I. ROBBINS.

LOCKS FOR FIRE-ARMS.

No. 189,387. Patented April 10, 1877.

Fig: 1

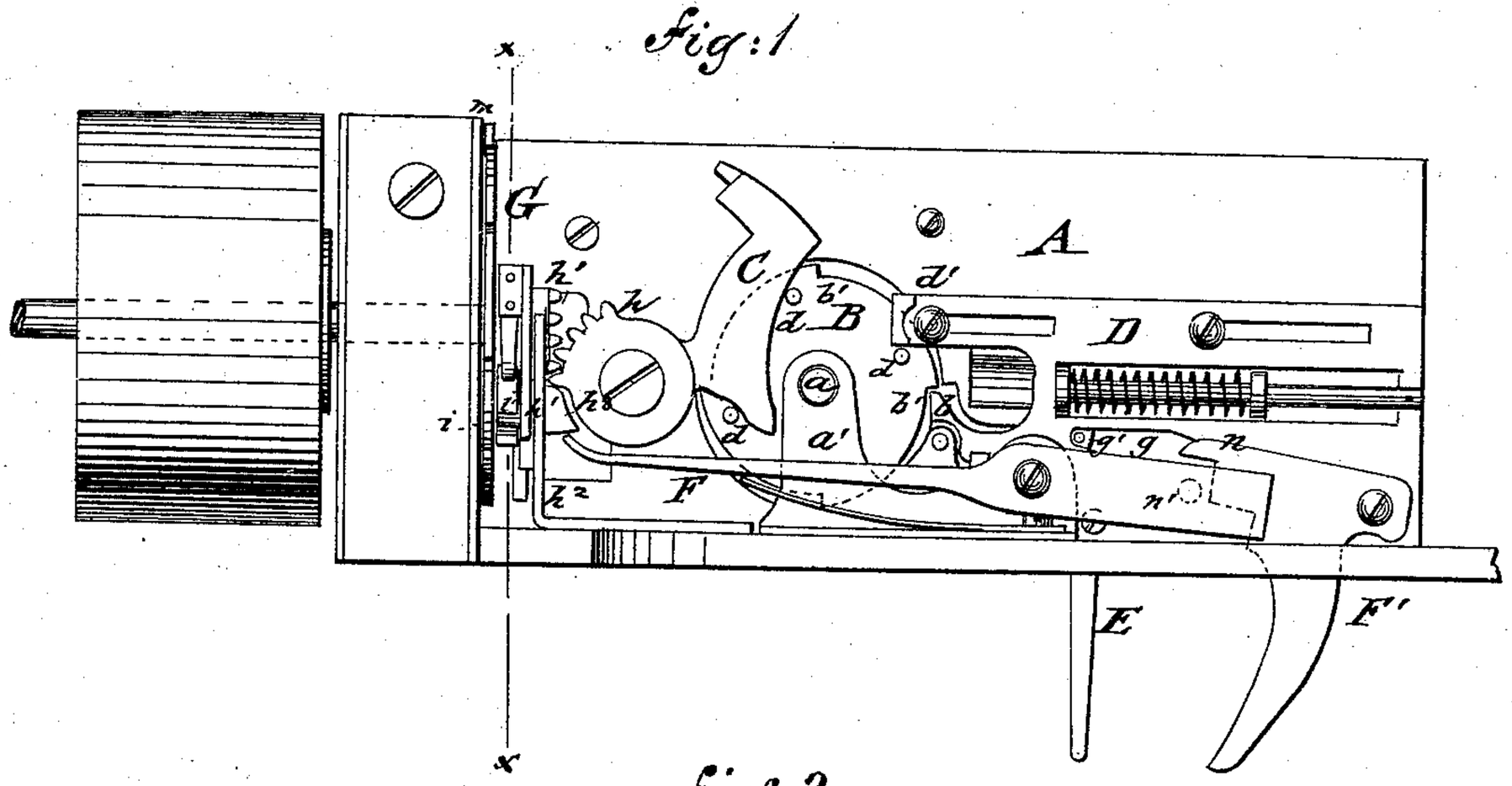


Fig: 2.

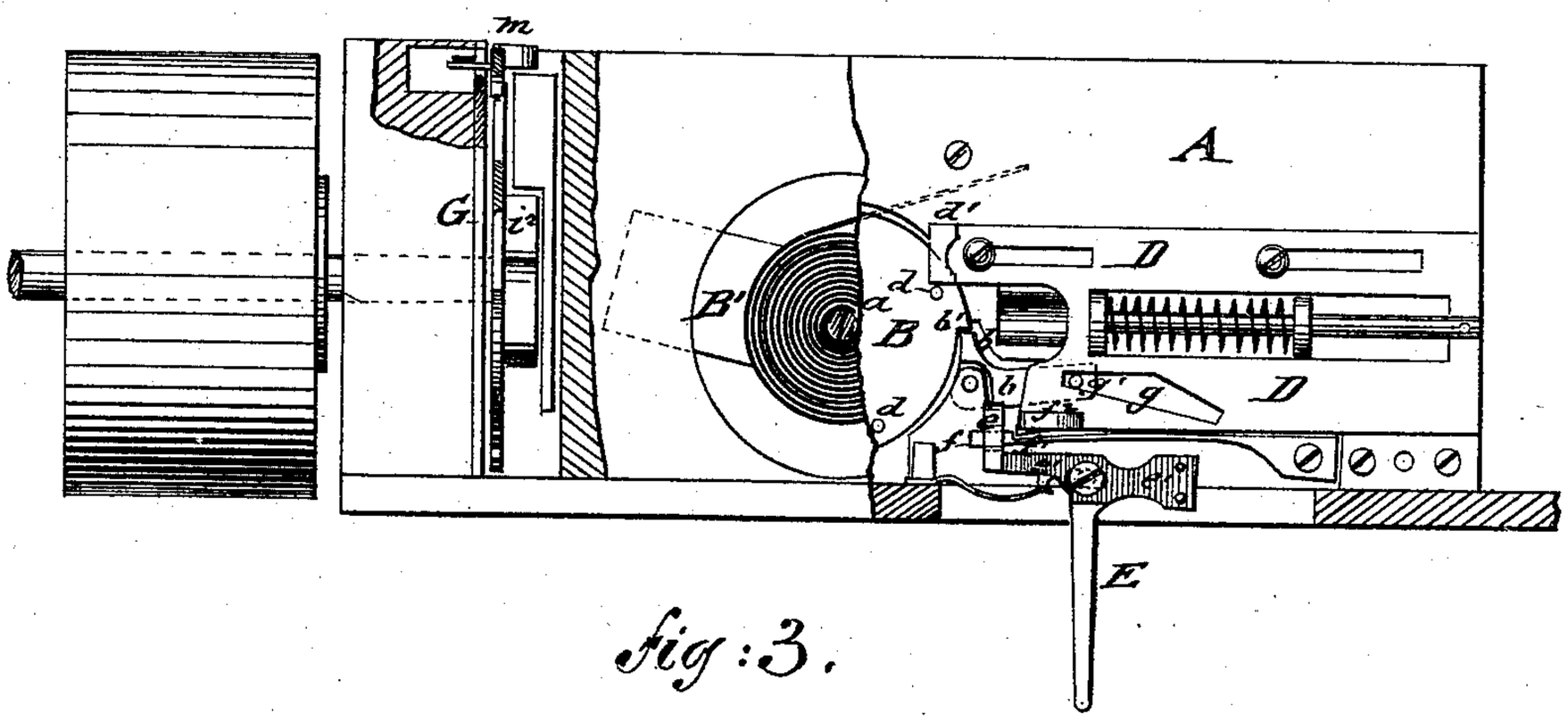
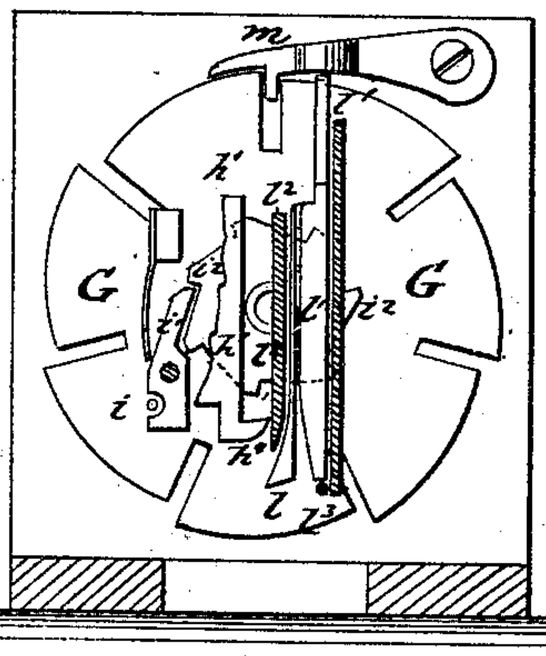


Fig: 3.



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IRA ROBBINS, OF HUGHESVILLE, PENNSYLVANIA.

IMPROVEMENT IN LOCKS FOR FIRE-ARMS.

Specification forming part of Letters Patent No. **189,387**, dated April 10, 1877; application filed March 12, 1877.

To all whom it may concern:

Be it known that I, IRA ROBBINS, of Hughesville, in the county of Lycoming and State of Pennsylvania, have invented a new and Improved Repeating Gun-Lock, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a side elevation of my improved repeating gun-lock; Fig. 2, a sectional side elevation, with parts broken off, and Fig. 3 a vertical transverse section of the same on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The invention has reference to an improved repeating gun-lock for fire-arms, by which as many shots as there are cartridges in the cylinder or magazine may be fired in rapid succession, the trigger being instantly reset after each shot, in automatic and reliable manner, ready for the next shot.

The invention consists of a hammer that is alternately thrown forward on the release of the trigger by a coiled or other spring and notched and studded disk, and thrown backward again by a spring-acted return-lever that revolves at the same time the cylinder. A sliding and spring-acted bolt is released by the trigger and thrown forward so as to unlock the lock-pawl of the spring-disk, which has as many projecting studs as notches, which throw, at every unlocking of the disk, the hammer forward and the spring-bolt backward, so as to relock the spring-disk and reset the trigger. A separate trigger, back of the releasing-trigger, bears on the spring-acted return-lever, so as to admit the drawing back of the hammer when the repeating-mechanism should fail to work.

By referring to the drawing, A represents a longitudinal supporting partition, along which the operating parts of my repeating-lock for fire-arms are arranged. In a circular recess of the partition A is placed a coiled band or other spring, B′, which is fastened at the outer end to the partition A and at the inner end to a spindle, *a*, on which the spring is wound up by a key and ratchet-and-pawl device, in the same manner as a watch-spring.

A disk, B, is connected to the spindle *a* and revolved by the same whenever the lock-pawl *b* is withdrawn from the notches *b′*, formed at the circumference of the disk. The disk shown in the drawing is arranged with four notches, into which the pawl *b* locks. The outer end of the spindle *a* turns in the bearing of a pillar, *a′*, that is placed at such distance from the disk that the studs or pins *d* that project from the same may pass below the pillar. The studs *d* are placed near the notches, and as many employed as there are notches.

The hammer C is pivoted to the partition A in front of the disk and thrown forward to discharge a cartridge by one of the studs as soon as the spring-disk is released by withdrawing the pawl *b*. This is accomplished by a spring-acted slide-bolt or plate, D, that is guided in suitable manner along the partition and thrown forward by a spiral spring acting thereon as soon as the trigger E releases the slide-bolt D. The trigger E connects, by a hook, *e*, applied to the end of a side spring, *e′*, of the trigger, with the spring-hook *f* that locks on the downward-projecting heel f^1 of the slide-bolt D, withdrawing the spring-hook *f* from the heel by a slight pull on the trigger, and releasing thereby the bolt, which is thrown forward and bears, by a side projection, f^2, near the heel, against the side spring-hook of the trigger so as to force the same sidewise and admit the unobstructed forward motion of the slide-bolt D.

A recess, *g*, of the bolt, with inclined sides, binds on a pin, *g′*, of the fulcrumed pawl *b*, and swings the pawl back out of the notch of the spring-disk by the forward motion of the bolt D, so as to produce the instant revolving of the disk and the throwing of the hammer by one of the disk-studs. The turning of the disk throws, however, nearly simultaneously, another stud of the disk against a forward-extended part, *d′*, of the slide-bolt D, so as to carry the same back by the stronger power of the coiled spring, and swing by its inclined recess the pawl back into the notch of the disk, locking the same thereby, and also the bolt, by the return of the spring-hook *f* on the heel f^1 of the bolt and by the locking of the spring-hook *e* of the trigger over the

spring-hook *f*. The parts return thus almost instantly into their former position, and are ready for another pull on the trigger and the next starting of the mechanism.

The hammer C is cast in one piece, with a sleeve, having a mutilated pinion, *h*, through which the pivot-pin passes on which the hammer swings. The mutilated pinion *h* intermeshes with a vertically-sliding rack-plate, h^1, that is guided by a slotted supporting-plate, h^2.

The sliding rack-plate h^1 operates by a pin, *i*, the pivoted spring-pawl i^1, withdrawing the same from the ratchet i^2 of the revolving cylinder, containing the cartridges, when the hammer is thrown forward by the spring-disk and throwing the same into the next tooth of the ratchet at the moment when the rack-plate is at its lowermost position, and when the hammer strikes the cartridge.

A fulcrumed and spring-acted lever, F, bears on a heel, h^3, of the rack-plate h^1, and throws the same in upward direction instantly after the hammer has struck and the disk is locked. The upward motion of the rack-plate h^1 returns the hammer into open position, as shown in Fig. 1, and engages at the same time, by a bottom hook, h^4, of the rack-plate, (see Fig. 3,) the projecting spring-heel *l* of a vertically-sliding rod, l^1, which lifts the check-pawl *m* out of the notch G, so as to admit the turning of the cylinder simultaneously with the return of the hammer.

The bottom hook h^4 of the rack-plate clears the spring-heel *l* as soon as the check-pawl *m* is raised by the contact of the heel *l* with the tapering end of a guide-plate, l^2, which throws the heel inwardly, releasing it from the hook h^4, and dropping thereby the vertical rod l^1 back on a fixed stop-pin, l^3, ready for the next turning motion of the ratchets. The release of the check-pawl *m* from the outer ratchet G, and the engaging of the ratchet *i* by the actuating-pawl i^1, is produced by the upward motion of the rack-plate, as caused by the spring-acted return-lever, and thereby the cylinder revolved to expose the next barrel to the action of the hammer.

A second trigger, F′, is arranged back of trigger E, and provided with a hook end, *n*, that bears on a pin, *n′*, at the rear end of return lever F, so as to admit the swinging up of the same and turning of the cylinder when for some reason or other the return-mechanism is not in proper working order. By pressing on the second trigger the hammer is returned and may be thrown forward again by the spring-disk without interrupting the firing of the gun.

The power of the coiled or other spring overcomes the power of the spring of the return-lever on releasing the trigger E, the latter being thrown into operation at the instant at which the power of the coiled spring is taken up by the lock-pawl, so that the lever may release and turn the cylinder-ratchets and throw the hammer into position for the next striking.

The rapidity of the operation of the different parts of the lock produces the almost instant return and resetting of the parts, so that the fire-arm may be fired almost as rapidly as the trigger may be pulled, and thereby a gun-lock of superior quality for military arms, sporting rifles, and other purposes furnished.

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

1. In a repeating-lock for fire-arms, the combination of the releasing-trigger mechanism with a spring-acted revolving disk and a pivoted hammer, substantially in the manner and for the purpose set forth.

2. In a repeating-lock for fire-arms, the combination of a revolving spring-acted disk with a releasing-trigger mechanism, pivoted hammer, and a spring-acted return-lever to throw the hammer forward for firing and then reset it again, substantially as described.

3. The combination of the spring-acted revolving disk B, having projecting studs, with the pivoted hammer, a sliding spring-bolt, D, and releasing-trigger, to simultaneously throw the hammer forward while returning the bolt for relocking the disk and trigger, substantially as specified.

4. The combination of the spring-acted revolving disk B, having circumferential notches, with the sliding spring-bolt D, pivoted lock-pawl *b*, and releasing-trigger, substantially as set forth.

5. The sliding spring-bolt D, having recess *g* with inclined sides, in combination with the pivoted lock-pawl and releasing-trigger, to withdraw the pawl from the spring-disk on pulling the trigger, substantially as described.

6. The combination of the sliding spring-bolt D, having lower heel f^1 and side heel or projection f^2, with spring-hook *f* and spring-hook *e* of trigger, to release spring-bolt for forward motion on pulling of trigger, substantially as specified.

7. The combination of the spring-acted revolving disk B, having circumferential notches and projecting studs, with the sliding spring-bolt D, having extending heel *d′*, pivoted lock-pawl *b*, spring-hook *f*, and locking-hook *e* of trigger, to return bolt and lock bolt and disk for next operation, substantially as specified.

8. The swinging hammer D, having mutilated pinion h^1, revolving mechanism of cylinder, and return-lever F, to return hammer and simultaneously turn cylinder, substantially as and for the purpose set forth.

9. The combination of swinging hammer C, sliding rack-plate h^1, having pin *i* and lower hook end h^4, with spring-pawl i^1, inner ratchet i^2, slide-rod *l* l^1, check-pawl *m*, and outer ratchet G, to release ratchets and revolve cylinder, substantially as specified.

10. The combination of sliding rack-plate h^1, having lower hook end h^4, with spring-point l, slide-rod l^1, tapering guide-plate l^2, and pin l^3, to drop pawl-lifting rod as soon as the check-pawl clears the outer ratchet, substantially as described.

11. The combination of the pivoted hammer C and rack-plate h^1, having heel h^3, with spring-acted lever F and supplemental trigger F′, to raise hammer for firing when required, as described.

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Witnesses:
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