breech catch position when the end of its handle is depressed. As long as the trigger lever 16 of the carriage is in engagement the arm fires continuously as repetition system, but when the trigger lever is released the breech is held in the rear extreme position by the breech catch 11.

In order that in special cases single shots can also be fired with the fire-arm mounted in a carriage, the projection 15 of the carriage can be made adjustable, so that it can be pushed out of the normal position in which it acts upon the trigger rod 10 as shown in dotted lines in Fig. 2. The fire-arm can then be used by means of the trigger 8 for firing single shots.

Thus the fire-arm may be used selectively as semi-automatic firearm upon firing from the shoulder or as fully automatic firearm mounted in a carriage. Herefrom results for the different technical employment a much desired simplification of the fire-arm system. A large-calibre shoulder-arm for tank defence operating as a single-firing arm can serve, preferably by addition of a breech catch, as machine gun mounted in a carriage. As a modification of the above described embodiment, in which this breech catch is provided on the fire-arm itself, it is sometimes more practical to mount the breech catch on the carriage. The catch then engages, for the cooperation with the breech, into an opening in the fire-arm mounted on the carriage, this opening being normally closed. Thus in Fig. 5 the lever 16' and breech catch 11' are mounted on the gun carriage, the catch 11' operating through an opening 31, in the casing 1, which may be closed by a slide 32.

I claim:

In a device of the character described a gun carriage, a gun mounted thereon, said gun having a breech block casing, a breech block movable in said casing, a sear on said breech block, a trigger rod slidably mounted in said casing and movable to engage and operate said sear, a trigger adapted to move said rod, said rod extending outside said casing, and means on said carriage for holding said rod in position to operate said sear, said last named means being movable into a position out of engagement with said rod.

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