

No. 681,737.

Patented Sept. 3, 1901.

G. ROTH.
AUTOMATIC FIREARM.

(Application filed Aug. 18, 1900.)

(No Model.)

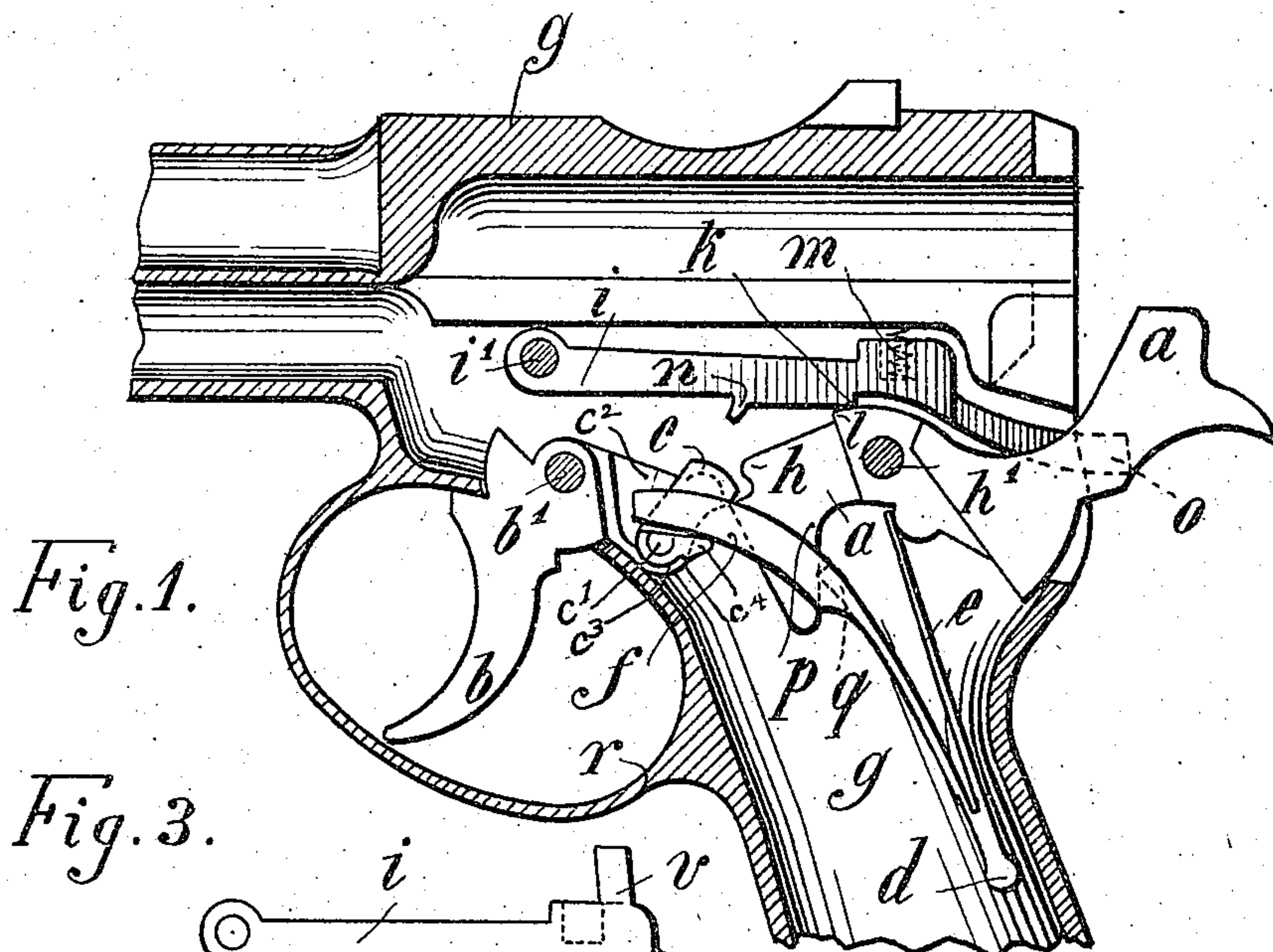
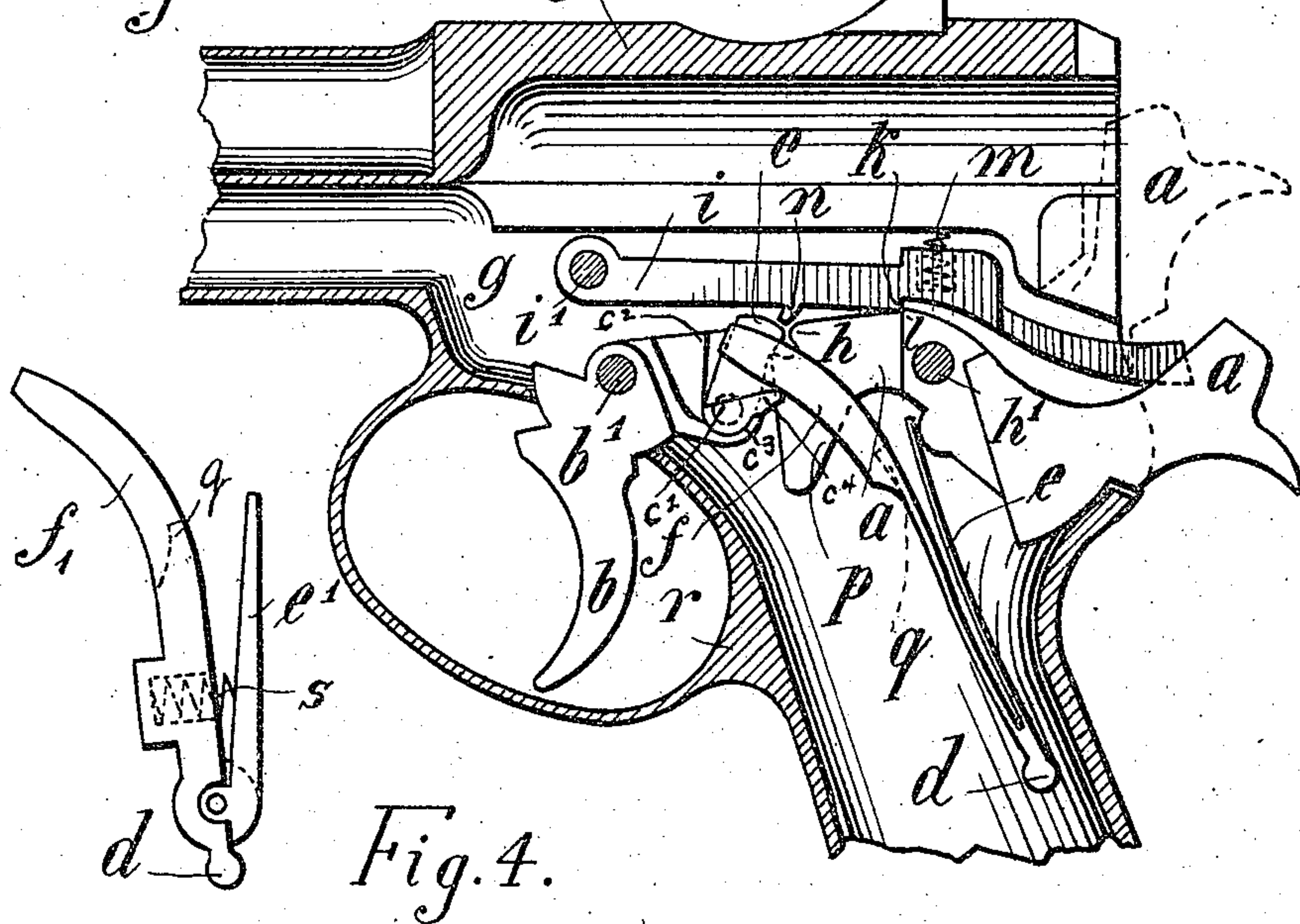


Fig. 3.

Fig. 2.



Witnesses:

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att'y.

UNITED STATES PATENT OFFICE.

GEORGES ROTH, OF VIENNA, AUSTRIA-HUNGARY.

AUTOMATIC FIREARM.

SPECIFICATION forming part of Letters Patent No. 681,737, dated September 3, 1901.

Application filed August 18, 1900. Serial No. 27,340. (No model.)

To all whom it may concern:

Be it known that I, GEORGES ROTH, manufacturer, a subject of the Emperor of Austria-Hungary, residing at No. 50 Rennweg, Vienna, in the Empire of Austria-Hungary, have invented certain new and useful Improvements in Self-Cocking Automatic Firearms, of which the following is a full, clear, and exact description.

10 In connection with automatic firearms a self-cocking mechanism common to some classes of revolvers is often employed, by means of which when the trigger is pulled the hammer is cocked, thus obviating the necessity of cocking the hammer by hand before each shot is fired and at the same time attaining the advantage that the hammer is never actually full-cocked, being always in a position of rest, although the weapon may be discharged at any moment by simply pulling the trigger. This firing mechanism usually comprises four members—viz., a hammer, a trigger with tumbler, and a two-tongued spring to actuate the hammer and the trigger. When 25 this firing mechanism is employed in connection with automatic firearms, the operation of the same is not entirely automatic, since the hammer has to be cocked by the trigger-pull after each shot has been fired, and consequently a sharp pull on the trigger is necessary, more power being required than would be necessary to fire the weapon if the hammer had been properly cocked by hand. This class of weapon is, in fact, usually termed a 35 “semi-automatic” weapon owing to this action. Since, however, these weapons have the advantage of being safe, the hammer being not at full-cock in the position of rest, the disadvantage of having to cock the hammer when pulling the trigger is often overlooked in view of the above-mentioned advantage. According to the present invention a fifth member is added to these known self-cocking mechanisms, which operates substantially as a special or additional trigger-bolt and by 45 means of which is attained that the trigger need only be utilized to cock the hammer when firing the first shot, the hammer being sub-

sequently full-cocked by the recoil of the breech-bolt.

In order to render the present specification easily intelligible, reference is had to the accompanying drawings, in which similar letters of reference denote similar parts throughout the several views.

Figure 1 is a side elevation of the parts of an automatic pistol, showing the cheek-plate removed and the hammer in a position of rest, only those parts being shown which are necessary for explaining the present invention. 60 Fig. 2 is a similar elevation showing the position of the parts when the hammer is at full-cock. Fig. 3 is a detail elevation of the additional member forming the present invention, and Fig. 4 shows a modified form of the mainspring. 65

In the present case also the firing mechanism comprises the hammer *a*, the trigger *b*, having tumbler *c*, and the mainspring *d*, having the two tongues *e* and *f*. This spring 70 may be made in one piece or may consist of two tongues joined together. The tumbler *c* is pivoted at *c'* to the upper arm of the trigger, and its movement on its pivot is limited in the known manner by the stops *c²* and *c³* 75 on the trigger-arm. The arm or tongue *e* acts as the hammer-spring and the tongue *f* as the trigger-spring, influencing at the same time the tumbler, which is pivoted to the trigger *b*. The latter is pivotally mounted in the housing at *b'*, the hammer *a* being pivotally supported in the known manner at *h'*. Although the operation of these parts is generally known, it will be well to describe it briefly in order to render the present specification 85 easily intelligible. If the trigger is pulled back from the position shown in Fig. 1, the tumbler *c* will push the nose *h* of the hammer upwardly until it reaches about the position shown in Fig. 2, thus bringing the 90 hammer *a* to the full-cock, whereupon it immediately springs forward into the position shown in dotted lines under the influence of the spring *e*, the trigger-tumbler having in the meantime been thrown out of engagement, in that the tumbler *c* and the nose *h* 95

of the hammer move in diverging arcs in the known manner. When the shot has been fired and the trigger released, the hammer will be forced back to the position shown in Fig. 3 by the recoil of the breech-bolt and will then return slightly beyond the position indicated in Fig. 1, with the nose *h* resting against the tumbler *c*, which is its position of rest, as is well known. If a series of shots are fired in this manner, the finger of the party firing tires, considerable power being necessary to cock the hammer at each shot by means of the pull on the trigger. The weapon may, however, be considered as safe when in the position shown in Fig. 1, because the hammer *a* is not at full-cock, but in its position of rest, in spite of the fact that the pistol may be discharged by simply pulling the trigger. In order, however, to enable the firearm to be discharged by a light pull on the trigger in the case of each shot, with the exception of the first, the hammer should be cocked automatically. This object is attained according to the present invention by adding a special trigger bolt or latch to the known mechanism, the said latch being indicated by *i* and being pivotally mounted at *i'* in the housing *g*. The said latch is provided with a shoulder *k* and is spring-pressed downwardly by means of a spring *m*. Thus at each recoil of the breech-bolt after the shot has been fired the shoulder *k* springs down in front of the shoulder *l* of the hammer and retains the latter in the position shown at Fig. 2—i. e., at the full-cock. The breech-bolt is not illustrated, its movement being well known, and when it recoils in the direction of the arrow in Fig. 2 it pushes back the hammer to the full-cock and moves forward again under the influence of a spring. On firing the next shot the tumbler *c* contacts with the nose *n* of the latch *i* when the trigger is pulled, thus raising the latch and releasing the hammer *a*. The latter will be again arrested at the full-cock as soon as the recoil of the cylinder has pushed back the hammer, in that the shoulder *k* will again engage the shoulder *l* of the hammer. If the firing is stopped, it would be dangerous to lay aside the weapon, because the hammer is at full-cock, and in order to release the same the latch *i* is provided with a projecting arm, as at *o*, by means of which it may be operated from the exterior of the weapon. If the arm *o* is raised, the hammer will fall into the position of rest indicated at Fig. 1 and the firearm will not be discharged, because no pull has been exercised on the trigger. The hammer is prevented from discharging the weapon, in the first place, because the nose *p* of the same is arrested by a shoulder *q* of the spring *f*, and, secondly, because the nose *h* rests against the tumbler *c*. Thus in spite of the fact that the weapon is secured a shot may be fired at any moment without first disengaging the hammer by simply pulling the trigger, in which case the pull

for the first shot will have to be strong enough to first bring the hammer to full-cock, whereafter the latch *i* will come into action again in the manner previously described. If the first shot has not to be fired suddenly, the hammer may be cocked by hand in the usual manner. It will be evident that the latch *i* need not necessarily be prolonged backward, as at *o*. A lateral arm or a front arm or handle might be applied to the same in any convenient manner, according to circumstances. If the latch *i* is provided with an upwardly-extending lug *v*, as illustrated in Fig. 3, which lug should extend into the longitudinal guideway of the breech-cylinder, the said latch *i* may be utilized as a cartridge-ejector or as a means for preventing the forward movement of the firing-pin, as described in connection with my patent application of April 14, 1900. The mainspring *d* may also be modified in the manner illustrated in Fig. 4, rigid arms *f'* and *e'* being substituted for the tongues *e* and *f*, said arms being actuated apart by means of the spring *s*. This latter construction is preferable, being altogether stronger, and the spring *s* being interchangeable the pressure of the parts may be varied at will by placing a stronger or lighter spring between the two arms.

I claim as my invention—

1. In a firearm having a self-cocking firing mechanism the combination of a latch pivotally supported in proximity to the hammer-tail and the trigger-tumbler, a spring to depress said latch down in the direction toward the hammer-tail, a shoulder at the lower part of the said latch and a shoulder on the hammer-tail into which said latch-shoulder engages when the hammer is at full-cock, means in connection with the trigger to disengage the said latch when the trigger is pulled to discharge the weapon, and means for disengaging the said latch by hand from the exterior of the weapon and for arresting the said hammer in its position of rest when disengaged by hand in the manner and for the purpose substantially as described.

2. In a firearm having self-cocking firing mechanism, the combination of means for automatically bringing the hammer to the full-cock after a shot has been fired and means in connection with the trigger for releasing the hammer when the trigger is pulled, actuating mechanism for the trigger, tumbler and hammer consisting of two pivotally-connected arms *e'* and *f'*, and a spring to press the same apart said arms being pivotally supported within the housing between the trigger-tumbler and the hammer one arm of the pair bearing against the tumbler and the other against the hammer-tail substantially as described.

3. In a firearm having a self-cocking firing mechanism, the combination of a latch pivotally supported above the hammer-tail and spring-pressed downwardly, a shoulder to

5 said latch and a shoulder to the hammer-tail, with which the said latch engages when the hammer has been pushed back to the full-cock, a nose on the latch with which the trigger-tumbler engages to disengage the latch when the weapon is fired, and an upward projection to the said latch adapted to be projected into the path of movement of the

breech-bolt in the manner and for the purpose substantially as described.

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

GEORGES ROTH.

Witnesses:

ALVESTO S. HOGUE,
AUGUST FUGGER.