July 18, 1944. W. T. GORTON 2,353,722

GUN

Filed May 15, 1939

Fig. 1.

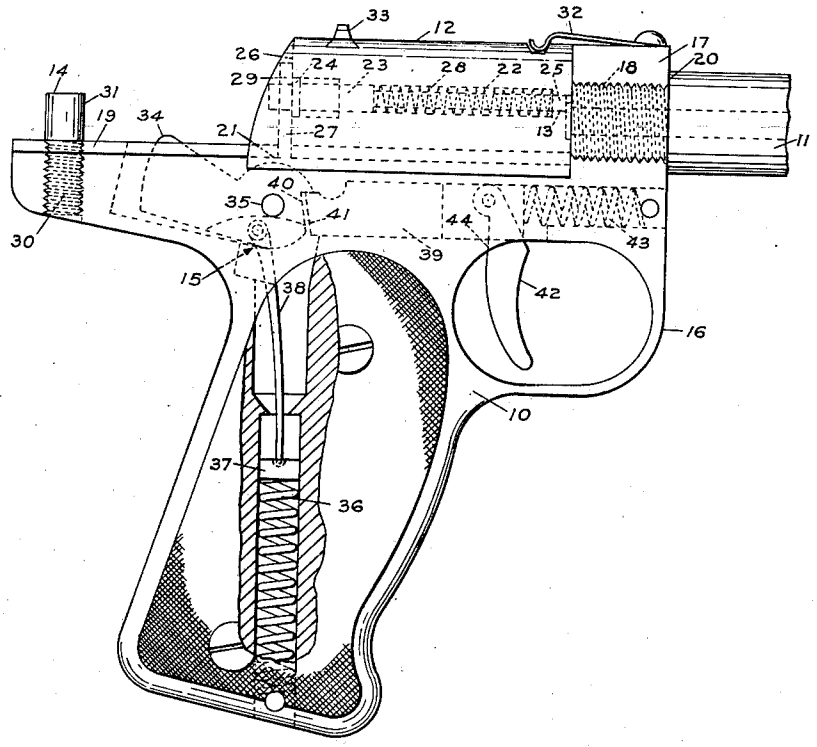
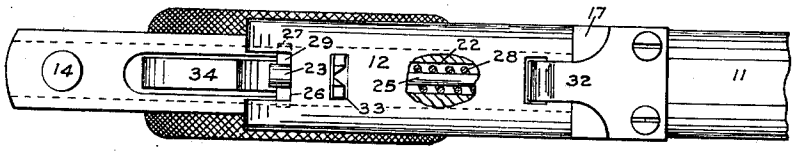


Fig. 2.



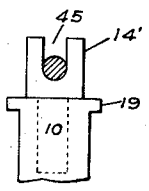


Fig. 4.

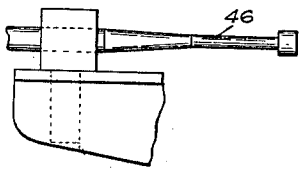


Fig. 3.

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GUN

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4 Claims. (Cl. 42—69)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

This invention relates to weapons and more particularly to firearms or guns of the single-shot breech-loading type, and it has for an object to provide an improved single shot weapon of the general character seated which will be superior in point of relative simplicity and inexpensiveness of construction in conjunction with safety and efficiency in operation.

A further object of the invention is to provide a weapon of the type stated embodying an inertia or blow-back breech block.

A still further object of the invention is to effect extraction and ejection of the empty cartridge case by means of the chamber pressure direct whereby the extractor and ejector may be eliminated and the cartridge supported about its entire surface within the chamber.

Another object of the invention is to so arrange the breech block that it will remain open after firing for subsequent manual closure after reloading of the weapon.

The specific nature of the invention as well as other objects and advantages thereof will clearly appear from a description of a preferred embodiment as shown in the accompanying drawing in which:

Fig. 1 is a fragmentary elevational view partially in section of a weapon embodying the invention.

Fig. 2 is a plan view of the structure shown in Fig. 1.

Fig. 3 is a side elevation of a cleaning rod guide adapted for use with the weapon of Fig. 1.

Fig. 4 is a rear elevation of the device shown in Fig. 3.

Referring now to the drawing by characters of reference the weapon will be seen to be comprised of a frame 10, barrel 11, breech block 12, firing pin 13, breech block buffer or stop 14 and firing mechanism generally indicated at 15.

The frame 10 may be embodied in any suitable weapon, such as a rifle, pistol, or gun of larger caliber, and is formed so as to provide a trigger guard 16 and barrel attaching lug 17. The attaching lug 17 is bored on a horizontal axis, as viewed in Fig. 1, and is threaded therethrough as indicated at 18, or otherwise suitably conformed, to engage the chamber end of the barrel 11 for attaching the latter thereto. In rear of the barrel attaching lug 17 the frame 10 terminates, as viewed in Fig. 1, in a horizontal plane, disposed below the axis of the bore in the barrel attaching lug 17 and is flanged or similarly shaped on either side, as at 19, to form slide-ways for the breech block 12.

The barrel 11 may be of any suitable caliber and design and is provided at its chambered end with a reduced portion threaded or otherwise conformed to cooperatively engage the threads 18 or other conformations made in the bore of the barrel attaching lug 17 to secure the barrel to the attaching lug in readily demountable relation relative thereto and with shoulder 20 formed by the reduced end of the barrel snugly engaging the front face of the attaching lug.

In this weapon the breech block 12 is operable on the straight blow-back principle, and is comprised of an elongated block suitably grooved or inwardly flanged adjacent both of its lower longitudinal edges, as indicated at 21, for cooperating with the slideways defined by flanges 19 to restrain the breech block to longitudinal reciprocable movement on the frame. The breech block 12 is of generally rectangular shape in cross-section with its upper longitudinal edges suitably rounded to the conformation of the barrel attaching lug 17 and to facilitate manual manipulation and is of such weight as to properly support the base of a chambered cartridge during firing and have such inertia as to be propelled in recoil by the force of explosion in firing at a predetermined and desirable velocity. As shown at 22 the breech block is longitudinally bored to floatingly house the firing pin 13 which may be formed with a striker head portion 23 provided with a collar 24 intermediate its ends and a reduced striker portion 25. The breech block 12 at its rear end is rounded on an upwardly inclined curve and is inwardly recessed at 26 in intersecting relation with the bore for the firing pin. Adjacent the firing pin bore the walls defining the recess 26 are undercut or otherwise formed at 27 to provide ways for securing a firing pin retaining element onto the breech block. At its rear end the firing pin bore is enlarged to slidably accommodate the collar 24 on the firing pin and at its front end the bore is reduced to provide bearing for the reduced striker portion 25 thereof. As shown in Fig. 1 the breech engaging end of the breech bolt is recessed to support the base of a chambered cartridge and the firing pin may project into this recess. The firing pin 13 is inserted in the bore of the breech bolt with a firing pin retracting spring 28 surrounding the reduced striker portion 25 and interposed between the

shoulder formed by the junction of the reduced striker portion with the striker head and reduced front end of the bore under slight initial compression to normally retain the collar 24 against a retaining element 29 inserted in the ways 27 with the head of the firing pin protruding a sufficient distance into the recess 26 to receive a blow from the hammer.

To limit the recoil of the breech block 12 and retain the same on the frame the removable breech block stop or buffer 14 is provided, and is secured to the frame by means of a shank 30 inserted in a cooperating recess in the frame. The buffer 14 may be cylindrical in section as shown in Fig. 1 and has a buffer surface 31 parallel with the confronting surface in the recess 26 for engaging the breech block to receive the impact of recoil. A suitable detent, which may be of the type shown at 32 is employed to retain the breech block 12 in its battery position against accidental or unintentional recoil movement but is ineffective to retain the breech block in battery against the recoil of firing. Conveniently the breech block 12 may carry the rear sight 33 of the sighting system.

The firing mechanism 15 exclusive of the firing pin comprises a hammer 34 of the usual swinging type pivoted at 35 in a suitable recess in the frame in such manner as to be operable to strike the protruding head of the firing pin in the battery position of the breech block. A hammer spring 36 is positioned within a recess in the frame and has superimposed thereon a spring seat 37 engaging a strut 38 pivoted to and depending from the hammer through a suitably recessed part of the frame and is of sufficient stiffness when released to swing the hammer from cocked to firing position and cause the latter to impart an impulse to the firing pin that will overcome the retractive force of the firing pin retracting spring 28 and project the firing pin against a chambered cartridge with primer detonating force. To retain the hammer 34 in cocked position a sear 39 is mounted in a recess in the frame below the breech block 12 and forwardly of the hammer 34 for limited reciprocable movement. The hammer is notched at 40 and the adjacent end 41 of the sear is formed to cooperate with the hammer notch in such manner as to retain the hammer in cocked position in rearward position of the sear. The forward end of the sear is suitably bifurcated to receive the end of a trigger 42 which is pivoted thereto and depends therefrom, through an opening leading from the sear recess in the frame, into the space defined by the trigger guard 16. A sear spring 43 is inserted through a recess in the frame in prolongation of the sear recess and suitably retained therein to normally urge the sear and attached trigger to retracted position. As clearly shown in Fig. 1 the rear side of the trigger engages the frame at 44 adjacent the opening in the frame leading from the sear recess to the space enclosed by the trigger guard whereby a retractive force on the trigger will cause the same to fulcrum about the frame on the line of engagement therewith and move the sear forwardly against the sear spring 43.

In operation the breech block 12 is manually retracted to engage or abut the breech block buffer or stop and expose the breech of the chamber. Retraction of the breech block depresses the hammer 34 to compress the hammer spring 36 and the sear is urged into engagement with the hammer notch by the sear spring to retain the hammer in cocked position. The action of the buffer as is well understood in the art is to decelerate the breech block and prevent rebound. This braking effect is enhanced by the friction between the hammer and the breech block which friction also serves to hold the breech block rearward until pushed forward manually into battery. It will be noted that while the hammer is performing this function there is no pressure between the top of the sear and the hammer notch. This pressure arises only when the block has been moved away from the hammer. A cartridge is then manually seated in the barrel chamber and the breech block manually returned to battery wherein it is retained against displacement, except by the force of recoil, by the detent 32. The weapon is now in condition for firing which may be accomplished by depression of the trigger 42 to disengage the sear from the hammer whereby the hammer spring will drive the hammer into engagement with the firing pin to fire the round. The chamber pressure developed by the fired round will thrust the cartridge case to the rear in recoil thereby driving the breech block to the rear and effecting automatic extraction of the cartridge case from the chamber. The cartridge will follow the breech block to substantially the end of its recoil travel and fall from the frame while the breech block will remain in its recoil position against the buffer 14. The weapon is now recocked and in condition for reloading of a subsequent cartridge as above.

In Figs. 3 and 4 I have shown a cleaning rod guide 14' adapted to be substituted for the recoil buffer 14 after the breech block 12 has been removed. The guide 14' is provided with a suitable guideway 45 so related to the axis of the bore of the barrel as to cause alignment of a cleaning rod indicated at 46 with the bore of the barrel in cleaning. In this manner damage of the chamber or bore of the barrel is prevented through scraping of the cleaning rod thereagainst during cleaning. If desired the cleaning rod guide may be used as the recoil buffer by combining the guideway feature with the buffer 14.

Having now described what I at present consider a preferred embodiment of the invention, what I claim as new and desire to secure by Letters Patent is:

1. In a weapon of the class described a frame, having a trigger opening, a hammer provided with a sear notch pivoted in the frame, a sear movably mounted in the frame and engageable in said sear notch to restrain the hammer to cocked position, means urging the sear into sear notch engaging relation, and a trigger pivoted to the sear depending through the trigger opening and adapted to directly engage the frame subjacent its pivotal connection with the sear as a fulcrum upon application of pressure to move the sear from sear notch engagement.

2. In a weapon of the class described a frame, a reciprocable breech block mounted on the frame and having mounted therein a firing pin, a hammer provided with a sear notch pivoted in the frame and operable to strike the firing pin in the closed position of the breech block, a sear mounted in the frame to reciprocate in parallel relation with the breech block and engageable in said sear notch to restrain the hammer to cocked position, means urging the sear into sear notch engaging relation, and a trigger pivoted to

the sear and depending through the frame with an intermediate part directly engageable with the frame as a fulcrum.

3. In a weapon of the class described a frame, having a trigger opening, a hammer provided with a sear notch pivoted in the frame, a sear movably mounted in the frame and engageable in the sear notch to restrain the hammer to cocked position, means urging the sear into sear notch engaging relation, said sear being bifurcated remote from its sear notch engaging surface, and a trigger pivoted to the sear between the bifurcations thereof and depending through the trigger opening with an intermediate part thereof engaging the frame, whereby application of pressure on the trigger will cause the same to fulcrum on the frame and move the sear from the sear notch.

4. In a weapon of the class described, a frame, a barrel secured to the frame, a reciprocable breech closure for the barrel mounted on the frame and a combined cleaning rod guide and recoil stop mounted on the frame in rear of the breech closure.

WALTER T. GORTON.