

No. 673,803.

Patented May 7, 1901.

E. H. THORNELEY.
GUN LOCK.

(Application filed Oct. 25, 1898.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

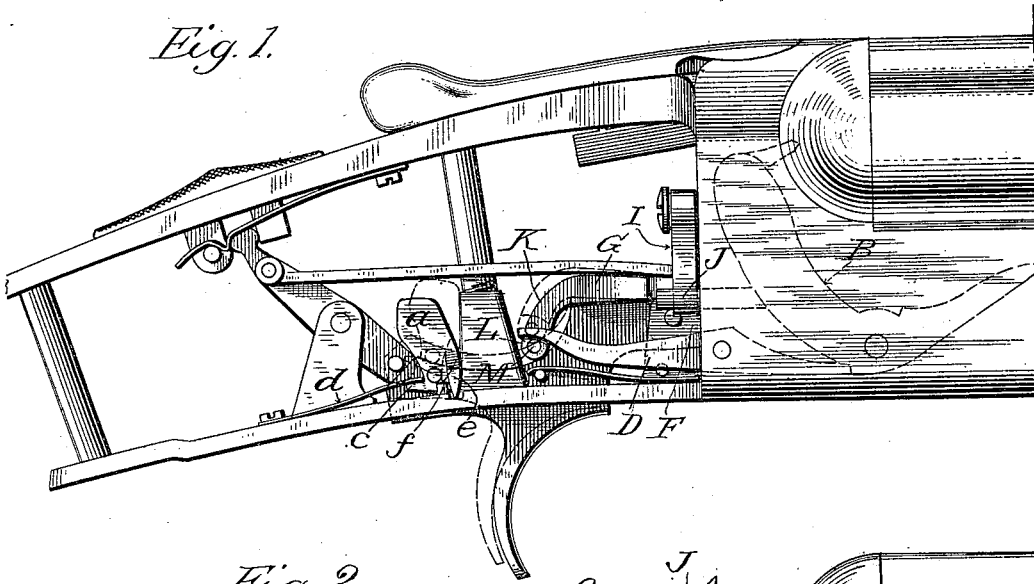


Fig. 2.

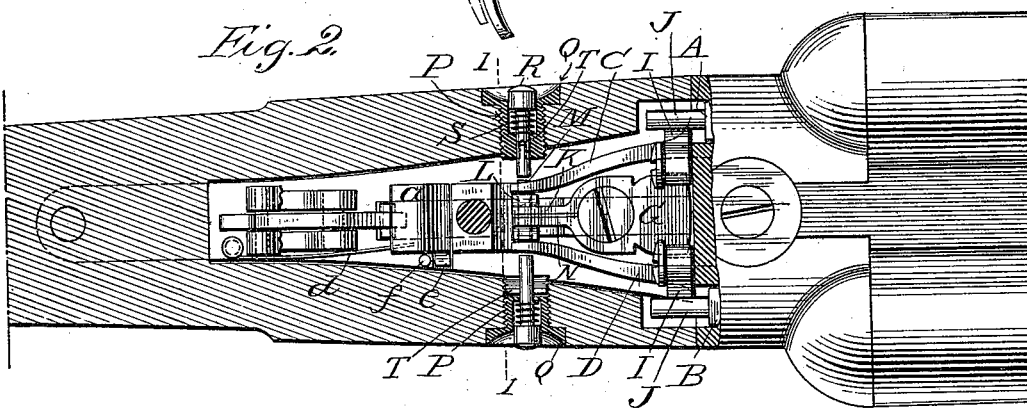
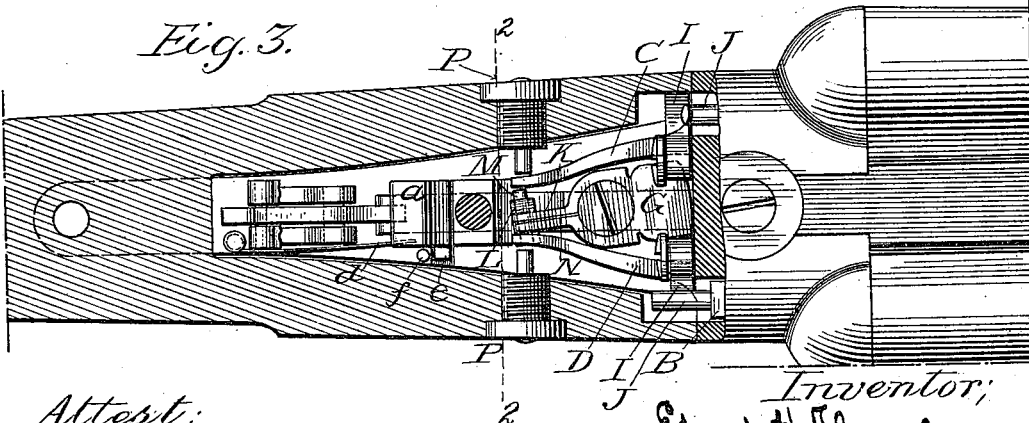


Fig. 3.



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Fig. 4.

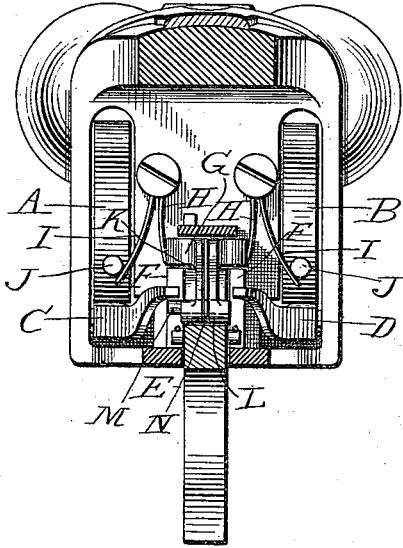


Fig. 5.

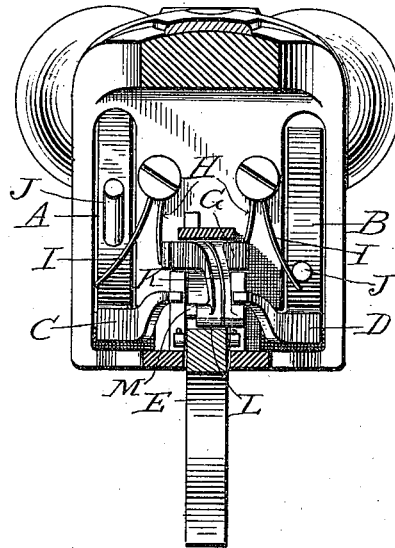


Fig. 6.

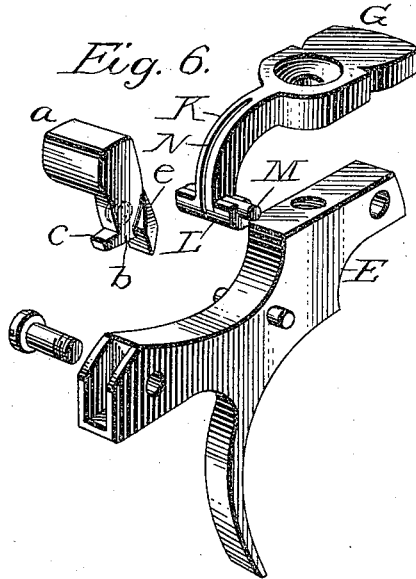


Fig. 7.



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Inventor:
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 by Dodge and Smar,
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UNITED STATES PATENT OFFICE.

EDWARD HENRY THORNELEY, OF ILION, NEW YORK, ASSIGNOR OF ONE-HALF TO ARCHIBALD W. MCGOWAN, OF SAME PLACE.

GUN-LOCK.

SPECIFICATION forming part of Letters Patent No. 673,803, dated May 7, 1901.

Application filed October 25, 1898. Serial No. 694,525. (No model.)

To all whom it may concern:

Be it known that I, EDWARD HENRY THORNELEY, a citizen of the United States, residing at Ilion, in the county of Herkimer and State of New York, have invented certain new and useful Improvements in Gun-Locks, of which the following is a specification.

My present invention pertains to gun-locks, and more particularly to that class wherein a single trigger is designed to control or operate both hammers.

The invention consists in providing means whereby either barrel may be fired first or either barrel may be fired continuously.

The invention also embraces means for preventing the second barrel from discharging by reason of the recoil caused by the discharge of the first barrel.

In the accompanying drawings, Figure 1 is a side elevation of the lock, the stock of the gun being removed and a portion only of the barrels being shown; Fig. 2, a sectional plan, the safety mechanism being partly broken away and the hammer being cocked and the parts in such relation that the left-hand barrel will be discharged first; Fig. 3, a similar view, the left-hand barrel having been discharged and the parts brought to such position that the right-hand barrel will be fired when the trigger is again pressed; Fig. 4, a vertical cross-sectional view on the line 1 1, Fig. 2, the stock being omitted; Fig. 5, a similar view on the line 2 2 of Fig. 3; Fig. 6, a detached perspective view of certain of the parts, and Fig. 7 a side elevation of the shifting pin employed in connection with the sears for releasing them.

The invention is shown in connection with a gun of the concealed-hammer type, the hammers being indicated by A and B, said hammers being automatically cocked by the breaking down of the gun, as is usual. Sears C and D maintain the hammers A and B, respectively, in their cocked positions, the rear ends of the sears being inclined slightly upward and inward, as indicated.

E denotes the trigger, pivoted at its forward end between two upstanding lugs or pillars F. Pivotaly mounted upon the upper forward part of the trigger is a swinging plate

or lever G, the forward end of which is broad and occupies a position intermediate the short arms H of two springs, which are pivoted upon screws or studs mounted in or formed on the standing breech of the gun.

The springs, as will be seen upon reference more particularly to Figs. 4 and 5, are substantially A-shaped, with the outer arms I made longer. Said outer arms or members are designed to act in conjunction with studs or pins J, which are connected to and extend rearwardly from the hammers, the pins coming into contact with the arms I when the hammers are cocked, as indicated in Fig. 4, forcing said arms I toward the shorter arms and causing said shorter arms to bear with some pressure against the forward end of the swinging plate G. When both hammers are cocked, the plate will of course be acted upon alike by both springs and will be held in alinement with the trigger, Fig. 4; but as soon as one hammer is released the spring corresponding thereto and acting in conjunction therewith will be released, whereupon the spring upon the opposite side will tend to spread, causing the plate G to move upon its pivot and forcing the forward end toward the hammer which has just been released. (See Fig. 5.) The rear end of the plate is narrowed or formed into a neck K, which is curved downwardly, terminating in a cross-bar L, the bar occupying a horizontal position. Extending through the cross-bar is a pin M, the pin being of a length slightly longer than the cross-bar, so that one end of the pin must at all times project beyond one or the other end of the cross-bar. Said pin is so mounted in the bar that it may be moved longitudinally therein, and to maintain it in its adjusted position with one or the other end projecting I employ a spring N, mounted in the neck K, with its lower free end bearing in notches O. (Shown in Fig. 7.) The spring is so light that the bar may be readily moved by a slight pressure being applied to the projecting end.

As will be seen upon reference to Figs. 2 and 4, the cross-bar is of a length slightly less than the distance between the inner faces of the ends of the sears C and D, and were the trigger pulled when both hammers are cocked

neither would be discharged so far as the cross-bar itself is concerned. It will be seen, however, that by shifting the pin M, so that it will protrude beyond one end of the cross-bar, said projecting end will pass under one or the other sear, according as the pin is moved. In Figs. 2 and 4 it is shown in such position as to engage the left-hand sear when the trigger is pulled, and consequently will release said sear and cause the left-hand barrel to discharge first. After the left-hand barrel has been discharged the plate G will be moved into the position shown in Figs. 3 and 5, as above described, wherein it will be seen that the right-hand end of the cross-bar L will have passed under the rear end of the right-hand sear D. If the trigger be again pulled, the right-hand barrel will be discharged. It will thus be seen that the order in which the barrels will be discharged is determined by the position of the pin M, for should the pin be moved to the right with relation to the cross-bar it would project under sear D and cause the right-hand barrel to be first discharged, and in consequence, due to the release of the spring upon the right of the plate G by the elevation of stud J, the left-hand spring will swing said plate so that the end of cross-bar L will come under the left-hand sear.

If it be desired to shoot one barrel continuously, all that is necessary is to adjust the pin M to engage the sear of the barrel to be fired, so that with the initial pull of the trigger the barrel will be discharged. Of course when the gun is broken down to reload, the plate G will assume its central position with relation to the sears and the pin M will be in position to again engage the desired sear.

To provide for the adjustment of the pin M to cause it to fire either the right or left hand barrel first, I mount in each cheek or side face of the stock in line with pin M a spring-retracted plunger. Said plungers are shown in Figs. 2 and 3. Each is mounted in a threaded socket-piece P, which is screwed into the side wall of the stock. The outer end of the socket-piece is enlarged, forming a head Q, the outer face of the head being flush with the stock of the gun. Said head is countersunk or hollowed out, and projecting out into the space thus formed is the head of the plunger or push-pin R, which extends through the bushing in line with pin M. A spring S serves to hold the plunger out, and to prevent its withdrawal from the bushing a pin T is passed through the stem of the plunger, said pin T working in a slot formed in the bushing. (See the lower portion of Fig. 2.) By pushing in one or the other of these plungers pin M may be shifted as desired.

In single-trigger double-barrel guns difficulty has been experienced in preventing the recoil from discharging the second barrel. It will of course be seen that immediately the trigger is pulled to discharge the first barrel

the mechanism would be so shifted as to be in position to release the second hammer, and it frequently happens in guns of this type that the second barrel is discharged owing to the pull exerted upon the trigger due to recoil and the rebound. To prevent this, I employ suitable automatic mechanism for locking the trigger out of action or movement, preventing its descent immediately after the discharge, and consequently the shifting of the sear-operating mechanism.

The device comprises a block *a*, provided with a downwardly-projecting wing *b*, in which the screw or pin by which it is pivoted upon the rear end of the trigger is secured. Said wing *b* in the form shown bears against the side face of the trigger, while the upper heavy portion is directly over the body of the trigger. Wing *b* is formed with a rearwardly-extending lug *c*, upon which bears the free end of a small spring *d*, which tends normally to hold the block back in the position indicated in full lines in Fig. 1.

Extending out laterally from the forward portion of wing *b* is another wing or web, *e*, the lower edge of which extends down below wing *b* and is preferably brought to a comparatively sharp edge. A pin or stud *f* is mounted in the frame to one side of wing *b* and just to the rear of web *e*, as shown in Figs. 1, 2, and 3. As the rear end of the trigger is elevated in the act of releasing one of the hammers, the lower end of web *e* will pass to a point slightly higher than the upper end of pin *f*, and as the barrel is discharged the whole gun will be thrown back quickly and in so doing will cause the lower edge of web *e* to pass over onto the top of pin *f*, as shown by dotted lines in Fig. 1. This movement of the block is due to the fact that it is pivoted at its lower end with all the weight or practically all in the upper end, so that the upper end is thrown forward as the gun is forced back. When the block is in this position, it will of course prevent the trigger from descending to its normal position and the end of cross-bar L will be above the under face of the sear not yet released, so that the plate G cannot be shifted until the trigger is again released. This release comes with the pressure exerted upon the trigger by the finger in contact therewith as the gun rebounds from the shoulder, slightly elevating the trigger and allowing-spring *d* to throw the block back and the web *e* out of line with pin *f*. As the trigger descends plate G will shift, so as to bring the cross-bar L in position to engage the sear of the undischarged barrel.

The usual safety mechanism operated by the cocking of the gun is shown for engaging the rear end of the trigger.

It is manifest that the invention is susceptible of modification in details of construction, and I do not desire to limit myself strictly to the illustrated embodiment.

While the invention is shown as applied to

the so-called "hammerless" gun, it is manifest that it may be used in connection with guns in which the hammers are exposed.

Having thus described my invention, what I claim is—

1. In a lock for breakdown firearms, the combination of two hammers; a sear for each hammer; a trigger; adjustable mechanism carried by the trigger for engaging the sears alternately, or either sear continuously independent of the other sear; and means for adjusting said mechanism, whereby the hammers may be released alternately, or either hammer may be released and continue to be operated independent of the other hammer.

2. In a lock for breakdown firearms, the combination of two hammers; a sear for each hammer; a trigger; mechanism carried by the trigger for engaging the sears alternately, or either sear continuously independent of the other sear; and devices for adjusting said mechanism from without the gun, substantially as described, whereby either hammer may be released first or either hammer operated continuously independent of the other.

3. In a lock for breakdown firearms, the combination of two hammers; a sear for each hammer; a trigger; mechanism carried by the trigger for engaging the sears alternately, or either sear continuously; and plungers extending to the outside of the gun acting on said mechanism and adjusting the same, whereby the hammers may be released successively or either hammer operated continuously independent of the other.

4. In a lock for firearms, the combination of two hammers; a sear for each hammer; a trigger; a swinging plate mounted on said trigger and provided with a cross-bar at its rear end; and a pin slidably mounted in said cross-bar to engage one or the other of the sears as desired.

5. In a lock for firearms, the combination of two hammers; a sear for each hammer; a trigger; a swinging plate mounted on said trigger; a cross-bar carried at the rear end of said swinging plate; a pin slidably mounted in said cross-bar; and means operated from without the gun for adjusting said pin, whereby it may be made to engage either sear as desired.

6. In a lock for firearms, the combination of two hammers; a sear for each hammer; a trigger; a swinging plate G carried by the trigger and provided with a cross-bar L at its rear end; a pin M slidably mounted in said cross-bar; a spring holding said pin in its adjusted position; and plungers mounted in the side of the gun in line with the pin, substantially as and for the purpose described.

7. In a lock for firearms, the combination of two hammers; arms J extending rearwardly from said hammers; a sear for each hammer; a trigger; a swinging plate G mounted on the trigger; springs connected to the frame of the gun and bearing upon each

side of the forward end of said swinging plate G and the arms J, substantially as described; a cross-bar L carried by the rear end of said swinging plate; a pin slidably mounted in said cross-bar; and means for adjusting said pin.

8. In a lock for firearms, the combination of two hammers; a sear for each hammer; a trigger; a swinging plate mounted on said trigger; springs tending to hold said plate in alignment with the trigger; arms extending from the hammers for placing the springs under compression when the hammers are cocked; a cross-bar carried by the rear end of said swinging plate; a sliding pin M mounted in said cross-bar to engage one of the sears; and means for adjusting the position of said pin, whereby it may be made to engage either of the sears as desired.

9. In a lock for firearms, the combination of two hammers; a sear for each hammer; a trigger; a swinging plate G carried by the trigger; springs acting on the forward end of said plate, said springs being put under compression by the hammers when cocked; a cross-bar carried by the rear end of said swinging plate; a pin M slidably mounted in said cross-bar; and spring-retracted plungers mounted in the side of the gun in line with said pin, whereby the pin may be shifted in the cross-bar, substantially as and for the purpose described.

10. In a lock for firearms, the combination of two hammers; a sear for each hammer; a trigger; means carried by the trigger for engaging the sears successively; and mechanism for holding the trigger temporarily in its elevated position after the first discharge, said mechanism being operated by the recoil of the gun, whereby the means for engaging the sears will be held against movement until the trigger is again released and lowered.

11. In a lock for firearms, the combination of two hammers; a sear for each hammer; a trigger; means carried by the trigger for engaging the sears successively; and mechanism for holding the trigger out of action after the first barrel has been discharged, said mechanism being operated by the recoil of the gun, substantially as described.

12. In a lock for firearms, the combination of two hammers; a sear for each hammer; a trigger; a swinging plate mounted on the trigger to engage the sears successively; and means carried by the trigger for holding the same in its elevated position after the discharge of one barrel, said means being operated by the recoil of the gun, whereby the trigger is held in its elevated position and the swinging plate is prevented from moving until the trigger is again lowered.

13. In a lock for firearms, the combination of two hammers; a trigger; means for releasing the hammers successively; and independent means operated by the recoil of the gun for holding the trigger in its elevated position after the first hammer has been released,

whereby the means for releasing the hammers is held out of operated position.

14. In a lock for firearms, the combination of two hammers; a sear for each hammer; a trigger; a swinging plate carried by the trigger and designed to move successively under the rear ends of the respective sears; a block pivoted to the rear end of the trigger; a projection upon the frame in proximity to said block; and a spring acting on the block tending to normally hold the same out of alignment with said projection, substantially as and for the purpose described.

15. In a lock for firearms, the combination of two hammers; a sear for each hammer; a trigger; a swinging plate mounted on said trigger and designed to engage the respective sears successively; a block pivoted at its lower end to the rear end of the trigger; a spring acting upon the lower end of the block and tending to hold the upper end thereof back;

a projection formed upon the lower end of the block; and a stud or pin extending from the frame upwardly in rear of said projection.

16. In a lock for firearms, the combination of two hammers; a sear for each hammer; a trigger; a swinging plate mounted on said trigger; a pin mounted in the rear end of said plate; spring-plungers mounted in the frame in line with said pin; a block *a* pivoted to the rear end of the trigger, said block being provided with a lug *c* and a wing *e*; a spring bearing upon the lug *c* and tending to hold the block back; and a stud or pin *f* mounted in the frame in rear of the wing *e*, substantially as and for the purpose described.

In witness whereof I hereunto set my hand in the presence of two witnesses.

EDWARD HENRY THORNELEY.

Witnesses:

THOMAS H. WILLIS,
C. W. HILLIARD.

Correction in Letters Patent No. 673,803.

It is hereby certified that in Letters Patent No. 673,803, granted May 7, 1901, upon the application of Edward Henry Thorneley, of Ilion, New York, for an improvement in "Gun-Locks," an error appears in the printed specification requiring correction, as follows: In line 2, page 4, the word "operated" should read *operative*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 23d day of December, A. D., 1902.

[SEAL.]

F. I. ALLEN,
Commissioner of Patents.

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