

C. F. LEFEVER.  
 FIREARM.  
 APPLICATION FILED JAN. 9, 1908.

944,448.

Patented Dec. 28, 1909.

3 SHEETS—SHEET 1.

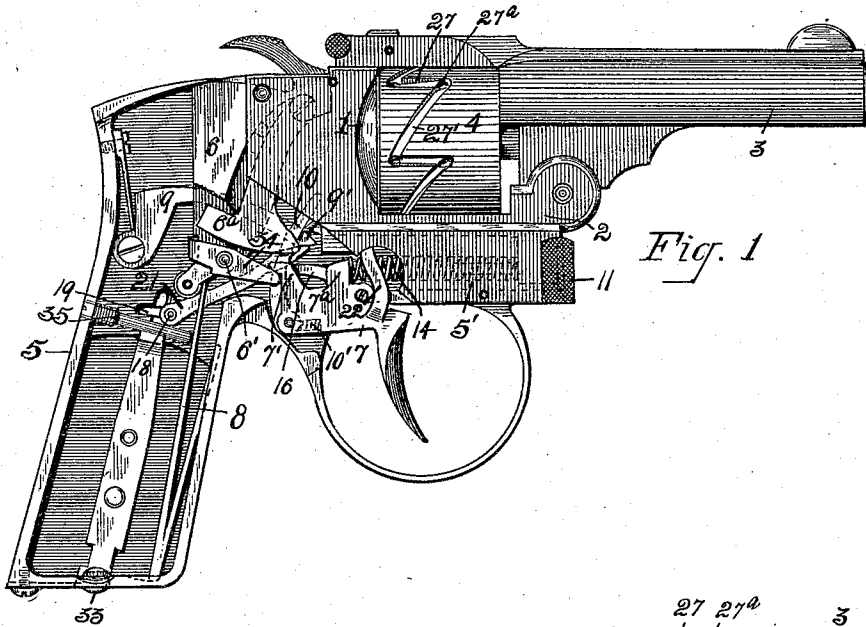


Fig. 1

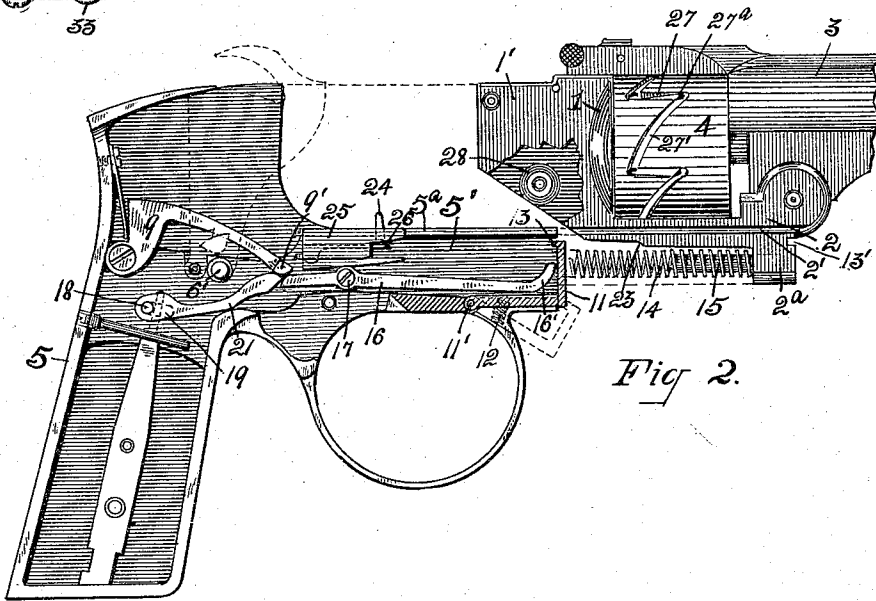


Fig. 2.

WITNESSES.  
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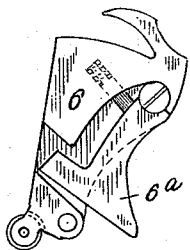


Fig. 3.

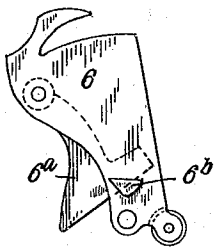


Fig. 4.

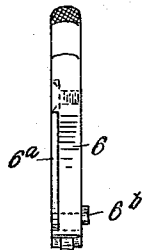


Fig. 5.

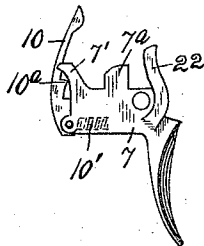


Fig. 6.

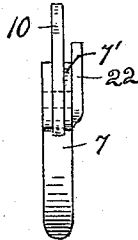


Fig. 7.

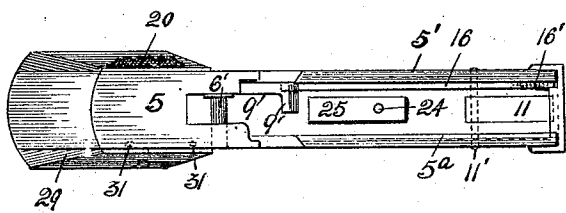


Fig. 8.

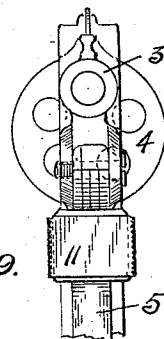


Fig. 9.

WITNESSES

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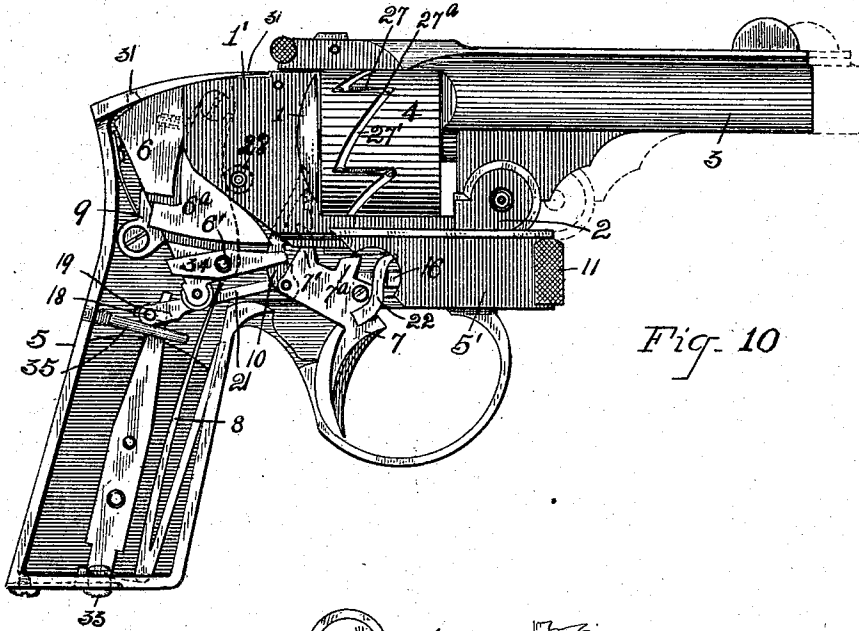


Fig. 10

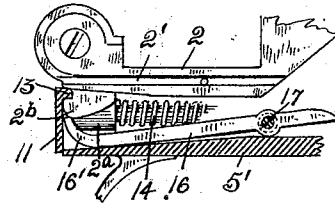


Fig. 11

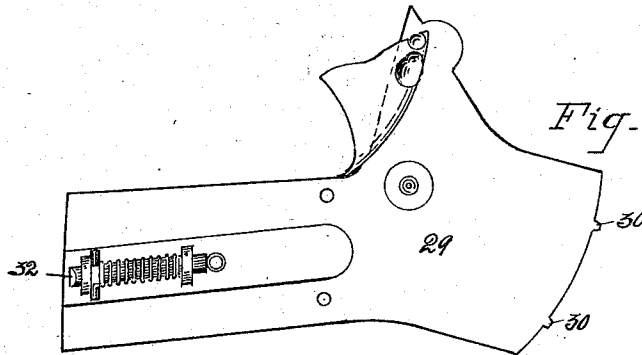


Fig. 12

WITNESSES.

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# UNITED STATES PATENT OFFICE.

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## FIREARM.

944,448.

Specification of Letters Patent.

Patented Dec. 28, 1909.

Application filed January 9, 1908. Serial No. 410,000.

### *To all whom it may concern:*

Be it known that I, CHARLES F. LEFEBVER, a citizen of the United States, and a resident of Toledo, in the county of Lucas and State of Ohio, have invented a certain new and useful Firearm; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to fire-arms and particularly to small arms of the class in which the action of recoil after a discharge automatically operates to cock the hammer and rotate the cylinder to successively move the chambers thereof in register with the barrel.

The object of my invention is the provision of an improved and highly efficient revolver of this type, which may be cocked in the first instance by the action on the hammer of the trigger when pulled, and subsequently automatically cocked by the action of recoil after a discharge, and which is provided with a safety lock for preventing a recoil of the barrel and cylinder except when the trigger is pulled, thus preventing an accidental recoil and consequent discharge of the fire-arm, as by accidentally pushing the barrel back by hand, dropping the fire-arm, or from other causes.

A further object of my invention is the provision in combination with the firing parts, of means which is movable to cause the fire-arm to automatically repeat its firing in rapid succession as many times as there are cartridges in the cylinder, or to cause the trigger to be pulled for each discharge, as with the ordinary revolver.

Further objects of my invention, among others, are the provision of simple and improved means for rotating the cylinder at each recoil action thereof for successively moving its chambers in register with the barrel; the provision of means for preventing a premature discharge of the fire-arm, or until its recoil parts have returned to normal position after a recoil; and the provision of simple means for rendering a disassembling of the parts rapid and easy.

The operation, construction and arrangement of the parts of the invention are fully described in the following specification, and

illustrated in the accompanying drawings, in which,—

Figure 1 is a side elevation of a revolver embodying the features of my invention, with the side-plate of the stock removed and the parts shown in normal and uncocked position, and adapted to automatically repeat the firing. Fig. 2 is a similar view with the sliding recoil parts moved forward from the stock and both partly in section, the hammer and trigger and attached parts removed and the remaining parts in position to prevent an automatic repeating of the firing. Figs. 3, 4 and 5 are different views of the hammer. Figs. 6 and 7 are different views of the trigger and its attached sear engaging piece. Fig. 8 is a top plan view of the stock with the sliding recoil parts removed. Fig. 9 is a front end elevation of the revolver with the stock partially broken away. Fig. 10 is a side elevation of the revolver with the side-plate of the stock removed and the parts shown in the positions which they assume when the sliding parts are at their limit of backward recoil movement. Fig. 11 is a reverse side view of the lower portion of the sliding parts and their stock guiding-part from that shown in Figs. 1, 2 and 10, with said guiding-part in longitudinal section, and Fig. 12 is an inner side view of the removable stock-plate.

Referring to the drawings, 1 designates the breech-piece, which has the lower forwardly extending part 2; 3 the barrel, which is pivoted to said part; and 4 the revolving cartridge cylinder. All of these parts are capable of sliding to and fro on the forwardly extending longitudinally-channeled part 5' of the handle or stock 5, said part being formed with ribs 5<sup>a</sup>, which work in complementary grooves 2' provided in the sliding part 2, as shown.

Situated within the stock or handle 5 and pivoted thereto, as at 6', is the hammer 6, which carries the pivoted spring-pressed piece 6<sup>a</sup> with which the tail-piece 7' of the trigger 7 is intended to engage when pulled to effect a cocking of the hammer, and has its lower end extended and carrying a roller for coaction with the main-spring 8 in the usual or any suitable manner.

9 designates the sear, which is shown as being pivoted to the stock side to the rear of the hammer and as extending over the spur or lug 6<sup>b</sup> on the hammer side, with

which its notches are intended to engage to retain the hammer in full or half-cocked positions, as best shown in Fig. 2. The free end of the sear extends forwardly of the hammer and is formed in advance thereof with the lateral spur or projection 9'.

In order to prevent a premature firing of the revolver during the recoil action thereof, the trigger 7 is provided with a safety-finger 10, which is pivoted at its lower end to the rear of the trigger-head, as shown, and extends upwardly therefrom to the rear of the spur or projection 9' of the sear with which it is normally held in engagement by the action thereon of a coiled spring 10', which is carried within a socket in the trigger-head, as shown in Figs. 1 and 6. The finger 10 is provided on its forward surface with a tooth 10<sup>a</sup>, which is intended to engage and lift the sear from engagement with the hammer lug 6<sup>b</sup> at a predetermined point in the pulling movement of the trigger, and has its upper end projected in position to be engaged by the breech-piece 1 and moved out of coacting relation with the sear on the rearward movement of the breech-piece, as shown in Fig. 10, thus preventing a release of the hammer from cocked position until the sliding parts have returned to their normal forward position and the cylinder 4 has been rotated to place the next cartridge in position for firing. It is thus apparent that the finger 10 serves as an intermediary between the trigger and sear and only stands in position to trip the sear on a pulling of the trigger when the sliding parts are in normal or firing position.

The sliding-parts have their forward movement limited by the stop-piece 11, which is pivoted to the stock part 5', as at 11', and has its forward end turned upward in the path of movement of the boss 2<sup>a</sup> at the forward end of the part 2 of the breech-piece. The side edges of said upwardly turned portion are bent around the opposite sides of the stock part 5' to form finger-grips to facilitate a lowering of the stop-piece against the tension of the compression-spring 12 when it is desired to remove the sliding-parts from the stock, as shown in Fig. 2. The stop-piece 11 has an inturned lip 13 at its upper end adapted to project within a groove 13' in the end of the boss 2<sup>a</sup> to prevent a lowering of the stop-piece except when the sliding-parts are moved rearwardly from normal position to disengage said lip and groove.

The sliding-parts are normally held at their limit of forward movement by the action of the coiled compression-spring 14, which is carried by a pin 15 projecting rearwardly from the boss 2<sup>a</sup> on the breech extension part 2 and has its rear end in abutment with a lug 7<sup>a</sup> on the trigger top, thus adapting it to act both on the sliding-parts

and the trigger to yieldingly maintain them in normal positions, as shown.

To adapt the revolver to automatically repeat its fire until all of the cartridges in the cylinder have been discharged, I pivot a lever 16 within the stock part 5' to one side thereof, as at 17 (see Figs. 2 and 11), and have its rear end terminating beneath the forward end of the sear 9 in contiguous position thereto and its forward end terminating adjacent to the forward end of the stock part 5' and turned up as shown at 16'. Carried within the stock 5 by a pivot or pin 18, which movably projects through a slot 19 in the stock side and carries a thumb-button 20 at its outer end, (see Fig. 8), is a finger 21, which has its forward end tapered and resting on the rear end of the lever 16. When the button 20 is pushed forward the nose or tapered end of the finger 21 is intended to work between the rear end of the lever 16 and the sear end and effect a raising of the forward end of the lever so that its upturned end stands in the path of movement of the lug 2<sup>b</sup> which is formed on the contiguous side of the boss 2' on the breech-part 2. It is thus apparent that on the return of the sliding-parts to their normal forward positions after a recoil, the lug 2<sup>b</sup> engages and forces the upturned end of the lever 16 down and effects a consequent raising of the rear end of the lever, which acts on the sear through the interposed end of the finger 21 to release the same from engagement with the hammer and permit a discharge of the next cartridge in the cylinder. The recoil of the sliding-parts from this discharge recocks the hammer, which is again released in the same way as before as soon as the sliding-parts return to their normal forward positions, thus causing the discharge of the cartridges in the cylinder to be automatically repeated with great rapidity.

Projecting upwardly from one side of the trigger-head in advance of its pivot is a finger 22, the nose of which, when both the breech-part 2; and the trigger are in normal positions, is intended to stand in position to engage the shoulder 23 on the contiguous side of the breech-part 2 to prevent a rearward movement of the sliding-parts until the trigger has been pulled sufficiently to draw the finger down out of engaging position with said shoulder. With this form of lock it is possible to stop the automatic repeating of the fire at any time by simply releasing the trigger to permit it to return to normal position.

The cylinder 4 is caused to partially rotate at each recoil movement of the sliding-parts to successively move the chambers thereof in register with the barrel, due to a zig-zag groove formed circumferentially thereon working over a pin 24, which is

mounted in the portion 25 of the stock and yieldingly projected within the groove by the action of a flat-spring 26 on which it rests. The cylinder groove comprises the longitudinally-disposed parallel portions 27, which correspond in number to the cartridge chambers in the cylinder, and the diagonally-disposed portions 27', which successively connect the opposite ends of the portions 27, as shown. The portions 27 are equal in length to the recoil movement of the sliding parts, and have their bottoms forwardly inclined and terminating in abrupt depressions which form the shoulders 27<sup>a</sup> in the planes of the rear walls of the diagonal portions 27'. It is thus apparent that on the rearward movement of the sliding parts the pin 24 will be depressed by the incline of the associated way 27 to permit it to pass over the shoulder 27<sup>a</sup>, and at the limit of such rearward movement will be forced outwardly by the action of its spring into the associated way 27' in abutment with said shoulder, so that on the forward movement of the sliding parts the cylinder will be constrained to turn due to the cooperating action of the pin and diagonal way 27'.

In Figs. 2 and 10, 28 designates a roller, which is carried between the spaced rearwardly extended sides 1' of the breech-piece 1 and intended to coact with the forward face of the hammer 6 to cock the same on the recoil movement of the sliding parts.

In Fig. 12, 29 designates the removable side plate of the handle or stock, which plate is provided with spurs 30 which fit into sockets 31 in the stock top, as shown in Figs. 8 and 10. The lower end of the plate is provided with a spring-catch 32, the outer end of which is intended to engage a registering depression in the stock end. To facilitate a removal of the plate from the stock, an external spring-button 33 is provided at the base of the depression and is adapted to be pressed to effect a compression of the catch 32 against the tension of its spring.

In Figs. 1 and 10, 34 designates a tumbler piece, which is carried at the side of the hammer 6 on the pivot thereof and has its rear end turned to engage the back of the hammer to limit the relative pivotal movement thereof. The forward end of the tumbler is extended in position to coact with the under side of the tail-piece 7' of the trigger, as shown in Fig. 1, whereby to cause a cocking movement of the hammer to move the trigger on its pivot so that when the hammer is in full cocked position the trigger will have a fixed pulling position different from its normal position, thus shortening the length of pull of the trigger to release the sear and making a rapid firing possible.

35 designates an adjustable stop pin for the main-spring 8. The inner end of this pin is in abutment with the free end of the

spring and its outer end is threaded through the rear wall of the stock to enable the spring to be adjusted relative to the hammer as the rebound of the hammer to safety-cocked position may require, or in other words it is necessary to adjust the spring-tension so that the spring-tension will not be brought to bear on the hammer until it has rebounded to safety-cocked position.

In practice the revolver embodying my invention is fired in the first instance by pulling the trigger to cause the tail-piece 7' thereof to act on the hammer-piece 6<sup>a</sup> to raise the hammer to cocked position at which point the tail-piece 7' releases the hammer-piece 6<sup>a</sup> to permit the discharge, as in the self-cocking revolver. On the recoil of the sliding parts, occasioned by the discharge, the hammer 6 is automatically re-cocked and the safety-finger 10 moved out of engagement with the sear 9 to prevent a release of the hammer until the sliding parts have returned to their normal positions. On the recoil and forward movements of the sliding parts the cylinder 4 is also rotated to bring the next cartridge in position to be fired, due to the cooperating action of the yielding pin 24 and cylinder groove, as above described. Should the thumb-button 20 and its attached finger 21 be in rearward position the fire will not be repeated until the trigger is pulled to release the sear from the hammer, but should said thumb-button and finger be in forward position the lug 2<sup>a</sup> on the breech-part 2 will coact with the upturned end 16' of the lever 16 at the limit of forward movement of the sliding parts, after a recoil action thereof, and effect an automatic release of the sear from the hammer, thus causing the fire to be repeated as many times as there are cartridges in the cylinder, provided, of course, the trigger is maintained in pulled position. Should the trigger be released the firing will be stopped due to the nose of the finger 22 thereon engaging the shoulder 23 on the breech-part 2 to prevent a recoil movement of the sliding parts. The sliding parts may be easily and quickly removed from the stock by breaking the breech, barrel and cylinder in the usual manner to release the cylinder groove from engagement with the pin 24, and then drawing the stop-piece 11 down to permit the sliding parts to be drawn outwardly from the stock part 5', as shown in Fig. 2.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is,—

1. In a recoil fire-arm, the combination of the stock, a recoil part, a sear, a member disposed longitudinally of the stock and pivoted thereto, said member having one end disposed to coact with and be moved by the recoil part at a predetermined point in its

forward movement and its other end disposed to trip the sear when said member is moved as aforesaid to permit an automatic discharge.

5 2. In a recoil fire-arm, the combination with the recoil parts and the sear, of a lever movable by one of said parts at a predetermined point in the forward movement thereof, and manually controlled means movable  
10 to either effect or prevent a releasing movement of the sear when the lever is moved by the recoil part.

3. In a recoil fire-arm the combination with the sliding breech-part, the stock, and  
15 the sear, of a lever pivoted to the stock in reclining position beneath the sliding breech-part and having its forward end fashioned to be engaged and moved by a cooperating portion of the breech-part at a predetermined  
20 point in its sliding movements and its rear end positioned adjacent the sear, and means actuated by a movement of said lever to impart a releasing movement to the sear.

25 4. In a recoil fire-arm, the combination with the sliding breech-part and the sear, of a lever adapted to be moved by said breech-part at a predetermined point in its sliding movements and having its rear end disposed  
30 in contiguous position to the sear, and a manually controlled member adapted to be moved intermediate the sear and rear end of the lever to communicate a releasing movement to the former from a movement of the  
35 latter.

5. In a recoil fire-arm, the combination with the sliding recoil parts and the stock guide therefor, of an angled member pivoted to said guide to the rear of its ends and  
40 having a part turned up at the forward end

of the guide to coact with one of the recoil parts to limit the forward movement of said parts relative to the guide and provided with an inturned lip which coacts with one  
45 of the recoil parts to prevent a movement of the member on its pivot to permit a withdrawal of the recoil parts from the guide except when the recoil parts are moved slightly rearwardly from normal position.  
50

6. In a recoil fire-arm, the combination with the sliding recoil parts and the stock guide therefore, of an L-shaped member pivoted to the stock guide and normally serving as a stop for limiting the relative  
55 movements of the recoil parts and guide in one direction and cooperating with one of the recoil parts when both said parts and the member are in normal positions whereby to prevent a releasing movement of the member  
60 to permit a withdrawal of the recoil parts from the guide.

7. In a fire-arm, the combination with the hammer and trigger, said trigger having a tail-piece, of a tumbler-piece carried at the  
65 side of the hammer on the pivot thereof and having its rear end bent to the rear of the hammer to limit the relative movements thereof and its forward end projected in position to engage the under side of the trigger  
70 tail-piece to effect a pulling movement of the trigger when the hammer is cocked.

In testimony whereof I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

CHARLES F. LEFEVER.

Witnesses:

C. W. OWEN,  
HAZEL B. HIETT.