

Aug. 22, 1944.

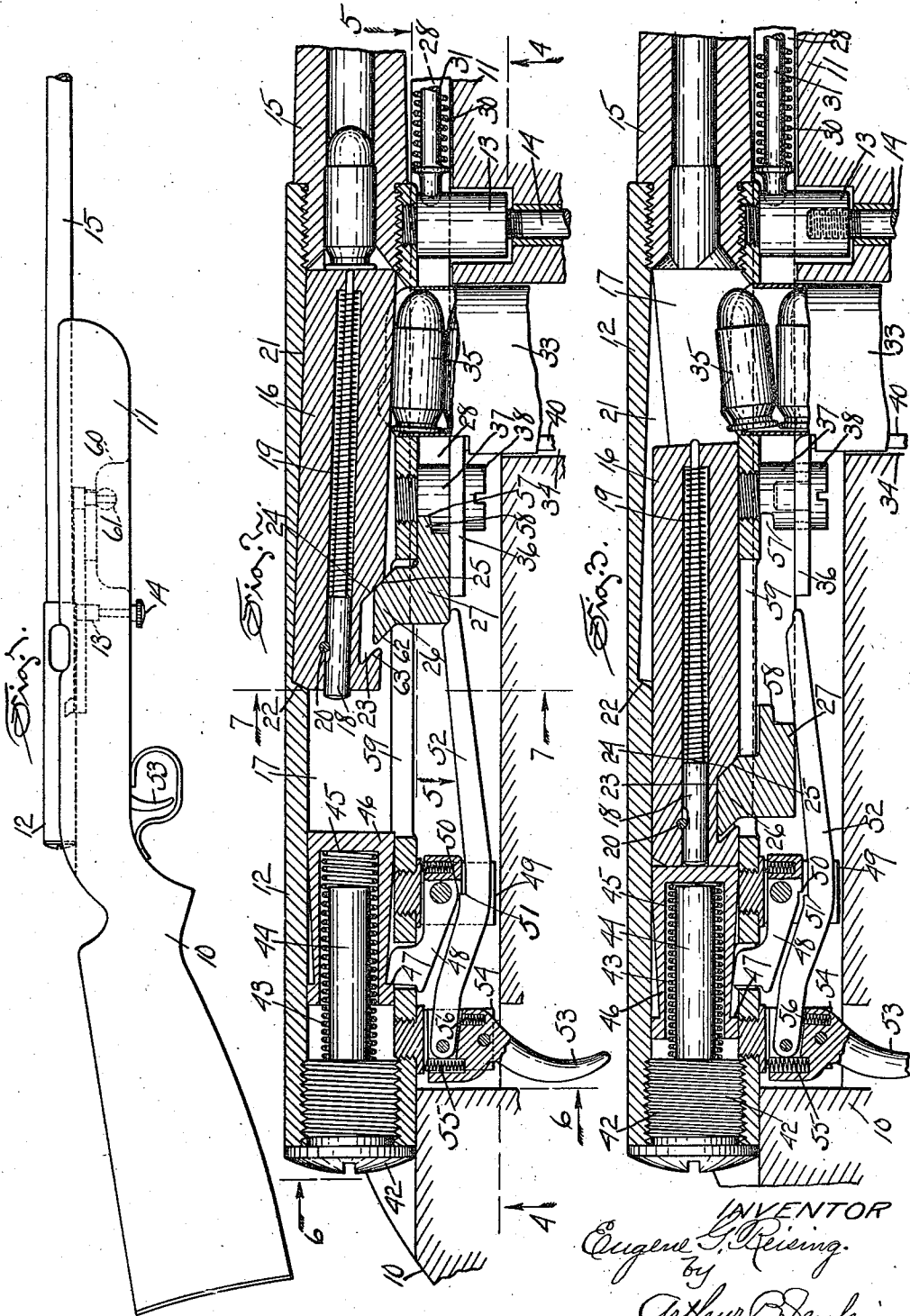
E. G. REISING

2,356,726

FIREARM

Filed June 28, 1940

2 Sheets-Sheet 1



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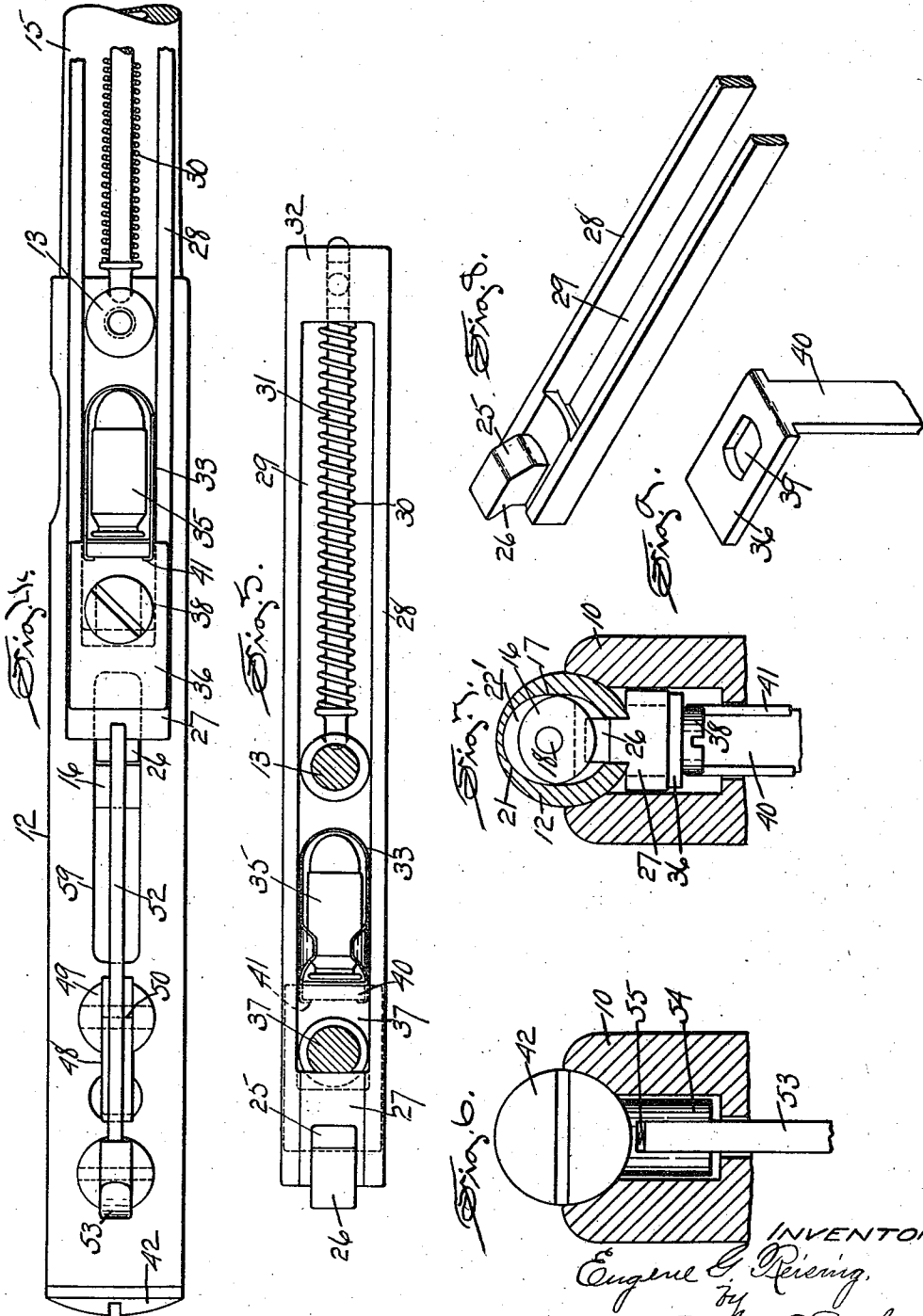
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FIREARM

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7 Claims. (Cl. 42—3)

My invention relates to that class of firearms which are intended for support upon the body of the user when in use, and an object of my invention, among others, is the production of a firearm of this type that while being semi-automatic in action shall be provided with means for delaying or retarding the action; and a further object of the invention is to provide a firearm of this class that shall be simple in construction and operation and particularly efficient in the results produced by its operation.

One form of a firearm embodying my invention and in the construction and use of which the objects herein set out, as well as others, may be attained is illustrated in the accompanying drawings, in which—

Figure 1 is a view in side elevation of my improved firearm.

Figure 2 is a view on enlarged scale in central lengthwise section through the receiver showing the parts in cocked position ready for firing.

Figure 3 is a similar view but illustrating the parts in operation, the breech bolt being in its rearward position from which it will pass forward to insert a cartridge in the breech or barrel and close said breech.

Figure 4 is a bottom view of the receiver as illustrated by the broken line 4—4 of Fig. 2, the stock being omitted.

Figure 5 is a similar view on the broken line 5—5 of Fig. 2.

Figure 6 is a view in cross section on a plane denoted by the dotted line 6—6 of Fig. 2.

Figure 7 is a similar view on a plane denoted by the broken line 7—7 of Fig. 2.

Figure 8 is an isometric view of the rear end of the action bar.

Figure 9 is a similar view of the support for the action bar and guide for the mechanism.

In the accompanying drawings the numeral 10 denotes the stock of my improved firearm which may be of any approved material, as wood, and of any ordinary shape and comprising a fore-piece 11 extending from the front end of the stock. A receiver 12 is secured to the stock as by means of a stud 13 engaged by a thumb screw 14 as shown in Figs. 1, 2, and 3 of the drawings. A barrel 15 is threaded into the receiver 12 in a manner common to structures of this type.

A breech bolt 16 is slidably mounted in a chamber 17 in the receiver 12 and contains a firing pin 18 which is thrust backwardly by means of a firing pin spring 19 and that is limited in its movement by a pin 20 entered into a recess in the side of the firing pin, as shown in Fig. 2. An

extractor and ejector for the shells have been omitted as these may be of any ordinary type common to structures of this class.

The chamber 17 has a retarding recess 21 in its upper side of the same general shape in cross section as that of the breech bolt 16, and this recess terminates in a retarding shoulder 22 which is beveled as shown in Fig. 2 to receive a correspondingly beveled edge 22' on the upper side of the breech bolt at its rear end. A recess 23 is formed in the under side of the breech bolt near its end, the forward end of this recess being beveled at 24 for contact with a similar beveled shoulder 25 on the forward end of the lug 26 of an action bar 27, as shown in Figs. 1 and 2 of the drawings. This action bar comprises sides 28 spaced apart to form an opening 29 within which an action bar spring 30 mounted upon a supporting rod 31 is located. This rod extends through a cross bar 32 comprising a part of the action bar and located at its front end, the rear end of the rod being supported in a recess in the lug 13, as shown in Fig. 5. The spring is for the purpose of moving the action bar to its forward position, the rod 31 being projected through the bar 32 when the action bar is moved rearwardly.

A magazine 33 extends upwardly through an opening 34 in the stock and through the opening 29 between the sides 28, the mouth of the magazine being located in position to deliver cartridges 35 into the forward end of the breech bolt chamber 17 adjacent to the rear end of the opening in the barrel 15 and in the path of movement of the breech bolt in a manner common to firearms of this type.

An action bar support 36 is secured to the end of an action bar supporting stud 37 as by means of a screw 38 threaded into the stud and projecting through a hole 39 in the support as shown in Figs. 2 and 9 of the drawings. A magazine guide 40 extends downwardly from the support 36, said magazine having lips 41 turned over opposite sides of the guide as shown in Figs. 3 and 7 of the drawings.

A screw plug 42 threaded into the rear end of the receiver closes the rear end of the chamber 17, a firing spring 43 mounted on a spring supporting rod 44 extending into an opening 45 in a hammer 46. The spring 43 operates to force the hammer forwardly against the firing pin 18 in a manner common to firearms of this type, the hammer having a reciprocating movement in the chamber 17. The hammer has a shoulder 47 that engages with the upper edge of a sear 48, the latter being pivotally mounted on a sear sup-

porting lug 49 screw threadedly secured to the under side of the receiver as shown in Fig. 2. The sear is spring pressed into engagement with said shoulder and it has a firing notch 50 engageable with a shoulder 51 on a disconnector 52 pivotally mounted at its rear end on a trigger 53 and extending through a slot in the lug 49 and with its front end in the path of movement of the rear end of the action bar 27 as shown in Fig. 2. The trigger 53 is pivotally mounted in a groove in a trigger supporting lug 54 screw threadedly secured to the under side of the receiver, as shown in Fig. 2. The lower end of the trigger is spring pressed forwardly by means of a trigger spring 55 and the disconnector 52 is forced upwardly as by means of a disconnector spring 56.

The action bar supporting stud 37 has a notch 57 to receive a lip 58 projecting from the rear end of the opening through the action bar, as shown in Fig. 3, this lug and notch supporting the action bar when it is at the forward end of its movement and at the time when the forces of explosion acting against the beveled surfaces 24-25 are tending to force this end of the action bar downwardly. A slot 59 is formed in the under side of the receiver within which the lug 26 reciprocates during the firing action. A recess 60 is formed on the under side of the fore-piece 11 and a handle 61 extends within said recess and into the under side of the breech bolt for the purpose of manual operation of said bolt. This manual operation will cause a beveled edge 62 on the back edge of the lug 26 to engage a beveled surface 63 in the recess 23 to move the rear end of the breech bolt downwardly and disengage it from the shoulder 22 to permit backward movement to cocking position by operation of said handle.

The breech bolt 16 being in its forward position as shown in Fig. 2 with the forward end of the hammer resting against the rear end of the breech bolt, the breech chamber in the barrel being empty and the magazine having one or more cartridges therein the operation is as follows:

By means of the handle 61 the action bar 27 is manually forced rearwardly and the beveled edge 62 on the lug 26 engaging the beveled surface 63 at the rear end of the recess 23 will force the rear end of the breech bolt downwardly out of engagement with the shoulder 22, the breech bolt then moving backwardly under the manual force applied to the handle 61, carrying with it the hammer 46. When the parts reach their full movement backwardly the sear 48 will automatically engage the shoulder 47 on the hammer and retain the latter in its rearward position while the action bar, under the influence of its spring will move to its forward position as shown in Fig. 2. This rearward movement of the breech bolt will uncover the opening in the breech chamber and the spring under the cartridges in the magazine will force the top-most cartridge in the usual manner into the path of the breech bolt in its closing movement just described, said cartridge thereby being forced into the breech chamber and the several parts being now in the position shown in Fig. 2.

The trigger 53 now being pulled, the disconnector 52 disengages the sear from the hammer and the latter under the action of its spring 43 is forced forwardly striking the end of the firing pin 18 and causing explosion of the cartridge. The compression in the breech chamber caused by this explosion acts upon the forward end of the breech bolt forcing it backwardly. The bevel on

the retarding shoulder 22 and on the end of the breech bolt is of such a degree that the force of explosion will force the rear end of the breech bolt downwardly after retarding such action.

The beveled surface 24 at the forward end of the recess 23 in the breech bolt engaging the beveled shoulder 25 forces the action bar rearwardly. The breech bolt travels backwardly carrying the action bar 27 and the hammer 46 with it. The hammer is retained in its rearward position as hereinbefore explained and the backward movement of the breech bolt will cause ejection of the empty cartridge shell by an extractor not herein shown but in a manner well-known. The breech bolt will be moved forward by the action bar spring 30 carrying with it a new cartridge from the top of the magazine and inserting it in the breech chamber. During these operations as the action bar is moved backwardly encountering the end of the disconnector 52 the latter is forced downwardly out of engagement with the sear 48 and the latter is free under the influence of its spring to move into position to engage the hammer as the latter is moved backwardly by the breech bolt during the firing action, and the action bar moving forwardly releases the disconnector 52 permitting it to move upwardly into engagement with the sear whereby the latter may be operated by the trigger for a repeated operation.

In accordance with the provisions of the patent statutes I have described the principles of operation of my invention, together with the device which I now consider to represent the best embodiment thereof; but I desire to have it understood that the device shown is only illustrative and that the invention may be carried out by other means and applied to uses other than those above set forth.

I claim:

1. A firearm including a stock, a receiver mounted on said stock and having a breech bolt chamber therein, firing mechanism including a breech bolt located for reciprocating movement in said chamber, an action bar support located underneath the receiver, a lug having a supporting notch and to which said support is secured, an action bar having means forming a lengthwise slot to receive said lug for guiding movement of said bar and having a lip engageable in said notch, said bar being mounted on said support for sliding movement thereon, means for operatively connecting said action bar with said breech bolt, and a barrel secured to said receiver.

2. A firearm comprising a stock, a receiver, a breech bolt chamber in the receiver, firing mechanism including a reciprocable breech bolt in the chamber, a lug depending from the receiver, an action bar guide underneath the receiver, an action bar guided for sliding movement by said guide, means operatively connecting the action bar and bolt, and interengaging means comprising a recess in the lug and a lip on the action bar to temporarily support the latter at the instant of firing independently of the action bar guide.

3. A firearm comprising a stock, a receiver, a breech bolt chamber in the receiver, firing mechanism including a reciprocable breech bolt in the chamber, a lug depending from the receiver, an action bar guide underneath the receiver, an action bar guided for sliding movement by said guide, means connecting the action bar and the bolt, interengaging means on the lug and

action bar, said last named means comprising a recess and a lip engageable therein to support the action bar at the instant of firing.

4. A firearm comprising a stock, a receiver, a breech bolt chamber in the receiver, a recess in a wall of the receiver, said recess having a cam surface, a reciprocable breech bolt in the chamber adapted to be received in part in the recess in breech closed condition of the firearm, a lug depending from the receiver, an action bar guide, an action bar guided for sliding movement by said guide, means connecting the action bar and the bolt, said last named means including camming surfaces for moving the bolt into the recess in the chamber and into engagement with the cam surface, resilient means for sliding the action bar and connected bolt to breech closed condition of the bolt in the recess whereby the bolt is yieldingly held against rearward movement, and interengaging means on the lug and action bar independent of the action bar guide for supporting the latter in breech closed condition of the firearm.

5. A firearm as recited in claim 4 wherein said interengaging means is located adjacent the connection between the action bar and the bolt when the latter are in breech closed position so that the action bar is positively supported at the instant of firing.

6. A firearm as recited in claim 4 wherein the interengaging means is located adjacent said camming surfaces when the bolt and action bar are in breech closed position for supporting the action bar during movement of the bolt from the recess in the breech bolt chamber.

7. A firearm including a support, a receiver mounted on said support and having a breech bolt chamber, firing mechanism including a breech bolt located for reciprocating and tilting movement in said chamber and having a notch with a beveled edge in its under side, an action bar guide on the under side of the receiver, an action bar mounted for reciprocating sliding movement on the action bar guide and having a lug at one end arranged to engage said beveled edge to raise the rear end of the breech bolt, a beveled shoulder in said chamber into engagement with which said breech bolt is raised, means independent of the action bar guide for temporarily supporting the rear end of the action bar against downward force transmitted by said beveled edge to the action bar at the instant of explosion, and resilient means for sliding the action bar and engaged bolt to breech closed condition of the bolt against the shoulder, whereby the bolt is yieldingly held against rearward movement.

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