Feb. 4, 1941. N. L. BREWER 2,230,372

TRIGGER AND SEAR MECHANISM FOR FIREARMS

Original Filed Nov. 8, 1937 2 Sheets-Sheet 1

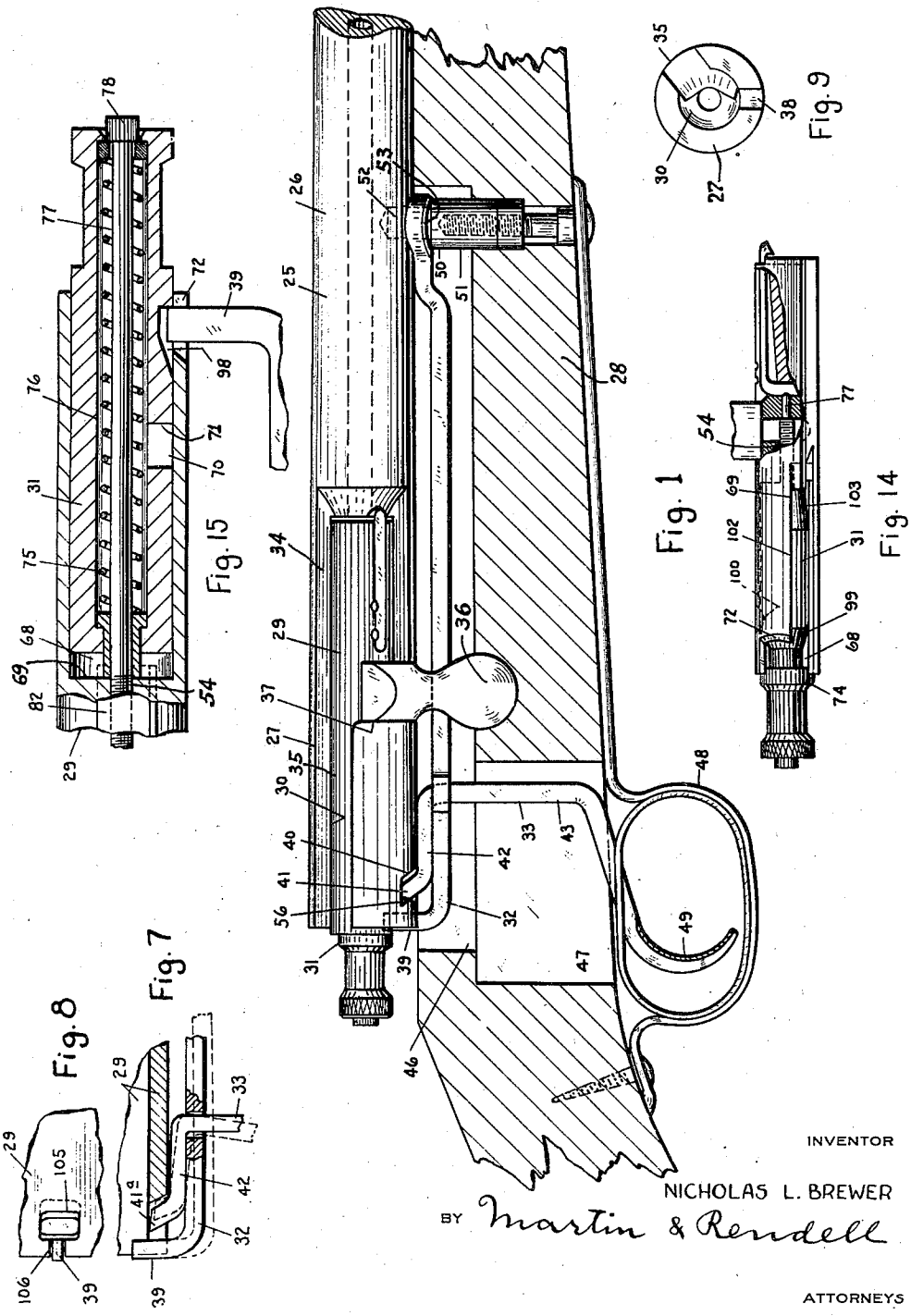


Fig. 1

Fig. 9

Fig. 15

Fig. 14

Fig. 8

Fig. 7

INVENTOR

NICHOLAS L. BREWER

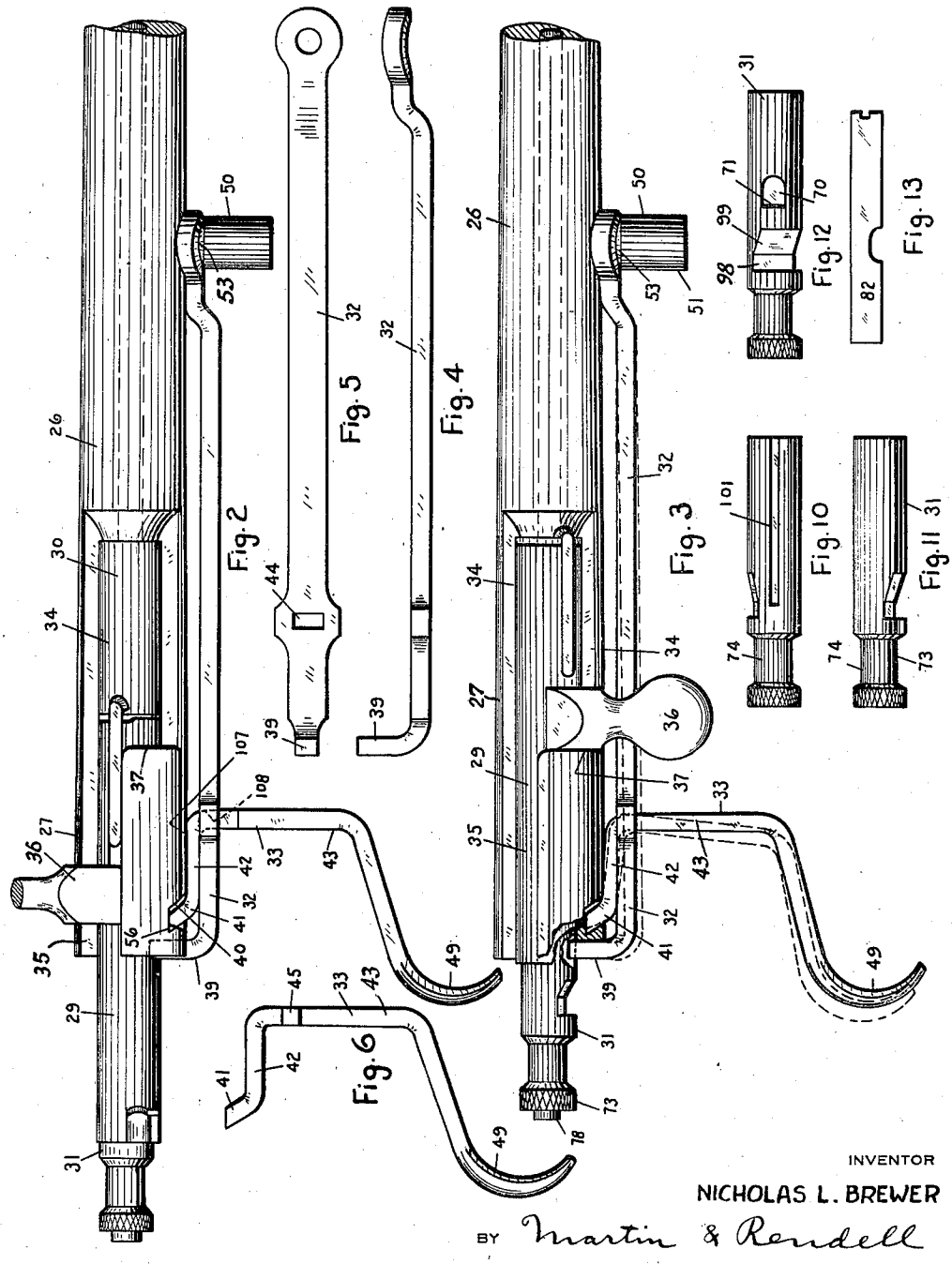
BY Martin & Rendell

ATTORNEYS

Feb. 4, 1941. N. L. BREWER 2,230,372

TRIGGER AND SEAR MECHANISM FOR FIREARMS

Original Filed Nov. 8, 1937 2 Sheets-Sheet 2



INVENTOR

NICHOLAS L. BREWER

BY Martin & Rendell

ATTORNEYS

Patented Feb. 4, 1941 2,230,372

UNITED STATES PATENT OFFICE

2,230,372

TRIGGER AND SEAR MECHANISM FOR FIREARMS

Nicholas L. Brewer, Agawam, Mass., assignor to Savage Arms Corporation, New York, N. Y., a corporation of Delaware

Original application November 8, 1937, Serial No. 173,358. Divided and this application July 25, 1938, Serial No. 221,094

10 Claims. (Cl. 42—69)

This invention relates to rifles and more especially to the trigger and sear mechanism therein that will be used more particularly with single shot, handcocked rifles of the bolt action type.

This application is a division of an application filed by me November 8, 1937, in the United States Patent Office as Serial No. 173,358, now matured into Patent No. 2,223,092.

The general purpose of my present invention is to provide a new and improved form of rifle and especially to provide an improved sear and sear spring construction consisting of a one-piece sear and sear spring, said one piece being formed from one piece of flat spring stock bent to the proper shape and guided at its rear end by a guiding cut in the receiver and held to the gun by means of the take-down lug and to provide a new and improved trigger and sear mechanism and particularly a trigger which cooperates with a one-piece sear and sear spring by the interfitting shape of said two parts without the use of pivot pins or other members and to provide an improved and very simple construction for holding the upper end of the trigger in place in the receiver while still allowing back and forth movement of the trigger in the receiver.

Further purposes and advantages of the invention will appear from the specification and claims herein.

Fig. 1 is a right-hand side elevation of the material portion of a bolt action rifle illustrating my present invention, the adjacent part of the stock being in vertical section, the parts being in the position they occupy when the breech member is closed but the rifle not cocked.

Fig. 2 is a side view of the parts shown in Fig. 1 but omitting the stock and with the breech member retracted.

Fig. 3 is a side elevation similar to Fig. 2 but with the breech member closed and with the rifle cocked.

Figs. 4 and 5 are right side and top views respectively of the sear.

Fig. 6 is a side view of the trigger.

Fig. 7 is a central vertical longitudinal sectional view of a modified form of mounting the upper end of the trigger in the receiver and Fig. 8 is a top or plan view of the relevant portion of the parts shown in Fig. 7.

Fig. 9 is a rear view of the combination barrel and receiver.

Figs. 10, 11 and 12 are respectively top or plan, right side elevation and bottom views of the striker when the breech block is in locked position.

Fig. 13 is a side view of the firing pin.

Fig. 14 is a right-hand side view of the breech bolt and parts mounted therein or thereon as seen at the angle where the handle projects directly up from the breech bolt, parts of the breech bolt adjacent the extractor and the handle being broken away to better show details of construction.

Fig. 15 is a vertical sectional view on an enlarged scale of the striker and its contained parts and of the rear half of the breech bolt and showing in side elevation a part of the firing pin near its rear end and the rear end of the sear, the parts being in the position they occupy when the striker is in rebounded or neutral position and when the said parts are seen from the left-hand side of the rifle.

Referring to the drawings in a more particular description it will be seen that the rifle illustrated is of the bolt action, single shot, hand-loaded and hand-cocked type and includes one member 25 being a combined or integrally formed barrel 26 and receiver 27 mounted above the stock 28, a breech bolt 29 reciprocatingly mounted in the chamber 30 of the receiver with said breech bolt in turn having mounted therein a striker 31 normally controlled by the sear 32 and trigger 33.

The chamber 30 extends for the whole length of the receiver 27 to slidingly receive therein the generally cylindrically shaped breech bolt 29. From this chamber there projects to the right and for nearly one-third of the circle of the receiver the loading and ejecting aperture 34 and from the upper part of this aperture there is a narrower straight rearwardly extending passage 35 for the movement therethrough of the inner end of the breech bolt handle 36. At the rear end of the lower half of the loading aperture 34 the receiver provides a forwardly facing shoulder 37 against which the rear face of the inner end of the bolt handle engages when the breech bolt had been slid to forward position and then partly rotated to lock the same in forward position by downward movement of the said handle as is shown best in Figs. 1 and 3.

As appears from Fig. 9 which is a rear view of the receiver and barrel, the rearward end of the receiver at its lower part is provided with a guiding cut 38 wide enough and long enough to slidingly receive therein the upper end of the upstanding finger 39 on the sear 32.

Transversely extending through the lower portion of the receiver slightly forward from its rear end and slightly spaced from the guiding cut 38 there is provided an angularly disposed slot 40 which slopes forward as it extends downwardly

and is adapted to loosely receive the correspondingly slanted upward projection 41 at the upper and rear end of the trigger 33.

Immediately forward of the slanting projection 41 on the trigger, the trigger is provided with a forwardly extending straight portion 42 which normally lies parallel to the adjacent lower surface of the receiver. Thereafter the trigger has a central straight portion 43, the upper portion of which extends through the aperture 44 in the sear 32. Conveniently but not necessarily the opposite edges of this central portion of the trigger are provided with outwardly extending enlargements 45 which are immediately below the sear adjacent the aperture 44. As appears from Fig. 1, this central portion 43 of the trigger extends downwardly at right angles to the receiver and through the main recess 46 in the stock provided to house the receiver and the sear and trigger and also through the secondary recess 47 extending entirely down through the stock for the passage therethrough of the trigger. Below this secondary recess 47 there is provided the ordinary trigger guard 48 into the opening of which the lower part 49 of the trigger extends for manual operation thereof in the usual way.

As is best shown in Figs. 1 to 5 the sear 32 is a combined sear and sear spring being formed of a relatively long bar of spring metal provided at its rearward end with the upstanding finger 39 already mentioned and provided a short distance forward thereof with the aperture 44 through which the trigger passes. Adjacent the aperture 44 the sear is enlarged laterally and forward of this enlarged portion the sear extends forward still spaced from the lower side of the receiver and of the barrel almost to its forward end which is offset upwardly and curved to fit the rounding face of the adjacent portion of the barrel. This combined sear and sear spring is secured to the barrel by the take-down lug 50, the lower part 51 of which is enlarged relative to its upper screw-threaded portion 52 so that an upwardly facing shoulder 53 is provided bearing against the lower part of the front end of the sear. The arrangement and construction is such as to give a constant upward tension to the rear end of the sear and thus hold the trigger in normal position as shown in full lines in Figs. 1, 2 and 3, but allowing a rearward pull upon the finger portion of the trigger to depress the sear to the position shown in dotted lines in Fig. 3 at which position the upper portion of the finger on the sear has become disengaged from the striker 31. It will be obvious that the proper rearward pressure upon the lower or finger portion of the trigger will bodily swing the trigger. During such swinging operation, the upper projection 41 on the trigger will act as a sliding fulcrum for the trigger, and the lower surface of the forward part of the straight upper portion 42 of the trigger will bear against the upper face of the sear at the rear of the aperture 44 and so swing the rear end of the sear downwardly. As soon as the sear is released from the striker the striker will shoot forward under the action of the combined main spring and rebound spring 75 and effect a firing impulse upon the firing pin 82 as hereinafter described. As soon as the pressure of the shooter's finger is released from the trigger, the sear under its normal tension will return to normal position carrying therewith the trigger to its normal position. The material of the receiver adjacent the rear side of the slot 40 will be upset or punched upwardly on both sides of the trigger finger 41 as at 56 and thus operate to hold the trigger from any possibility of lateral displacement from the slot 40.

It will be noted that this mechanism of the sear and sear spring and the trigger is very easily constructed and easily and economically assembled and is strong and rigid and requires no additional or further parts other than the take-down lug 50 for holding the parts in place, and that no special parts or additional parts are required or used to form a pivot for the swinging of the trigger nor for the articulation of the trigger against the sear.

The breech bolt 29 is circular in cross section and cylindrical in outline. The forward end in the main is solid but its rear half is tubular in form providing a chamber 68 open at its rear end and bounded at its forward end by a transverse wall 69 where the solid forward half of the breech bolt begins. In this chamber 68 is slidingly mounted the striker 31. In this rifle the striker is cocked by hand, that is the striker is drawn back manually by the shooter grasping the rear portion of the striker that projects beyond the rear end of the breech bolt as seen at the left of Figs. 1, 2 and 3 and as seen at the right hand end of Fig. 15. This rear end or tail of the striker also projects beyond the rear end of the receiver when the breech bolt is in closed position but not cocked as appears in Fig. 1. After the striker has been moved back to cocked position shown in Fig. 3, it is automatically retained and held in that position by the finger 39 on the sear 32 at once springing up into an opening 70 in the bottom wall of the hollow striker where the rear side of the finger of the sear engages the shoulder 71 at the back of said opening 70 in the striker. The arrangement of the parts at this cocked position is well shown in Fig. 3 where the rear end of the receiver and also the rear lower end of the chambered part of the breech bolt and also a small part of the chambered portion of the striker are cut away on purpose to show the finger of the sear extending through the guiding cut 38 in the rear end of the receiver and through the clearance cut 72 in the rear lower portion of the wall of the breech bolt adjacent its rear end and into the opening 70 in the bottom wall of the striker.

The drawing back of the striker by the shooter pulling upon the tail of the striker compresses the coiled spring 75 mounted within the central bore 76 of the striker and encircling a considerable part of the shank of the striker retaining bolt 77. The head 78 of this bolt is to the rear of the action while its forward end extends into a centrally-located longitudinally extending hole 54 provided in the forward solid half of the breech bolt. Slightly back from its forward end this striker-retaining bolt 77 is screw-threaded to fit the screw-threaded portion of the said hole 54.

The form and proportion of the blade type firing pin 82 is clearly shown in Fig. 13 of the drawings which is a side view thereof. The said firing pin is conveniently formed of a strip of flat metal of the proper thickness, length and structure. It is slidingly mounted in the forward solid portion of the breech bolt which is provided with a deep slot of a width equalling the thickness of the firing pin and of a depth somewhat greater than the width of the firing pin.

In this rifle with which I have illustrated said sear and trigger there is provided a mechanism wherein the striker 31 is of the rebounding type and wherein one spring namely coiled spring 75

performs the functions both of a main spring and a rebound spring. Details of this mechanism, especially the relative position of the different parts of the mechanism, are best shown in the enlarged sectional view, Fig. 15.

As already mentioned the rearward half of the breech bolt 29 is provided with a chamber 68 open at its rear end and closed at its forward end by the wall 69. The striker-retaining bolt 77 has the rearward portion of its shank extending longitudinally through the longitudinal axis of the chamber 68 and its forward end passes into a centrally located hole 54 extending some distance forward of the wall 69 in the solid part of the breech bolt and is fixed in position therein by the screw-threaded engagement of the forward end of said striker-retaining bolt with the rearward screw-threaded end of said hole in the breech bolt as already outlined. The body of the striker 31 is generally cylindrical in form as appears from the different detailed outside views thereof, Figs. 10 to 12, and at the rear is provided with the tail portion 73 which consists of the reduced diametered portion 74 and to the rear thereof the enlarged ring-like portion or cocking knob preferably knurled at its periphery. The reduced size of the part 74 together with the enlarged ring-like and knurled portion afford a good gripping surface to be grasped by the shooter's thumb and finger when the striker is to be pulled back against the tension of the spring 75 for cocking the rifle. The main bore 76 of the striker is circular in cross section and extends for its full diameter for almost the full length of the striker. At its forward end, however, there is a reduced diametered passage providing in the material of the striker at the rear end of said passage a strong annular shoulder against which fits the forwardly facing annular shoulder at the forward face of the enlarged annular flange of the forward collar which has a central aperture therein by means of which the collar is slidingly mounted upon the striker-retaining bolt 77. The striker or main spring 75 is mounted within the main bore 76 of the striker and is coiled about the striker-retaining bolt 77 and its forward end bears against the rear face of the forward collar.

Fig. 15 shows the striker and other co-operating parts in the location they occupy when the striker is at neutral or re-bounded position; that is, after the rifle has been fired or snapped and the striker has gone back to re-bounded position and the rifle reloaded, closed and locked. In this re-bounded position of the striker this slightly retracted position of the striker allows the firing pin 82 to be retracted from engaging the cartridge and the rear end of the firing pin projects into the chamber 68 and so is ready to be engaged by the striker as appears in dotted lines in Fig. 15. By reason of the striker being held back by the sear engaging the safety notch 98, the gun cannot be accidentally fired by a blow upon the tail of the striker.

To move the striker from this neutral or re-bounded position shown in Fig. 15 to the cocked position of the rifle the tail of the striker is grasped by the shooter and drawn rearwardly. During this retraction of the striker 31 the upwardly extending sear finger 39 has engaged the slanting cam face 99 upon the striker and said sear finger 39 has been depressed against the tension of the sear so as to ride along the cam face 99 and then along the lower or outer side of the striker forward of said cam face until as the striker is brought to cocked or retracted position the tension of the sear is able to again advance inwardly this finger 39 into the full cock hole or opening 70 in the bottom wall of the striker with the rear face of said finger engaging the forwardly facing shoulder 71 at the rear of the said opening 70. The finger of the sear now holds the striker in rearward and cocked position against the tension of the now more greatly compressed spring 75.

In this cocked position of the rifle the spring 75 is compressed to its maximum working compression and minimum working length and is through the forward collar 92 exerting a force urging the striker 31 forward, but movement of the striker is arrested as long as the sear finger 39 is in engagement with the shoulder 71 of the full cocked recess or hole 70.

Upon the trigger being pulled the sear 32 is drawn away from the striker and particularly the sear finger 39 is disengaged from the full cock recess or opening 70 of the striker and the compressed spring 75 then causes the striker to fly forward. As it flies forward it gains momentum and carries the striker to the neutral or rebounded position shown in Fig. '15 under the direct force of the spring at which rebounded position the forward collar has its forward end engage the rearwardly facing wall 69 and so stop the said collar. The momentum, however, already given to the striker causes the striker to move still further forward and the striker carries with it the firing pin 82 to make its firing blow upon the cartridge and finally makes the forward end of the striker seat against the said wall 69 at the front end of the chamber of the breech bolt. It will be understood that this forward flying of the striker is done so rapidly that it comes to this position before the shooter can really release his hold upon the trigger and so the sear finger 39 is still away from the striker. It will be seen that the actual firing stroke given to the firing pin is accomplished by the last part of the forward movement of the striker which is a movement entirely of momentum.

Rotation of the striker in the breech bolt is prevented by means of a key pressed inward from the wall of the breech bolt and slidingly engaging a keyway 101 extending longitudinally of the top of the body of the striker as appears in Fig. 9.

The wall of the hollow rear half of the breech bolt is cut away for its whole length making a slideway 102 located in the portion of the breech bolt that is at the bottom when the breech bolt has been unlocked by swinging its handle upwardly and is being moved back or forth by said handle being moved back and forth through the passage 35 therefor in the receiver. As best appears in Fig. 14 this slideway 102 is in line with the firing pin slot and reaches to the rear end thereof. The rear end of this slideway 102 it will be seen communicates with the clearance cut 72 in the rear end of the breech bolt through which the sear finger 39 projects upwardly to engage the striker by entering the safety notch or recess 98 in the striker when the striker is in rebounded position. Accordingly the partial rotation of the bolt in the unlocking thereof swings the breech bolt so that the sear finger 39 passes into the rear end of the long slideway 102 and during retraction of the breech bolt said finger slides through this slideway 102 with said finger 39 first engaging the cam surface 99 of the striker and then the bottom surface of the body of the striker and then moving inwardly and upwardly along the second cam face 103 until finally the

finger 39 strikes sharply the rear end of the firing pin 82. This drives the firing pin forwardly in the breech bolt and its firing point is snapped forward against the opposite rim portion of the cartridge and thus the firing pin functions also as the ejector in striking the rear of the cartridge diametrically across from the extractor hook and thus operating to throw the cartridge from the gun.

The passageway 102 is continued a short distance forwardly of the wall 69 so that the sear finger is able to push the firing pin slightly farther forward than said pin is moved by the firing pin during the firing operation. After the firing pin has been moved forward to cause the firing pin to function as an ejector the said firing pin comes to the end of its forward travel and thereafter the engagement of the sear finger with the rear end of the firing pin retains the bolt in the gun so that the sear thus acts as the bolt stop preventing the bolt being withdrawn from the receiver beyond its normal retracted position. If the breech bolt is to be entirely withdrawn from the receiver the sear finger is removed from this stopping position by pulling on the trigger which depresses the sear in substantially the same way as occurs during the firing operation.

On account of the peculiar angular shape of the trigger 33 and its articulation with the sear 32 and the contact of these parts normally with the receiver 27 as shown in Fig. 2 and again in full line position in Fig. 3, it will be obvious that a firing operation cannot be made by forward motion of the finger piece of the trigger for the reason that the trigger is positively locked against having its finger piece moved forward from normal position. The elements insuring such locking are the contact of the rear side of the trigger projection 41 with the rearward face of the slot 40 in the receiver, the contact of the upper face of the straight horizontal part 42 of the trigger as at zone 107 with the lower side of the receiver immediately thereabove and the contact of the forward face of the upper part of the central vertical portion 43 of the trigger with the forward face of the aperture 44 in the sear as at zone 108, it being understood that the sear is not movable lengthwise of the gun. After this trigger has been pulled it will come to a position as shown in dotted lines in Fig. 3 where the trigger is locked against any further clockwise movement. This is accomplished partly by the engagement of the trigger projection 41 against the top and forward face of the slot 40 and partly by the engagement of the trigger at its interior angle with the upper and lower edges of the sear at the rear face of the sear aperture 44.

In the modification of the connection of the trigger to the receiver shown in Figs. 7 and 8, the sear 32 and trigger 33 are of substantially the same construction as already described and in general co-operate with each other and with the receiver as heretofore described. The projection 41a at the upper end of the trigger, however, fits into the widened front part 105 of a notch 106 extending in from the rear end of the receiver 29 at its bottom. This arrangement causes the sides of the widened front of the notch to hold the trigger from sidewise movement and yet allows the rear face of the widened part of the notch by engaging the rear side of the trigger projection 41a to lock the trigger finger piece from being moved forward from normal position in combination of course with the other interengaging points still present as above outlined with regard to the main form of trigger connection. After the trigger has made its firing motion, the trigger of this modification is locked from further similar clockwise movement by the engagement of the front face of the trigger projection 41a with the front face of the widened recess 105 in combination of course with the other contacting parts still present in this modified form of trigger connection.

The rifle can be fired only by being properly closed, locked, cocked and having the trigger pulled. The rifle cannot be cocked until the breech bolt is fully closed and locked because the full-cock notch cannot be brought into register with the sear finger unless the breech-bolt is in that position.

An accidental discharge due to the cocking knob of the striker slipping from the grasp of the fingers in drawing the striker back to the full-cocked position is impossible due to the fact that in travelling forward the striker would have its half-cock notch engaged by the sear finger.

Accidental discharge from rapid and violent closing of the bolt accompanied by forward movement of the striker through its re-bound phase due to its velocity and inertia is impossible on account of the fact that the sear finger will engage the half-cock notch before the striker can move into its rebound phase.

What I claim as new and desire to secure by Letters Patent is:

1. In a firearm, the combination of a receiver having a downwardly-opening trigger-receiving notch in its lower side close to its rear end, a breech bolt slidingly mounted in said receiver, a striker slidingly mounted in the breech bolt, a main spring placed under compression by retraction of the striker, a spring-tensioned sear comprising an upstanding striker-engaging finger at its rear end and a shank portion mounted below the receiver and having its rearward portion spaced from the bottom of the receiver and adapted to swing therefrom but tensioned to return theretowards, said shank portion having an upright opening therethrough spaced forwardly from the said notch in the receiver, and a four-part trigger having at its upper rear end a projection engaging said notch in the receiver, a horizontally disposed portion extending forwardly from said projection to the said opening in the sear and fitting between the bottom of the receiver and the shank of the sear, an upright portion extending articulatingly downwardly through the sear opening and a lower finger-receiving piece so that rearward motion of the finger piece turns the upper portion of the trigger as a bell crank about the sear adjacent said hole therein and pries the sear away from the receiver and disengages the sear finger from the striker.

2. In a firearm, the combination of a receiver having a downwardly-opening trigger-receiving notch in its lower side close to its rear end, a breach bolt slidingly mounted in said receiver, a striker slidingly mounted in the breech bolt, a main spring placed under compression by retraction of the striker, a spring-tensioned sear comprising an upstanding striker-engaging finger at its rear end and a shank portion mounted below the receiver and having its rearward portion spaced from the bottom of the receiver and adapted to swing therefrom but tensioned to return theretowards, said shank portion having an upright opening therethrough spaced forwardly from the said notch in the receiver, and a four-

part trigger having at its upper rear end a projection normally engaging the rear of said notch in the receiver and, spaced slightly from its front, a horizontally disposed portion extending forwardly from said projection to the said opening in the sear and fitting between the bottom of the receiver and the shank of the sear, an upright portion extending articulatingly downwardly through the sear opening in close engagement with its front wall and a lower finger-receiving piece whereby rearward motion of the finger piece disengages the sear finger from the striker, forward movement of the trigger finger piece from normal position being prevented by said trigger projection engaging the rear wall of the notch in the receiver and the upright portion of the trigger engaging the front wall of the opening in the sear.

3. In a firearm, the combination of a receiver having a downwardly-opening trigger-receiving notch in its lower side close to its rear end, a striker, a spring-tensioned sear comprising an upstanding striker-engaging finger at its rear end and a shank portion mounted below the receiver and having its rearward portion spaced from the bottom of the receiver and adapted to swing therefrom but tensioned to return theretowards, said shank portion having an upright opening therethrough spaced forwardly from the said notch in the receiver, and a four-part trigger having at its upper rear end a projection engaging said notch in the receiver, a horizontally disposed portion extending forwardly from said projection to the said opening in the sear and fitting between the bottom of the receiver and the shank of the sear, an upright portion extending articulatingly downwardly through the sear opening and a lower finger-receiving piece so that rearward motion of the finger piece turns the upper portion of the trigger as a bell crank about the sear adjacent said hole therein and pries the sear away from the receiver and disengages the sear finger from the striker.

4. In a trigger and sear mechanism for firearms, the combination with a receiver having forward of its rear end a trigger-receiving notch in its lower side and a striker slidingly mounted within and relative to the receiver, of a spring-tensioned sear having an upstanding striker-engaging finger at its rear end and a shank portion mounted below the receiver and having its rearward portion spaced from the bottom of the receiver and adapted to swing therefrom but tensioned to return theretowards, said shank portion having an upright opening therethrough spaced forwardly from said trigger-receiving notch in the receiver, and a trigger having at its upper rear end a projection extended upwardly to engage the said notch in the receiver and having a horizontally-disposed portion extending forwardly from said projection to said opening in the sear and fitting between the bottom of the receiver and the shank of the sear, said trigger having also an upright portion extending from the forward end of said horizontal portion and articulatingly downwardly through the sear opening and forming a swinging joint with said sear solely by such interfitting of said crossed sear and trigger.

5. In a trigger and sear mechanism for firearms, the combination with a receiver having forward of its rear end a trigger-receiving notch in its lower side and having in its lower side close to its rear end a sear-receiving notch and a striker slidingly mounted within and relative to the receiver, of a spring-tensioned sear having an upstanding striker-engaging finger at its rear end extending through said sear notch in the receiver and a shank portion mounted below the receiver and having its rearward portion spaced from the bottom of the receiver and adapted to swing therefrom, but tensioned to return theretowards, said shank portion having an upright opening therethrough spaced forwardly from said trigger-receiving notch in the receiver, and a trigger having at its upper rear end a projection extended upwardly into the trigger notch in the receiver and having a horizontally-disposed portion extending forwardly from said projection to said opening in the sear and fitting between the bottom of the receiver and the shank of the sear, said trigger having also an upright portion extending from the forward end of said horizontal portion and articulatingly downwardly through the sear opening and forming a swinging joint with said sear solely by such interfitting of said crossed sear and trigger.

6. In a trigger and sear mechanism for firearms having a receiver and a striker movably mounted relative to the receiver, the combination of a spring tensioned sear having a striker-engaging portion at one end, and having an intermediate portion spaced slightly from the receiver and adapted to be swung therefrom but tensioned to return theretowards, said sear having a hole therethrough near said intermediate portion and an angular-shaped trigger having a horizontal portion located in the said space between the receiver and the intermediate portion of the sear and having an arm depending from one end of said horizontal portion and immediately passing through said hole in the sear and extending downwardly to form a finger piece so that rearward movement of the finger piece swings the trigger on the sear adjacent said hole in the sear, the remote end of the horizontal portion of the trigger bearing on the adjacent side of the receiver as a sliding fulcrum and pries the striker-engaging portion of the sear from engagement with said striker, a swinging joint being formed between said sear and trigger solely by the said shape and interfitting crossing of said members and their said location adjacent said receiver.

7. In a trigger and sear mechanism for firearms having a receiver and a striker movably mounted relative to the receiver, the combination of a spring-tensioned sear having a striker-engaging portion at one end, and having an intermediate portion spaced slightly from the bottom of the receiver and adapted to be swung therefrom but tensioned to return theretowards, said sear having an upright hole therethrough near said intermediate portion, and an angular-shaped trigger having a horizontal portion located in the said space between the bottom of the receiver and the intermediate portion of the sear and having an arm depending from one end of said horizontal portion and immediately passing through said hole in the sear and extending downwardly to form a finger piece so that rearward movement of the finger piece swings the trigger on the sear adjacent said hole in the sear, the remote end of the horizontal portion of the trigger bearing on the adjacent side of the receiver as a sliding fulcrum and pries the striker-engaging portion of the sear from engagement with said striker, a swinging joint being formed between said sear and trigger solely by the said

shape and interfitting crossing of said members and their said location adjacent said receiver.

8. In a trigger and sear mechanism for firearms having a receiver and a striker movably mounted relative to the receiver, the combination of a spring-tensioned sear having a striker-engaging portion at its rear end and secured at its other end to the receiver, and having an intermediate portion spaced slightly from the bottom of the receiver and adapted to be swung therefrom but tensioned to return theretowards, said sear having an upright hole therethrough near said intermediate portion and an angular-shaped trigger having a horizontal portion located in the said space between the bottom of the receiver and the intermediate portion of the sear and having an arm depending from the front end of said horizontal portion and immediately passing through said hole in the sear and extending downwardly to form a finger piece so that rearward movement of the finger piece swings the trigger on the sear adjacent said hole in the sear, the rear end of the horizontal portion of the trigger bearing on the adjacent side of the receiver as a sliding fulcrum and pries the striker-engaging portion of the sear from engagement with said striker, a swinging joint being formed between said sear and trigger solely by the said shape and interfitting crossing of said members and their said location adjacent said receiver.

9. In a trigger and sear mechanism for firearms having a receiver and a striker movably mounted relative to the receiver, the combination of a sear engaging said striker when the gun is cocked and having a transversely extending passage extending through the vertical thickness of the sear and providing a fulcrum on said sear and a trigger with a horizontal portion having a lower face adapted to pivot and slide upon said fulcrum of the sear, the forward upper face of said horizontal part of the trigger bearing against the lower side of the receiver, said trigger having an arm depending from said horizontal portion adjacent the said passage and immediately extending loosely through said passage of the sear so that a swinging joint is formed solely by the interfitting of said crossed sear and trigger and rearward movement of said depending portion of the trigger moves the trigger about its bearing point on the receiver and pries the sear out of engagement with the striker.

10. In a trigger and sear mechanism for firearms having a receiver and a striker movably mounted relative to the receiver, the combination of a sear engaging said striker when the gun is cocked and having a transversely extending passage extending through the vertical thickness of the sear and providing a fulcrum on said sear and a trigger having a substantially right angle bend therein adapted to turn on said fulcrum, the upper arm of said trigger being above said passage and normally parallel to said receiver, with the forward upper face of said horizontal part of the trigger bearing against the lower side of the receiver and the other arm of the trigger depending loosely through said passage in the sear so that a swinging joint is formed solely by the interfitting of said crossed sear and trigger and rearward movement of said depending portion of the trigger moves the trigger about its bearing point on the receiver and pries the sear out of engagement with the striker.

NICHOLAS L. BREWER.