

D. BROWN.  
GUN LOCK.

(Application filed Feb. 12, 1902.)

(No Model.)

2 Sheets—Sheet 1.

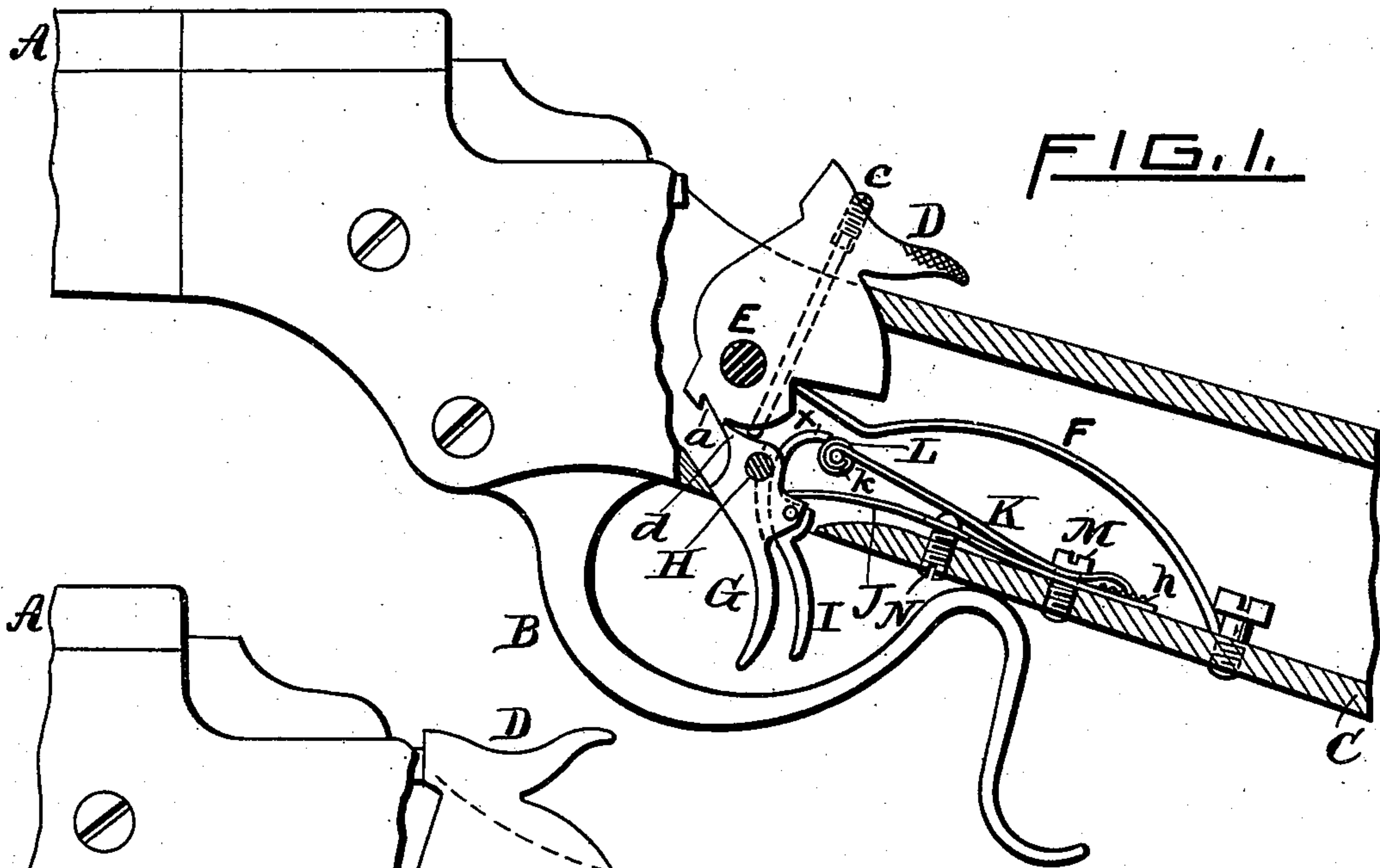


FIG. 1.

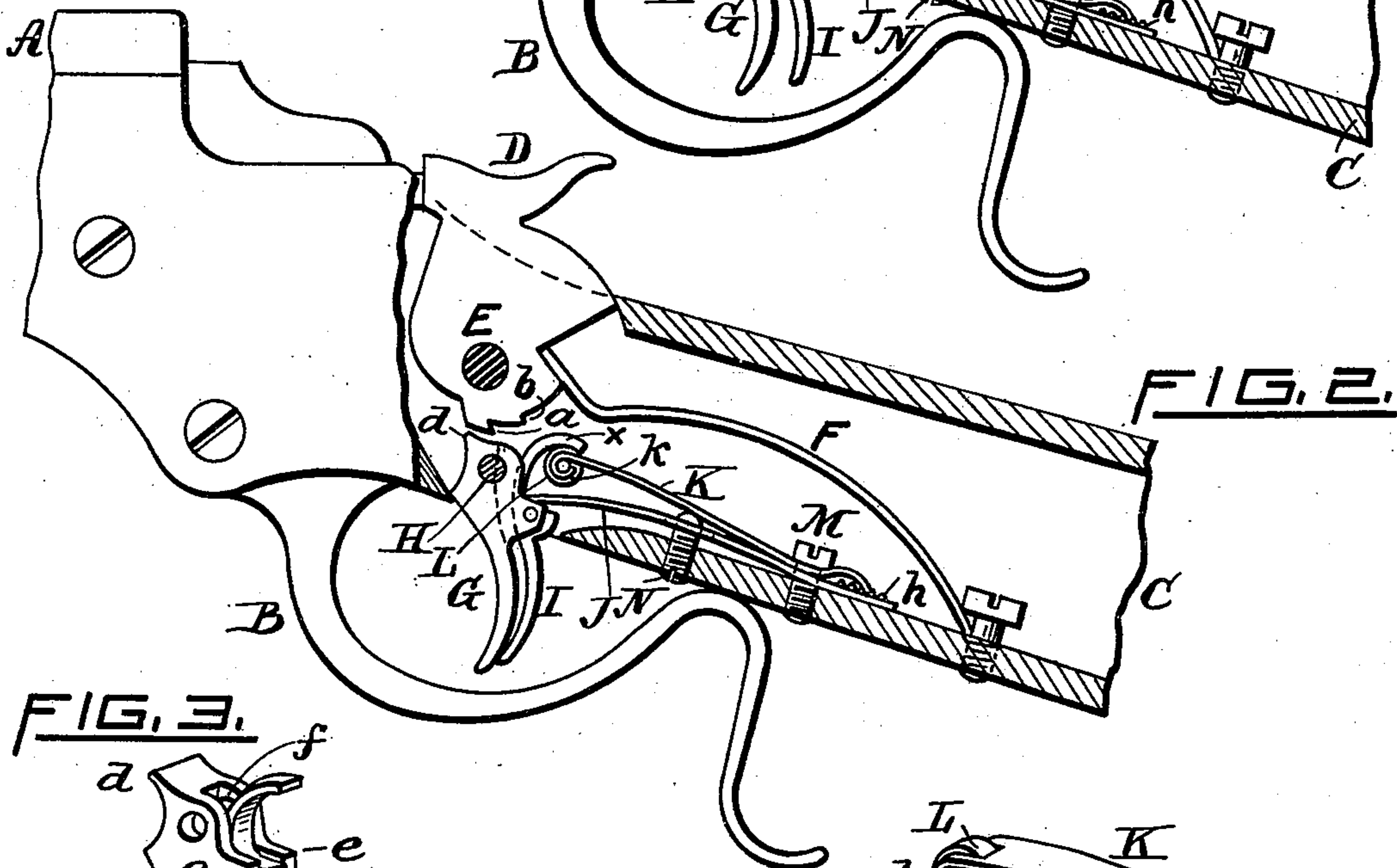


FIG. 2.

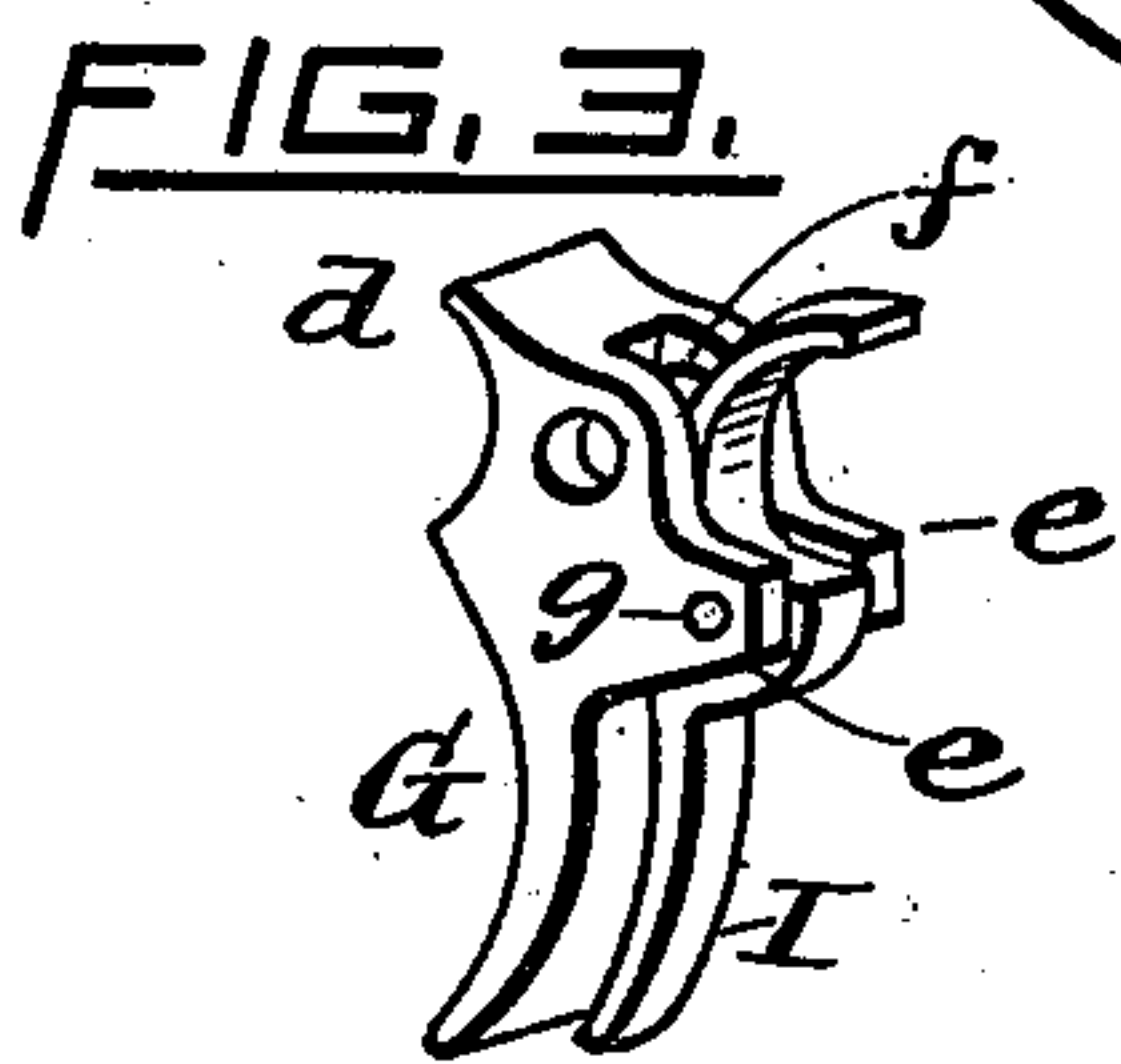


FIG. 3.

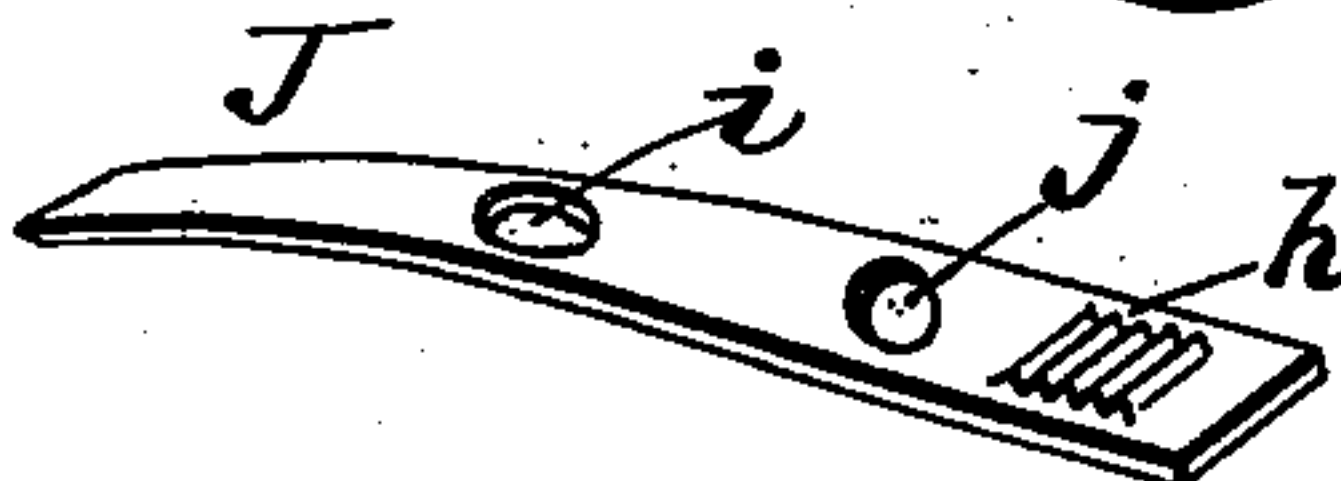


FIG. 4.

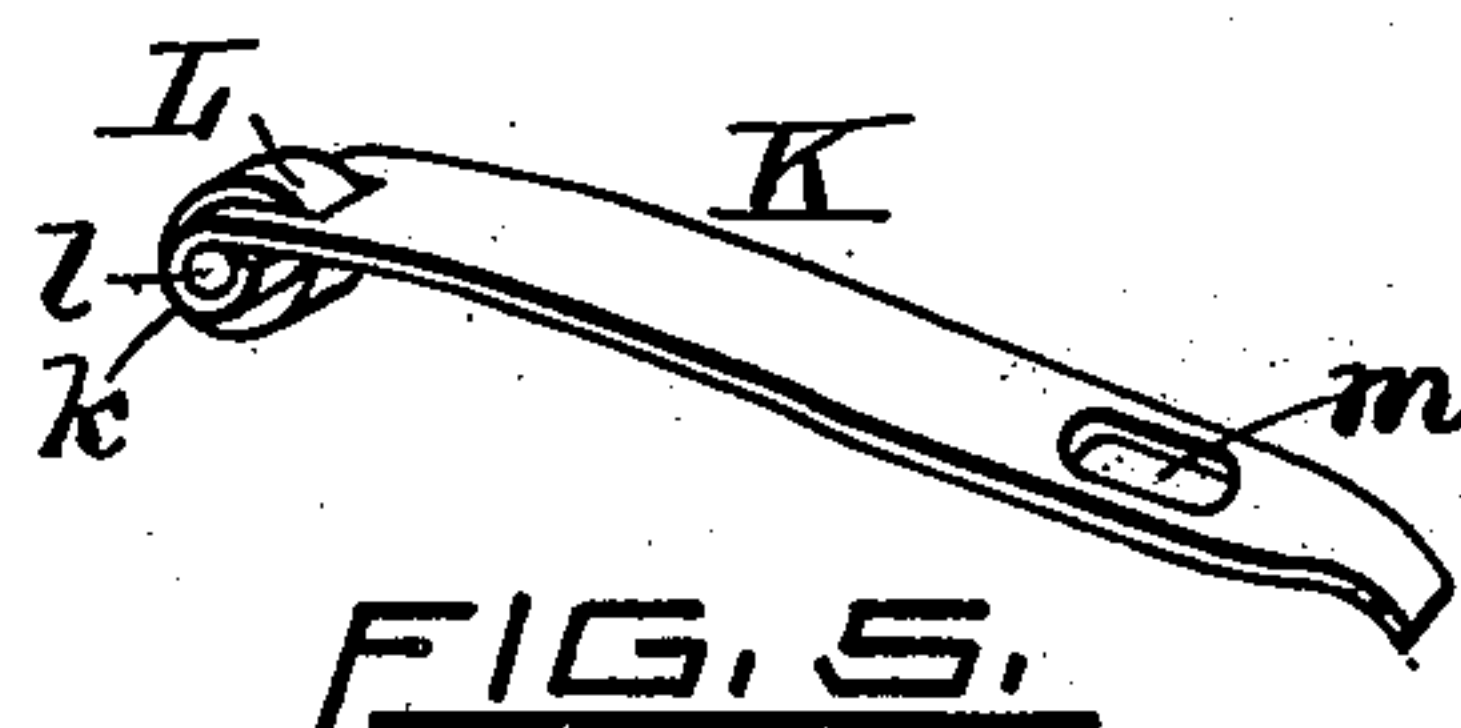


FIG. 5.

WITNESSES,

INVENTOR,

Charles T. Hannigan.

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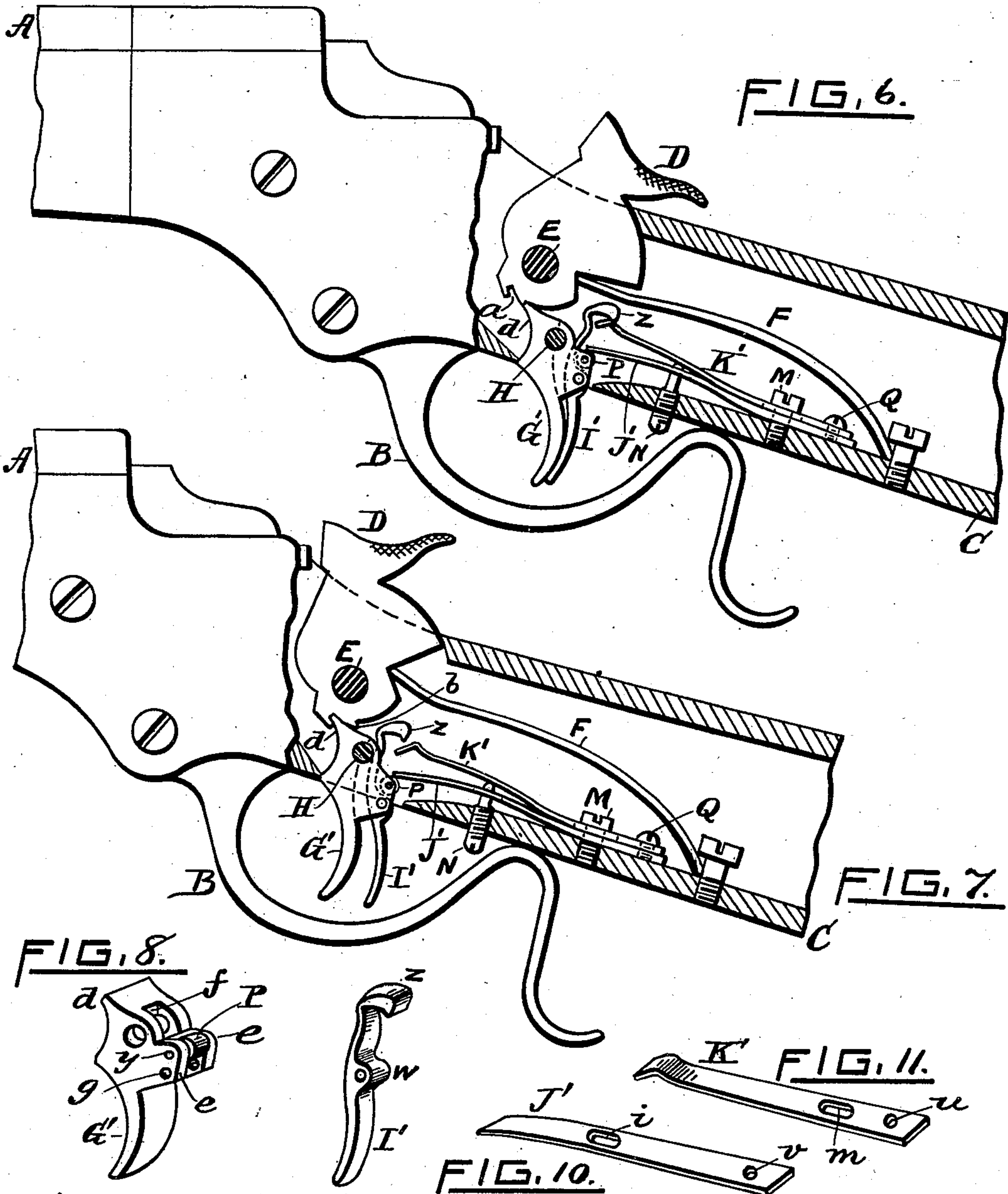
By Warren R. Perce  
Attorney.

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2 Sheets—Sheet 2.



WITNESSES, FIG. 9.

INVENTOR.

Charles T. Hannigan. Daniel Brown  
Joseph R. Bullock, Jr. By Warren R. Pree  
Attorney.



# UNITED STATES PATENT OFFICE.

DANIEL BROWN, OF CRANSTON, RHODE ISLAND.

## GUN-LOCK.

SPECIFICATION forming part of Letters Patent No. 698,440, dated April 29, 1902.

Application filed February 12, 1902. Serial No. 93,735. (No model.)

*To all whom it may concern:*

Be it known that I, DANIEL BROWN, a citizen of the United States, residing at Cranston, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Gun-Locks, of which the following is a specification, reference being had therein to the accompanying drawings.

10 Like letters indicate like parts.

Figure 1 is a side elevation of my improved gun-lock when the set trigger is in its inoperative position. Fig. 2 shows the same at the instant of firing when the set trigger is in its operative position. Fig. 3 is a perspective view of the main trigger and set trigger and shows their positions in relation to each other. Figs. 4 and 5 are detail views. Figs. 6 to 11, inclusive, represent a modified form of my invention.

My invention relates to gun-locks; and it consists of the novel construction and combination of the several parts, as hereinafter particularly described, and specifically set forth in the claims.

In the drawings, A represents the barrel, B the guard, and C a portion of the stock, of a rifle.

D is the hammer, mounted on the pivot E and having the usual safety-notch *a* and the firing-notch *b*. A set-screw *c*, passing through the hammer D, as shown in Fig. 1, has its lower end project from the lower end of the hammer and is adapted to regulate the depth to which the sear of the hammer shall enter the firing-notch *b*. The hammer is operated by the mainspring F in the usual manner.

G is the main trigger, mounted on the pivot H and having the sear *d* and the shoulders *e*. Between the shoulders *e* is the central longitudinal slot *f*. The sides of the main trigger G have the holes *g*.

The set trigger is shown at I. It is mounted upon a pivot, which passes through the holes *g g* of the main trigger G. The upper part of the set trigger I is formed into a curve, as shown at *x*.

The main-trigger spring J has its forward end resting and pressing downward upon the upper surfaces of the shoulders *e* of the main trigger. Its opposite end has a series of trans-

verse parallel serrations *h*. There are two holes through the spring J, as seen at *i* and *j*.

The set-trigger spring K has its forward end bifurcated and formed with two projections, each of which is bent to form a circular bearing, as shown at *k*. A roller L, having an axle *l*, is mounted in the bifurcation of the spring K, and its axle *l* is received in the circular bearings *k*. The opposite end of the spring K is slightly curved and bent downward and is engageable with any one of the serrations *h* of the main-trigger spring J. The spring K also has an elongated hole *m*, as seen in Fig. 5.

A screw M passes through the hole *m* of the spring K and through the hole *j* of the spring J into the case or frame of the gun-lock. A set-screw N passes up through the case or frame of the gun-lock and through the hole *i* of the spring, wherein it is free, and the upper end of the set-screw N is rounded and bears up against the under side of the spring K.

The roller L of the spring K lies against the upper end of the set trigger I, as seen in Fig. 1, when the set trigger is in its inoperative position, and beneath the curve *x* of the end of the upper end of the set trigger I, as seen in Fig. 2, when the set trigger is in its operative position.

Having thus described the several parts of my improved gun-lock, I will now explain its operation.

When the set trigger I and the spring K and its roller L in relation thereto are in the positions respectively illustrated in Fig. 1, the set trigger I is inoperative and only the main trigger G is used in firing; but when it is desired to have a light pull for more accurate aim the set trigger I is used. When the set trigger I is in its inoperative position, as seen in Fig. 1, the roller L practically bears against the upper end of the set trigger I or just a trifle below it in order to allow the further movement illustrated in Fig. 2 whenever desired; but when the set trigger I is moved from the position shown in Fig. 1, where it is parallel to and at a distance from the main trigger G, to the position shown in Fig. 2, where the lower end of the set trigger I is in contact with the main trigger G, the upper curved end *x* of the set trigger I is



moved in an arc of a circle rearward, and the  
 said end of the set trigger riding up over the  
 roller L forces said roller downward into and  
 along the inner curve  $x$  of said upper end of  
 5 the set trigger, thereby forcing the spring K  
 downward and putting it under tension, the  
 upper end of the set-screw N serving as a  
 fulcrum over which said spring K is strained  
 downward. The pressure of the spring J is  
 10 uniform and constant upon the shoulders  $e$   
 of the main trigger G and is exerted in a  
 downward direction. Said pressure always  
 tends to force downward the shouldered part  
 of the main trigger G, and so to elevate the  
 15 sear end of the main trigger. Moreover, this  
 downward pressure is exerted in a line sub-  
 stantially at a right angle to the pivot of the  
 set trigger which passes through the holes  $g$   
 of the main trigger G; but the pressure of the  
 20 spring K when engaged as shown in Fig. 2  
 is an upward pressure and is practically ex-  
 erted on a line at a right angle to said pivot  
 in the holes  $g$ . Therefore the upward pres-  
 sure of the spring K counterbalances the  
 25 downward pressure of the spring J to a de-  
 gree regulated by the set-screw N and by the  
 adjusted position of the spring K upon the  
 screw M, and so far as it counterbalances the  
 pressure of the spring J it consequently di-  
 30 minishes its effect upon the main trigger G,  
 and to that extent the influence of the spring  
 J upon the main trigger G is lessened and the  
 lighter is the pull upon the main trigger re-  
 quired to discharge the gun.

35 It is evident that the set-trigger spring K  
 is adjustable in two directions. Its tension is  
 increased by any upward movement of the set-  
 screw N and diminished by any downward  
 movement of the same. The proper location  
 40 of the roller L with reference to the upper end  
 of the set trigger I is regulated by means of  
 the elongation of the hole  $m$  in the spring K,  
 so that the spring K is longitudinally adjust-  
 able along the screw M, and the bent end of  
 45 the spring K, engaged in whichever one of the  
 serrations  $h$  may be proper for the purpose,  
 counteracts the end thrust upon said spring.

The set trigger is most conveniently and  
 quickly pushed or moved into the position  
 50 illustrated in Fig. 2 (in which the light pull  
 of the main trigger is obtained) by proper  
 movement of the firing-finger. The forward  
 pressure by the nail of that finger gives that  
 motion, and the sportsman knows by said pres-  
 55 sure and feeling that the trigger I is set and  
 the gun can be discharged by a light pull.  
 Having thus pushed the set trigger to its op-  
 erative position in contact with the main  
 trigger, he passes his forefinger forward to  
 60 place it in front of the main trigger. It is  
 not necessary to bring down the rifle from the  
 shoulder when it is desired to change from  
 the ordinary pull to the light pull or to ascer-  
 65 tain whether the set trigger is in operative po-  
 sition or not, because all that can readily be  
 done by the firing-finger.

It is common in double-trigger rifles that

there is a space between the two triggers suf-  
 ficient to freely permit the passage of a finger  
 between them; but this makes necessary so  
 70 much of an advanced movement of the firing-  
 finger that there is a liability that said finger  
 will pull the rear trigger instead of the front  
 one. In my improved construction this lia-  
 bility is prevented and the arrangement is  
 75 more compact and the appearance is im-  
 proved. With the light pull the sear is pre-  
 vented from engaging with the safety-notch  
 when the trigger is pulled by the action of the  
 roller L bearing upon the set trigger, both of  
 80 which as the hammer falls are pressed up-  
 ward by the preponderance of the tension of  
 the spring K over that of the spring J. The  
 pressure of the finger upon the trigger G nec-  
 essary to disengage the sear  $d$  from the ham-  
 85 mer causes the trigger G to move beyond the  
 space required for the liberation of the trig-  
 ger, as illustrated in Fig. 2, which extra space  
 is necessarily caused by the momentum of the  
 finger in the act of pulling the main trigger.  
 90 For this reason it is not necessary to use that  
 delicate piece of mechanism in gun-locks  
 called the "fly," which is commonly found in  
 hair-trigger rifles and which has for its pur-  
 pose the prevention of the engagement of the  
 95 sear with the safety-notch. In my improved  
 construction the safety-notch is available if by  
 accident the hammer when cocked is disen-  
 gaged in any manner (except by a pull on the  
 trigger) from the sear, and the safety-notch will  
 100 catch the hammer when no pressure is applied  
 to the main trigger when the adjustment has  
 been for that purpose. This improved con-  
 struction is also safer than that which em-  
 ploys the well-known "knock-off" principle  
 105 in set triggers, because the set trigger in case  
 it flies back from the operative position will  
 not discharge the gun, as it does when the  
 knock-off construction is used. Any increase  
 of tension upon the spring K by the inward  
 110 movement of the set-screw N gives a tendency  
 to disengage the sear from the hammer.

In previous forms of gun-locks having both  
 a main trigger and a set trigger it has been  
 common to have the main trigger pushed for-  
 115 ward by the forward movement of the set  
 trigger, and therefore a longer reach of the  
 firing-finger is necessary in pulling the main  
 trigger to discharge the gun. It is evident  
 from the drawings and the foregoing descrip-  
 120 tion of my device that the setting of the trig-  
 ger I does not impart a forward (or any) move-  
 ment to the main trigger G, and therefore the  
 reach of the firing-finger is the same whether  
 the trigger I is set or not. The set trigger I  
 125 is automatic in taking the position shown in  
 Fig. 1 when there is no pressure upon the  
 main trigger G. The proper adjustment of  
 the roller L in relation to the upper end of  
 the set trigger I has been previously ascer-  
 130 tained by experiment. The spring K, to  
 which the roller L is attached, is made im-  
 movable by screwing down the screw M, which  
 confines it in its relation to the spring J, and



the requisite end thrust of the spring K is secured by the engagement of its rear bent end with the proper serration *h* of the spring J. Thus the proper position of the roller L is secured and maintained, which will not allow the set trigger I to fly back when there is no pressure on the main trigger G and will not allow the set trigger I to fly back until the hammer has nearly or quite reached the firing-pin after the pressure has been applied. If no fly is used, it is essential to have the parts in correct position; otherwise the contact of the hammer with the sear at the notch may interfere with the fall of the hammer. As already stated, the tendency of the pull on the main trigger is to afford a good margin or clearance between the sear and the hammer-notch, and therefore the required adjustment is not a difficult one to make. The upward throw or impetus of the spring is a means of giving an additional clearance of the point of the sear from the safety-notch. If, however, there is no pressure upon the main trigger, the set trigger will, the instant the sear has vacated the firing-notch, fly back so quickly as to allow the sear to engage the safety-notch, and thus stop the fall of the hammer there.

It is obvious from the drawings and the foregoing description that an upward tendency of the parts in the rear of the pivot H of the main trigger G contributes to the results hereinbefore stated, because the set trigger is attached by its pivot to the main trigger at a point to the rear of the pivot H of the main trigger, and therefore a mutual movement of the main trigger and set trigger is caused.

In Figs. 6 to 11, inclusive, I show a slight modification in the mechanism. In this construction the roller L at the end of the spring K is dispensed with, and in lieu thereof the forward free end of the spring (marked K' in Figs. 6, 7, and 11) is bent, as illustrated. The upper or inner end of the set trigger (which is marked I' in Figs. 6, 7, and 9) instead of being curved in the arc of a circle has a rearward slightly-curved bend, as shown at *z*, and which is preferably enlarged to form a head. Said set trigger has its enlargement or hub (midway between its ends) made with a rounded surface, as seen at *w*. A roller P is mounted by its axle in the slot *f* of the main trigger G upon a pivot which passes through the holes *y* in the main trigger G'. The forward free end of the spring J' rests on said roller P. The spring J' has no serrations *h*, as in Fig. 4, but has a screw-hole *v*. The spring K' has a screw-hole *u*. A screw Q passes through the hole *u* of the spring K' and through the hole *v* of the spring J' into the case or frame of the gun-lock. The roller P is for the purpose of avoiding any friction of the spring J' upon the main trigger, (marked G' in Figs. 6, 7, and 8.) The bent end of the spring K' moves freely into and out of engagement with the

bent end *z* of the set trigger I'. The operation of the mechanism in this modified construction is substantially the same as in the construction first above described, and the advantages are the same. By the enlargement of the upper end of the set trigger the rifle is made more secure from accidental discharge when the set trigger is in operative position. The extra weight of the upper end of the set trigger, due to the enlarged mass of metal there, makes said trigger more nearly balanced upon its pivot, and thus counteracts the effect of a forcible and careless placing of the rifle in an upright position when it is laid aside. In this way the liability of the accidental jarring of the sear out of its engagement with the notch of the hammer is to some degree eliminated.

I claim as a novel and useful invention and desire to secure by Letters Patent—

1. In a gun-lock, the combination of a pivotally-mounted hammer, a hammer-spring, a pivotally-mounted main trigger engageable with said hammer, a set trigger centrally mounted in said main trigger at a point to the rear of the pivotal mounting of said main trigger and having a curved upper end, a spring adapted to bear downward on the main trigger, a spring provided with means adapted to bear upward against the upper curved end of said set trigger and so to tend to counteract the effect of the main-trigger spring, and means to secure all said springs in position, substantially as specified.

2. In a gun-lock, the combination of a pivotally-mounted hammer, a hammer-spring, a pivotally-mounted main trigger engageable with said hammer, a set trigger centrally mounted in said main trigger at a point to the rear of the pivotal mounting of said main trigger and having a bent upper end, a spring having a central aperture and also a hole near one end, which spring is adapted to exert a downward pressure upon the main trigger, a spring having a longitudinal slot near one end and provided with means at its opposite end adapted to exert an upward pressure upon the upper bent end of the set trigger, means of securing all said springs in position, a screw passing through the slot of the set-trigger spring and through the said hole in the main-trigger spring into the case or frame of the gun-lock, and a set-screw passing through said case or frame, and loosely through said aperture of the main-trigger spring and bearing against the set-trigger spring, substantially as shown.

3. In a gun-lock, the combination of a pivotally-mounted hammer, a hammer-spring, a pivotally-mounted main trigger engageable with said hammer, a set trigger centrally mounted on the main trigger eccentrically thereto and provided with an upper bent end, a spring adapted to exert a downward pressure on the main trigger, a spring adapted to exert an upward pressure on the upper bent end of the set trigger, means for adjusting



said set-trigger spring longitudinally, and means for securing all said springs in position, substantially as set forth.

4. In a gun-lock, the combination of a pivotally-mounted hammer, a hammer-spring, a pivotally-mounted main trigger engageable with said hammer, a set trigger centrally mounted on the main trigger eccentrically thereto and provided with an upper bent end, a spring adapted to exert a downward pressure on the main trigger, a spring adapted to exert an upward pressure on the upper bent end of the set trigger, means adapted to regulate the tension of said set-trigger spring, and means for securing all said springs in position substantially as described.

5. In a gun-lock, the combination of a pivotally-mounted hammer, a hammer-spring, a pivotally-mounted main trigger engageable with the hammer, a set trigger mounted in the main trigger eccentrically thereto, a spring adapted to exert a downward pressure upon the main trigger and a spring adapted to exert an upward pressure upon the set trigger, substantially as shown.

6. In a gun-lock, the combination of a pivotally-mounted hammer, a hammer-spring, a pivotally-mounted main trigger engageable with said hammer, a set trigger mounted upon the main trigger eccentrically thereto and two springs adapted to exert their pressure in directions opposite to each other, one of which springs is adapted to operate on the main trigger and the other of which springs is adapted to operate on the set trigger, substantially as specified.

7. In a gun-lock, the combination of a pivotally-mounted hammer, a hammer-spring, a pivotally-mounted main trigger engageable with said hammer, a set trigger mounted upon the main trigger eccentrically thereto, a spring adapted to operate said main trigger provided with a hole near one end and with a series of parallel transverse serrations at said end, a spring adapted to operate said set trigger having one end arched or bent transversely so as to be engageable with either of the serrations of the main-trigger spring and provided with

a longitudinal slot near said end, and a screw passing through the slot of the set-trigger spring and through the hole in said main-trigger spring into the frame or case of the gun-lock, substantially as described.

8. In a gun-lock, the combination of a pivotally-mounted hammer, a hammer-spring, a pivotally-mounted main trigger engageable with said hammer, a set trigger mounted upon the main trigger eccentrically thereto, a spring adapted to operate said main trigger and provided with two holes and with a series of parallel transverse serrations at one end, a spring adapted to operate said set trigger having a longitudinal slot near one end and said end arched or bent transversely so as to be engageable with either of said serrations of the main-trigger spring, a screw passing through the slot of said set-trigger spring and through one of the holes in the main-trigger spring into the case or frame of the gun-lock, and a set-screw passing through said case or frame and loosely through the other hole in the main-trigger spring and bearing against the under side of the set-trigger spring, substantially as specified.

9. In a gun-lock, the combination of a pivotally-mounted hammer having a firing-notch and a safety-notch, a hammer-spring, a pivotally-mounted main trigger engageable with said hammer in either notch thereof, a set trigger centrally mounted on the main trigger eccentrically thereto and provided with an upper bent end constituting an enlarged head adapted to counterbalance the opposite end of said set trigger, a spring adapted to exert a downward pressure on the main trigger, a spring adapted to exert an upward pressure on the upper end of the set trigger, and means for securing all said springs in position, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

DANIEL BROWN.

Witnesses:

WARREN R. PERCE,  
HOWARD A. LAMPREY.