935,314.

G. S. LEWIS.

REPEATING FIREARM.

APPLICATION FILED MAY 1, 1909.

Patented Sept. 28, 1909.

2 SHEETS—SHEET 1.

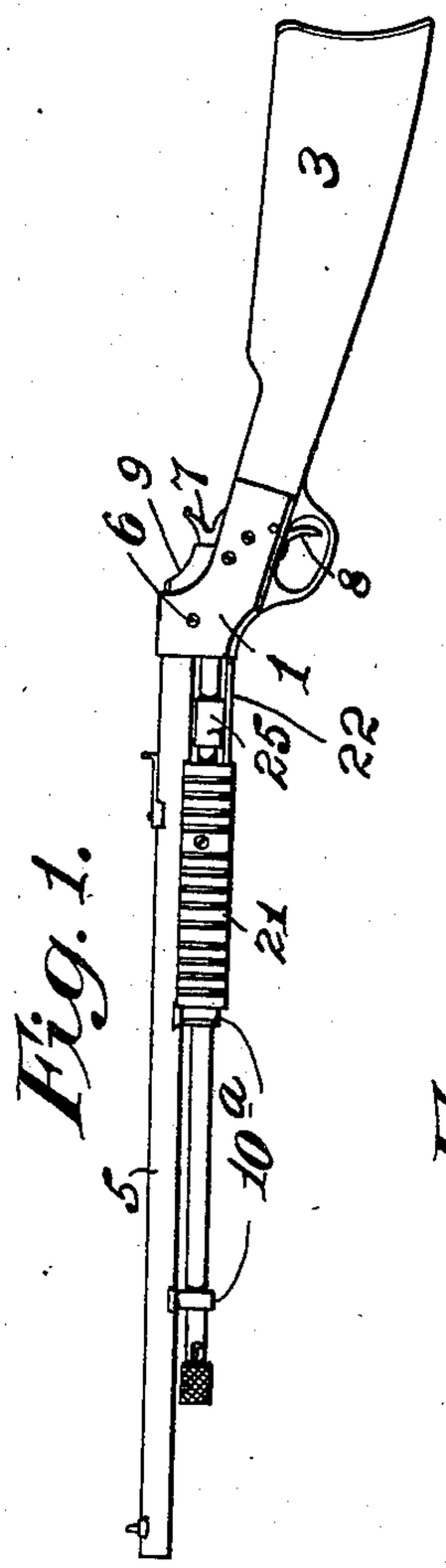

Fig. 1.

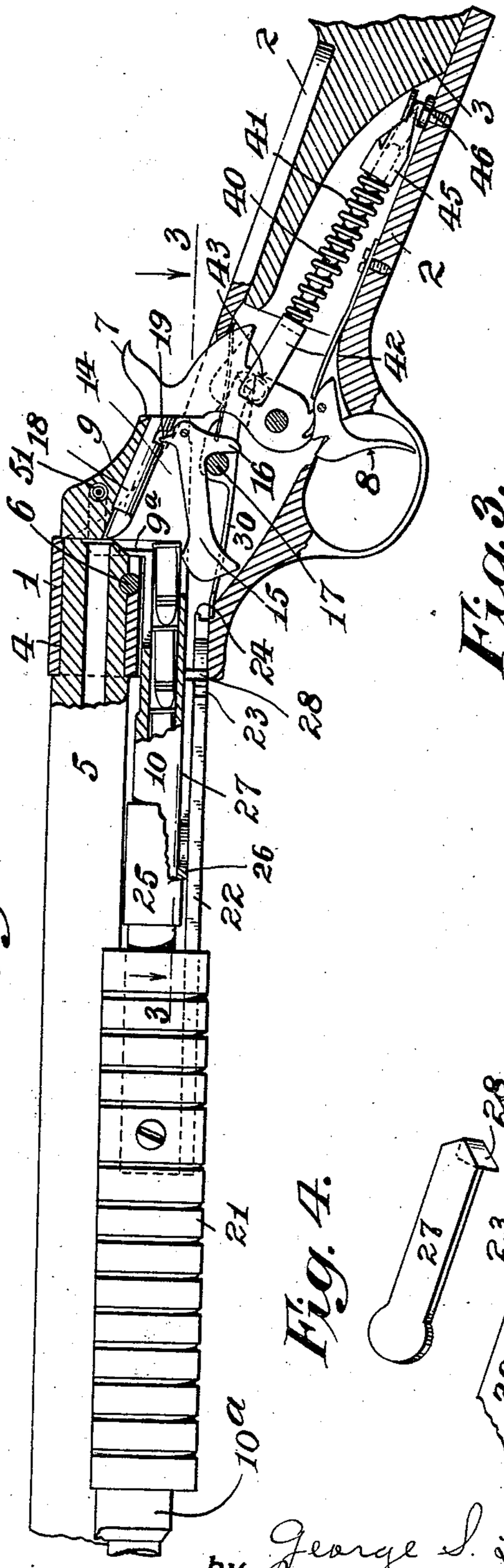

Fig. 2.

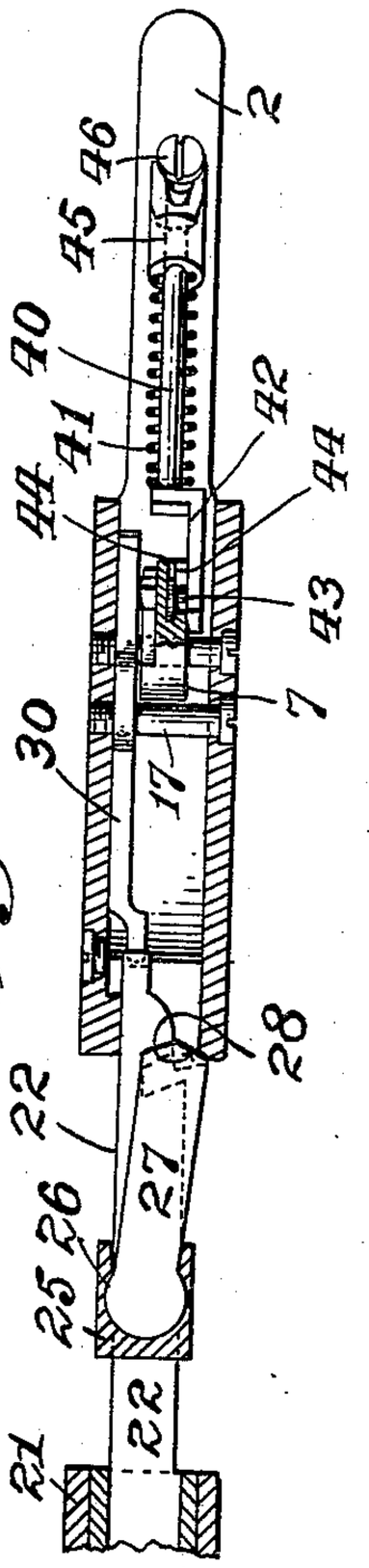

Fig. 3.

Fig. 4.

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2 SHEETS—SHEET 2.

Fig. 5.

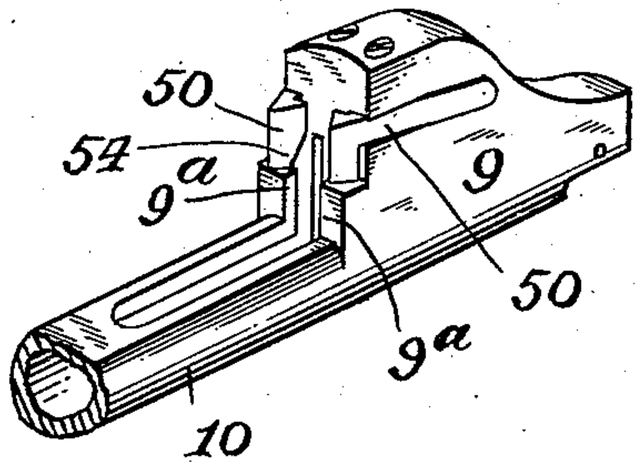


Fig. 6.

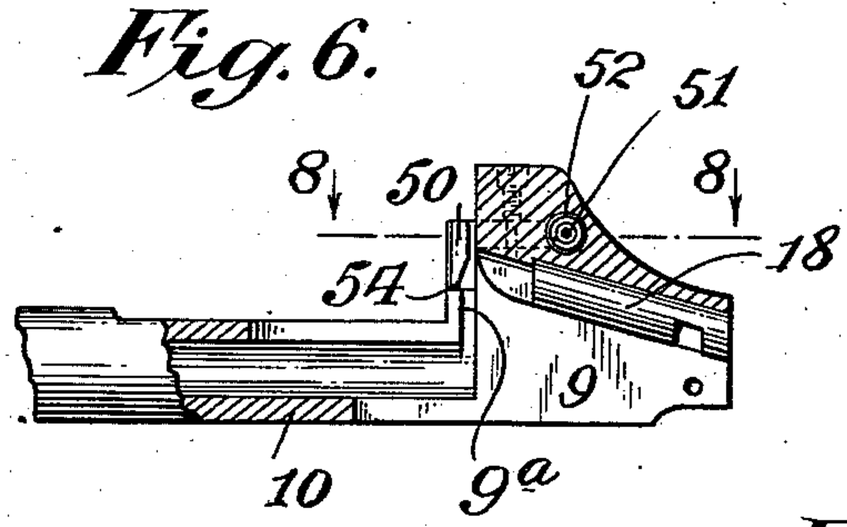


Fig. 7.

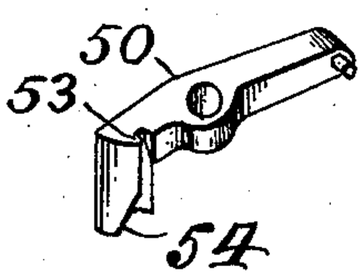


Fig. 9.

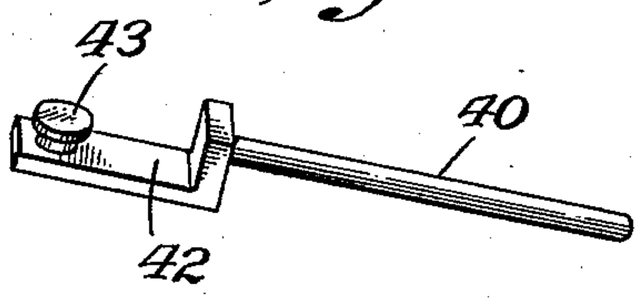
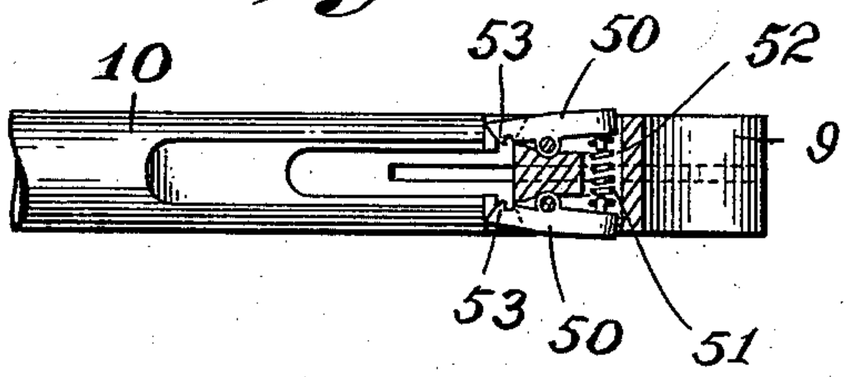


Fig. 8.



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UNITED STATES PATENT OFFICE.

GEORGE S. LEWIS, OF CHICOPEE FALLS, MASSACHUSETTS, ASSIGNOR TO J. STEVENS ARMS & TOOL COMPANY, OF CHICOPEE FALLS, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

REPEATING FIREARM.

935,314. Specification of Letters Patent. Patented Sept. 28, 1909.

Application filed May 1, 1909. Serial No. 493,266.

To all whom it may concern:

Be it known that I, GEORGE S. LEWIS, a citizen of the United States, residing at Chicopee Falls, in the State of Massachusetts, have invented certain new and useful Improvements in Repeating Firearms, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

This invention relates generally to repeating firearms of the type of that shown in Letters Patent of the United States No. 852,241, dated April 30, 1907, in which the breech block is moved backward and forward to extract the empty shell, cock the hammer and insert a fresh cartridge in the chamber of the barrel, through connection with a grip piece which slides longitudinally with respect to the barrel, and while some features of the invention are more or less directly concerned with features of construction shown and described in said Letters Patent and all of the features of the invention have been designed and are explained herein with reference to their use in such a firearm as that shown and described in said Letters Patent, nevertheless some of the features of the present invention are capable of use with other features of construction than those shown and described in said Letters Patent.

One object of the invention is to improve the structure of the breech locking devices shown in said Letters Patent with a view of enabling such devices to better withstand the repeated shocks of discharge and to be more readily accessible for examination, cleaning and repair.

Another object is to provide an improved connection between the coiled main spring and the hammer so as to permit the hammer to be properly engaged by the hammer lock hereinafter referred to and to prevent lateral displacement of such spring and its stem with respect to the hammer; and a further object is to improve the construction of the cartridge feeding and extracting devices in a firearm such as is shown in said Letters Patent.

The invention will be more fully explained hereinafter with reference to the accompanying drawings in which it is illustrated and in which—

Figure 1 is a view in side elevation of a repeating rifle which embodies the invention. Fig. 2 is a detail view, on a larger scale, partly in side elevation and partly in longitudinal section, of so much of the rifle shown in Fig. 1 as is necessary to enable the application of the invention thereto to be understood. Fig. 3 is a detail view in section, on the plane indicated by the line 3—3 of Fig. 2, looking in the direction of the arrows. Fig. 4 is a detail view, in perspective, showing a portion of the grip slide and the breech latch. Fig. 5 is a detail view, in perspective, showing the rear portion of the magazine tube, the breech block and the cartridge feeding and extracting devices. Fig. 6 is a detail view of the same in longitudinal section. Fig. 7 is a detail view, in perspective, of one of the extractors. Fig. 8 is partly a top view and partly a horizontal section on the plane indicated by the line 8—8 of the parts shown in Fig. 6. Fig. 9 is a detail view, in perspective, of the main spring plunger bracket and wire or stem.

For convenience and to enable the present improvements to be more readily understood, the same reference characters will be employed herein, as far as possible, as are employed in the specification of said Letters Patent to indicate like parts.

The frame 1, provided with the usual tangs 2 for attachment of the stock 3, has a socket 4 to receive the shouldered end of the barrel 5, which is held in place by the screw 6. In the frame are pivoted, as usual, the spring actuated hammer 7 and trigger 8.

The breech block 9, arranged to slide in the frame 1, is formed with or secured to the magazine tube 10, which slides in guides 10^a on the underside of the barrel 5. The breech block is slotted vertically, as at 14, and has pivoted in such slot a lifter 15, the rear lug 16 of which coöperates with the hammer 7 to cock the same and to throw the forward end of the lifter up to eject the empty shell and place the fresh cartridge in position in line with the chamber of the barrel, in the rearward movement of the breech block, and with the abutment 17, in the forward movement of the breech block, to throw the forward end of the lifter down into position to receive a fresh cartridge from the magazine. The firing pin 18 is located in the breech block, as usual, and coöperates with the projection 19 on the upper surface of the lifter, near its rear end.

All of the parts thus far referred to are

constructed and operate substantially as shown and described in said Letters Patent, and further explanation thereof is not necessary.

The grip piece 21, having a limited range of movement with respect to the magazine tube 10, is, by such limited relative movement, connected with the magazine tube and breech block to unlock the breech block and to effect the rearward and forward movement thereof and is disconnected therefrom, at the end of the forward movement, to lock the breech block in firing position. The means by which the grip piece is connected with the breech block operate in a manner generally similar to that of the corresponding parts of the structure shown and described in said Letters Patent, but they have been modified for the purpose of securing ample strength to withstand successive discharges of the firearm as well as to locate them where they are the more readily observable and accessible. As shown in Figs. 2, 3 and 4, the grip piece 21 has connected thereto a slide 22 which is formed near its rear end with a cam slot 23 and at its rear end with an overhanging lip 24 for coöperation with a safety locking lever 30 which forms no part of the present invention and need not be further described. A sleeve 25 on the magazine tube has in its underside a seat 26 for the end of a latch 27 which swings in a horizontal plane and has on its under side, at its rear end, a lug 28 which coöperates with the cam slot 23 in the slide 22. At the last of the forward movement of the grip piece the cam slot 23 acts upon the lug 28 to swing the latch outward so that the lug shall stand in front of the frame 1 and thereby lock the breech block which is connected with the latch 27 through the magazine tube 10 and the sleeve 26, in firing position. The slide 22 is normally locked in its forward position by the locking lever 30, but when it is released by the locking lever it is then free to be moved rearwardly and in the first of such movement, which is with respect to the magazine tube and breech block, the cam slot 23 acts upon the lug 28 to draw it, with the latch, inwardly from in front of the frame, at the same time coupling the magazine tube and breech block, through the latch, to the slide 22 and grip piece, so that in the further rearward movement of the grip piece the breech block is carried rearwardly with it. It will be observed that through the location of the latch 27 it can have such length that the thrust on the latch and the adjacent parts is but slightly out of the line of movement of the parts, so that the liability to breakage is reduced and the latch and its adjacent parts, including the lug, can also have such thickness of metal as to have ample strength. Moreover the latch and the cam slot in the slide are exposed to view when the slide is in its forward position so that it is possible always to examine their condition and to remove any particles of dirt that might get into the slot, while the shoulder on the frame against which the latch bears is external to the frame and receives the thrust through the body of the latch as well as through the lug on the latch.

The locking lever 30, above referred to, cooperates with the shoulders on the hammer 7, formed by milling out the side of the hammer. The whole of the rear face of the hammer, therefore, is not as available, as would otherwise be the case, as a bearing for the rod 40 which supports the coiled main spring 41 which, in the construction shown, is employed. To secure a proper bearing for the spring and to keep the spring well back of the hammer, so that it shall not interfere with the rear end of the locking lever 30, as well as to prevent the lateral displacement of the spring with respect to the hammer, the rod 40 has secured thereto a bracket 42, which is offset from the line of the rod 40, as clearly shown in Figs. 3 and 9, and has on its inner face a flanged stud 43 which engages a T-slot 44 milled in the left hand side of the hammer. Through the bracket and stud the thrust of the spring is exerted practically in line with the hammer centrally while the spring, acting against the rear end of the bracket as an abutment, can be terminated sufficiently in rear of the hammer to prevent interference with the rear end of the lever 30, and the flanged or headed stud, engaging the T-slot in the hammer, prevents lateral displacement. The rear end of the rod 40 slides in a shoe 45 which bears against a screw 46 secured in the frame.

The breech block 9, as already stated, is formed with or secured to the rear end of the magazine tube 10, which is slotted, forward of the breech block to permit the fresh cartridge to be raised through it by the lifter 15. The face of the breech block 9 is formed with flanges 9^a which are extended for a short distance above the magazine tube but not into line with the chamber of the barrel. These flanges 9^a do not hold the head of the cartridge snugly against the face of the breech block, since such holding of the cartridge is otherwise provided for, and fit the head of the cartridge but loosely, their function being merely to guide the cartridge in its upward movement on the lifter. Above the flanges 9^a the breech block is provided with two oppositely acting pivoted extractors 50, the tails of which are pressed outwardly by a common spring 51 which is placed loosely in a transverse recess 52 in the breech block. The edges 54 of the flanges 53 of the extractors are inclined backward toward the face of the breech block and, biting into the body of the cartridge, draw the head of the same flat against the face

of the breech block. The employment of a common spring, acting upon both extractors, gives equal tension to both and insures proper lining up of the cartridge with respect to the chamber of the barrel without requiring great accuracy in the machining of the parts, while also insuring equal friction on both sides of the cartridge so that its proper movement is assured.

I claim as my invention:

1. In a repeating firearm, the combination with a frame, a barrel, a longitudinally movable breech block and grip-piece and a magazine tube, of a slide secured to the grip piece under the barrel and having a cam slot and a latch pivoted upon the under side of the magazine tube forward of the frame and having a lug to coöperate with the cam slot in the slide and adapted to bear at its end against the forward end of the frame.

2. In a firearm, the combination with a frame, a hammer, a spiral main spring and spring supporting rod, of a bracket secured to the main spring wire or stem and offset and having a stud on its inner face to engage the hammer.

3. In a firearm, the combination with a frame, a hammer, a spiral main spring and spring supporting rod, of a bracket secured to the main spring wire or stem and offset and having a stud on its inner face to engage the hammer, the hammer having in its side a T-slot and the stud on the bracket being T-headed or flanged to engage said slot.

4. In a repeating firearm, the combination of a frame, a barrel and a magazine tube, of a longitudinally movable breech block having fixed flanges below the barrel, oppositely acting extractors pivoted in the breech block and a common spring located in a chamber in the breech block and acting upon the tails of both of the extractors.

5. In a repeating firearm, the combination of a frame, a barrel and a magazine tube, of a longitudinally movable breech block having fixed flanges below the barrel, oppositely acting extractors pivoted in the breech block and a common spring located in a chamber in the breech block and acting upon the tails of both of the extractors, the flanges on the breech block fitting loosely the head of the cartridge and the edges of the flanges of the extractors being inclined toward the face of the breech block and drawing the head of the cartridge flat against the same.

This specification signed and witnessed this 27th day of April, A. D., 1909.

GEO. S. LEWIS.

Signed in the presence of—

E. C. Fink,

W. S. Page.