No. 789,755. PATENTED MAY 16, 1905.

J. D. PEDERSON.

RECOIL LOCK FOR FIREARMS.

APPLICATION FILED OCT. 27, 1903.

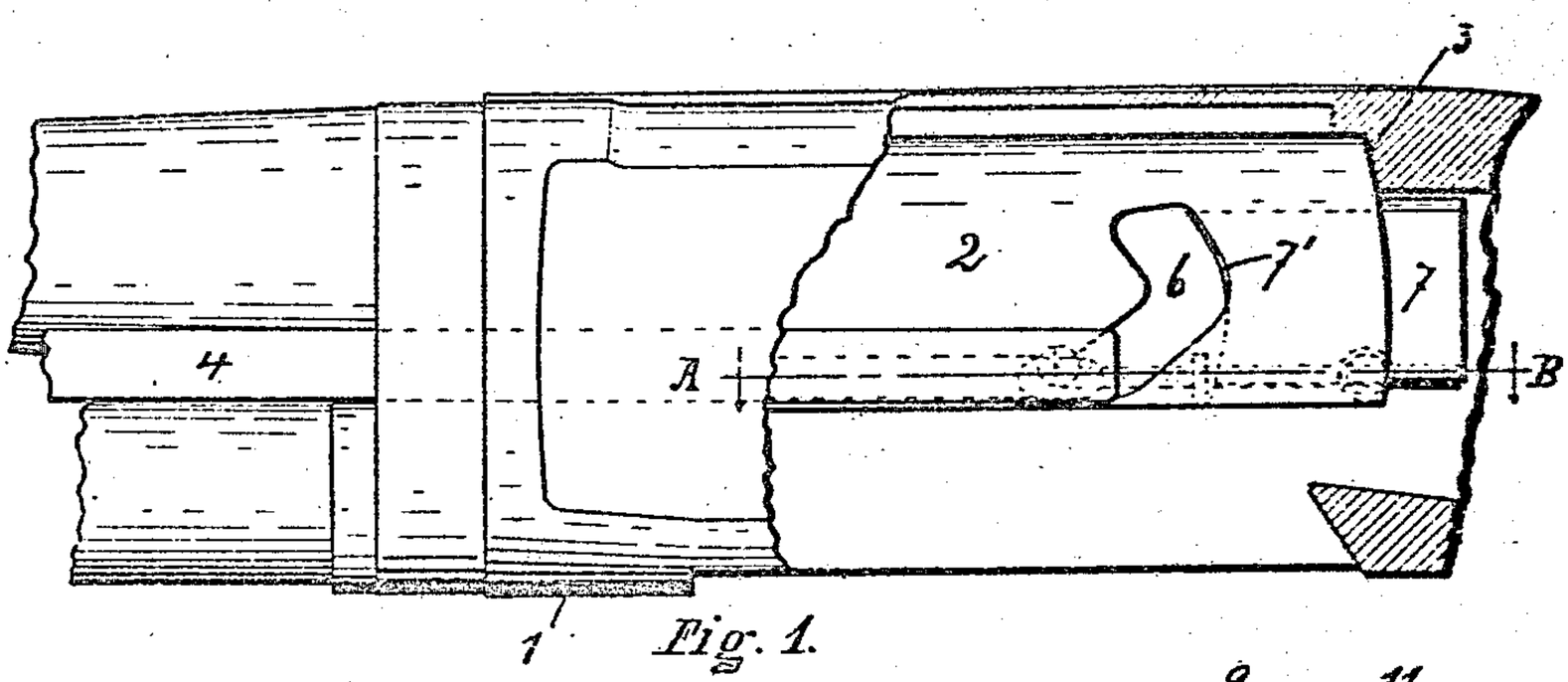


Fig. 1.

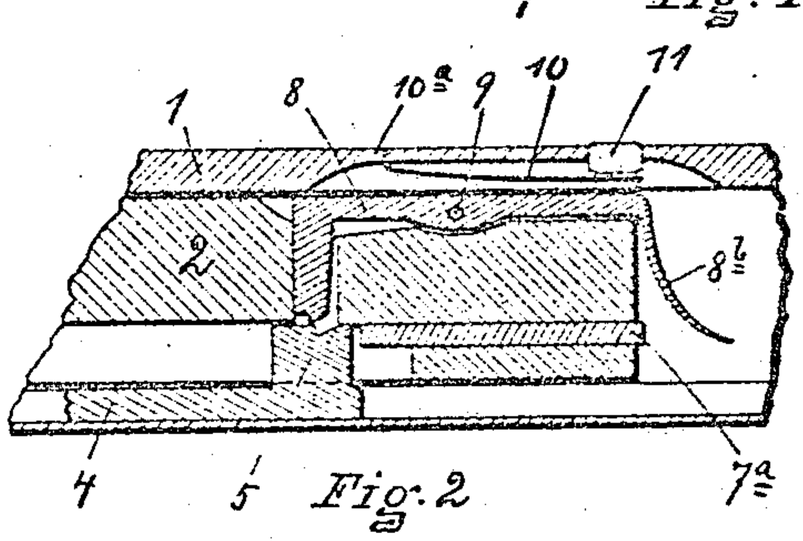


Fig. 2

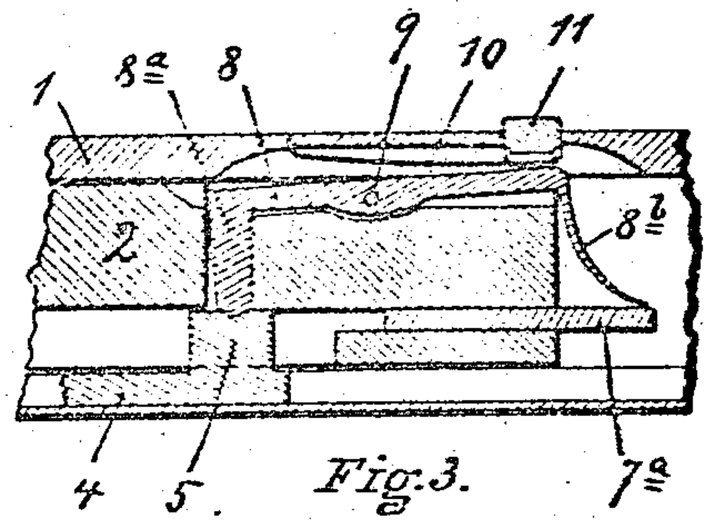


Fig. 3.

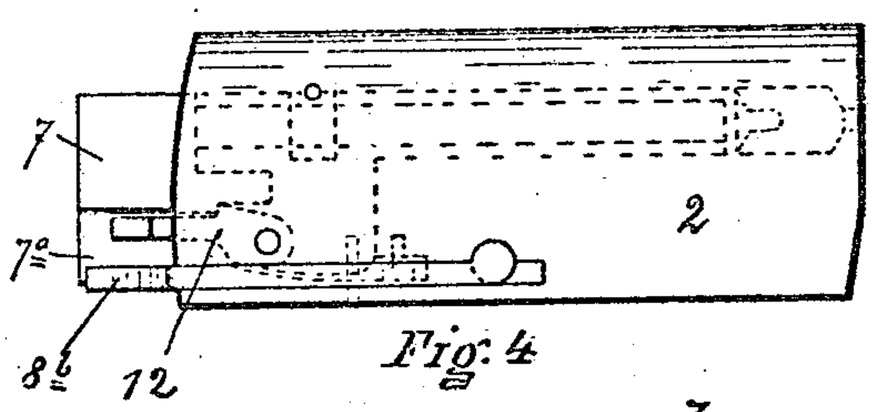


Fig. 4

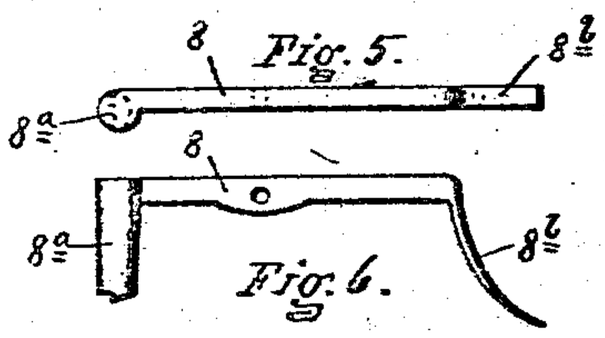


Fig. 5.

Fig. 6.

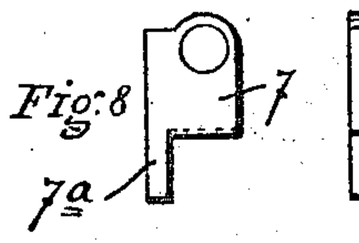


Fig. 8

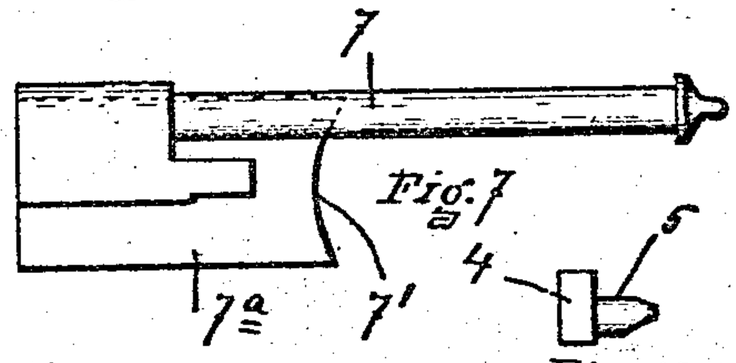
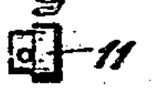


Fig. 7

Fig. 10.

Fig. 11.

Fig. 12.



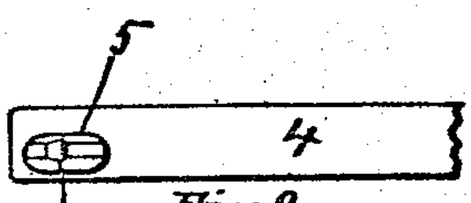


Fig. 9

Witnesses
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UNITED STATES PATENT OFFICE.

JOHN DOUGLAS PEDERSON, OF DENVER, COLORADO, ASSIGNOR TO REMINGTON ARMS COMPANY, OF ILION, NEW YORK.

RECOIL-LOCK FOR FIREARMS.

SPECIFICATION forming part of Letters Patent No. 789,755, dated May 16, 1905.

Application filed October 27, 1903. Serial No. 178,682.

To all whom it may concern:

Be it known that I, JOHN DOUGLAS PEDERSON, of Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Recoil-Locks for Firearms; and I do hereby declare that the following is a full, clear, and exact description of the invention, which 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 numerals of reference marked thereon, which form part of this specification.

The object of my present invention is to provide a recoil-lock particularly adapted to the firearm such as shown in my pending application, Serial No. 142,909, which lock is simple in construction and efficient and reliable in operation.

In the drawings, Figure 1 shows, partially in side elevation, and partially in broken section, the frame portion of a firearm together with the breech-bolt and connected operating mechanism of a construction embodying the features of my present invention. Fig. 2 shows a longitudinal section taken on line A B of Fig. 1, showing the parts below the section-line in one of the positions of the recoil-lock. Fig. 3 shows the same section in another position of the recoil-lock. Fig. 4 shows a side elevation of the breech-bolt from the opposite side to that shown in Fig. 1 in connection with a portion of the rear end of the cocking-head or firing mechanism and other details of the construction. Fig. 5 shows an edge view, and Fig. 6 shows a plan view, of the operative part of the catch or recoil-lock. Fig. 7 shows a side elevation, and Fig. 8 a rear end view, of the cocking-head and firing-pin. Fig. 9 shows a side elevation of the rear end of the operating-bar, and Fig. 10 shows the rear end view of the same. Fig. 11 shows an end view, and Fig. 12 a side view, of a push and indicator button employed in the construction.

Referring to the reference-figures in a more particular description of the device, 1 indicates the frame of the firearm, which, as before stated, is substantially of the form of construction employed in the firearms of my before-mentioned application. The frame 1 is provided with a chamber or recess, which receives the breech block or bolt 2, which is capable of a vertical and longitudinal movement therein, the same in Fig. 1 being shown in closed or breeched-up position, with the shoulder on the rear end of the breech-bolt engaging with the recoil-shoulder of the frame, as indicated at 3 in Fig. 1.

For operating the breech-bolt there is provided the sliding action-bar 4, which at its forward end is provided with a sliding handle under the barrel in the usual manner and which is not shown in the drawings. At the rear end the sliding bar 4 is provided with a fixed stud or projection 5, which engages in an angular slot 6 in one side of the breech-bolt 2 and serves to give the vertical and longitudinal movement to the breech-block when the bar 4 is moved backward and forward. The stud or projection 5 on the action or operating bar as well as engaging in the cam-slot 6 of the breech-bolt also engages with the plate-like portion 7^a of the cocking-head on the firing-pin 7. The plate 7^a operates in a suitable slot or recess in the rear end of the breech-bolt, and the forward end or edge of this plate 7^a is preferably curved, as shown at 7', to engage with the stud or projection 5 of the operating-bar. At the end of the stud or projection 5 of the operating-bar there is provided a notch which affords a shoulder 5^a. The recoil-catch 8 consists of a lever pivoted to the breech-block at 9 substantially midway of its length and provided at one end with a stud or projection 8^a, extending through a suitable opening in the body of the breech-bolt and having a tooth or catch-shoulder at its extreme end adapted to engage with the stud or projection 5 of the operating-bar and particularly with the shoulder 5^a thereof. On the other end the recoil-catch 8 is provided with a spring-arm 8^b, which is adapted to engage with the rear end of the cocking-head or more particularly with the plate-like portion 7^a thereof when the firing-pin is in its retracted and cocked position. The tension of the spring-arm 8^b of

the recoil-catch when engaged with the plate 7^a, as stated, is to throw in the opposite end of the catch so as to engage with the stud or projection 5^a on the operating-bar. For throwing out same catch there is provided a spring 10, attached to the frame at 10^a and carrying at its free end a push-button 11, which button engages on the inner end with the rear arm of the recoil-catch and as to its outer end operates through an opening in the side wall of the frame.

In aiming firearms of the construction described having a sliding handle for operating the mechanism under the barrel the operator intentionally or unintentionally draws on this operating-handle to force the arm against the shoulder, and were it not locked it would open the mechanism and place the gun in position where it could not be fired. It is to obviate this tendency more particularly that the recoil-catch described is provided, and the operation thereof is substantially as follows: Starting with the arm with the parts in position in which they are shown in Fig. 1 and which will correspond with the position immediately before firing the operator releases the firing-pin 7 by mechanism not shown except as to the sear 12. The firing-pin is impelled forward by the spring provided for that purpose, as usual, and explodes the shell. This also carries the forward cam or working face 7′ of the plate of the cocking-head into its forward position, as shown in Fig. 2. Immediately prior to the firing the spring-arm 8^b of the recoil-lock will be engaged with the rear end of the cocking-head plate 7^a and force the catching end 8^c thereof into engagement with the lock, notch, or shoulder 5^a in the end of the stud or projection 5 on the operating-bar 4. Thus the operating-bar is locked against rearward movement until such time as the recoil-lock is released. When the firing-pin moves forward, the spring-arm 8^b is freed and the recoil-catch 8 would unlock under the influence of the spring 10 except that the draw by the operator on the operating-handle of the bar 4 causes such a friction between the recoil-catch and the shoulder on the stud 5 that it will not unlock under the influence of the spring 10 provided. If the gun is fired, the recoil of the firearm will momentarily relieve the pressure or friction on the catch 8^a, and before it can be reapplied the catch 8 is moved out of engaging position by the operation of the spring 10. In case no explosion takes place upon releasing the firing mechanism there will be no recoil, and the catch 8 will not become disengaged until the operator voluntarily releases the backward pressure on the operating-bar. When this is done, the catch is then released and the gun can be opened by moving rearwardly the operating-bar. In case it is desired to open the gun or operate the mechanism without firing or operating the firing mechanism the operator can push on the button 11, overcoming spring 8^b by pressure, and thereby release the recoil-catch, when the mechanism is free to be operated. The button 11, protruding from the side of the firearm, as shown in Fig. 3, serves as an indicator to the effect that the mechanism is cocked ready for firing. When the mechanism is operated by the sliding bar 4, the breech-bolt 2 is first depressed and then moved to the rearward. At the same time the operating-bar stud 5 engages with the forward working end or cam-face 7′ of the cocking-head on the firing-pin, moving it back to cocked position, where it is caught by the sear 12. This will of course throw in the catch end of the recoil-lock when the breech-bolt is in a more or less open position. When the operating-bar 4 makes the final part of its movement toward the forward position, the end of the stud 5 engages with the catch end of the recoil-lock and throws it out sufficiently against the tension of the spring-arm 8^b to allow the catch-shoulder 5^a to come into engaging position with the recoil-lock.

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

1. The combination in a firearm of a frame, a reciprocating breech-block mounted in the frame, firing mechanism mounted in the breech-block, a sliding operating mechanism connecting with the breech-block, a recoil-lock mounted in the breech-block and arranged to engage and secure the sliding operating mechanism, and arranged to be operated into securing position by the firing mechanism in the breech-block, and a spring for moving the lock into unlocked position, substantially as set forth.

2. The combination with a firearm, having a breech-bolt and an action-bar engaging therewith, provided with an operating-handle arranged under the barrel, of a recoil-lock mounted on the bolt adapted to engage the action-bar, means actuated by the firing mechanism for throwing in the lock, and a spring for throwing out the lock, substantially as set forth.

3. The combination with a firearm, having a breech-bolt and action-bar engaging therewith, provided with an operating-handle arranged under the barrel, of a recoil-lock, adapted to engage and secure the action-bar, mounted on the breech-bolt, means actuated by the firing mechanism for throwing in the recoil-lock, and means for automatically and means for manually throwing out the lock, substantially as set forth.

4. The combination with a firearm, having a breech-bolt and action-bar engaging therewith, provided with an operating-handle arranged under the barrel, of a recoil-lock, adapted to engage the action-bar, mounted on the breech-block, having a spring-arm adapted to engage the hammer to operate the lock into engaging relation with the action-bar, a

weaker spring mounted in the frame adapted to engage the lock and throw it out when not otherwise held, substantially as set forth.

5. The combination with a firearm, having a breech-bolt and firing mechanism mounted therein, and an action-bar engaging with the bolt, provided with an operating-handle arranged under the barrel, of a recoil-lock, adapted to engage the action-bar, mounted on the breech-bolt, having a spring-arm adapted to engage the hammer when in retracted position, whereby the lock is operated to securing position, a spring mounted on the frame adapted to engage the recoil-lock and throw it out when not otherwise held, and a push-button mounted in the frame, also adapted to engage the recoil-lock and serve for manually operating the lock, substantially as set forth.

6. The combination with a firearm having a breech-bolt and firing mechanism mounted therein, and an action-bar engaging with the bolt, provided with a reciprocating operating-handle, of a recoil-lock, adapted to engage the action-bar and secure it against voluntary or involuntary operation, mounted on the breech-bolt, having a spring-arm adapted to engage the firing mechanism when in firing position for throwing in the recoil-lock, and a weaker spring for automatically throwing out the recoil-lock, said latter spring being proportioned and constructed to throw out the recoil-lock only when the pressure on the catch-shoulder is relieved, substantially as set forth.

7. The combination with a firearm, having a breech-bolt and a hammer or firing mechanism mounted therein, and an action-bar engaging with the breech-bolt and adapted to operate to firing position the firing mechanism, said action-bar provided with an operating-handle arranged under the barrel, of a recoil-lock, adapted to engage the action-bar, mounted on the breech-bolt, and having a spring-arm adapted to engage with the hammer or firing mechanism when in the firing position for throwing in the recoil-lock, a spring for throwing out the recoil-lock, and a push-button in the frame adapted for manual manipulation to throw out the recoil-lock against the tension of the said spring-arm, substantially as set forth.

In witness whereof I have affixed my signature, in presence of two witnesses, this 24th day of October, 1903.

JOHN DOUGLAS PEDERSON.

Witnesses:
EDWARD BEACH,
EUGENE D. RIVERS.