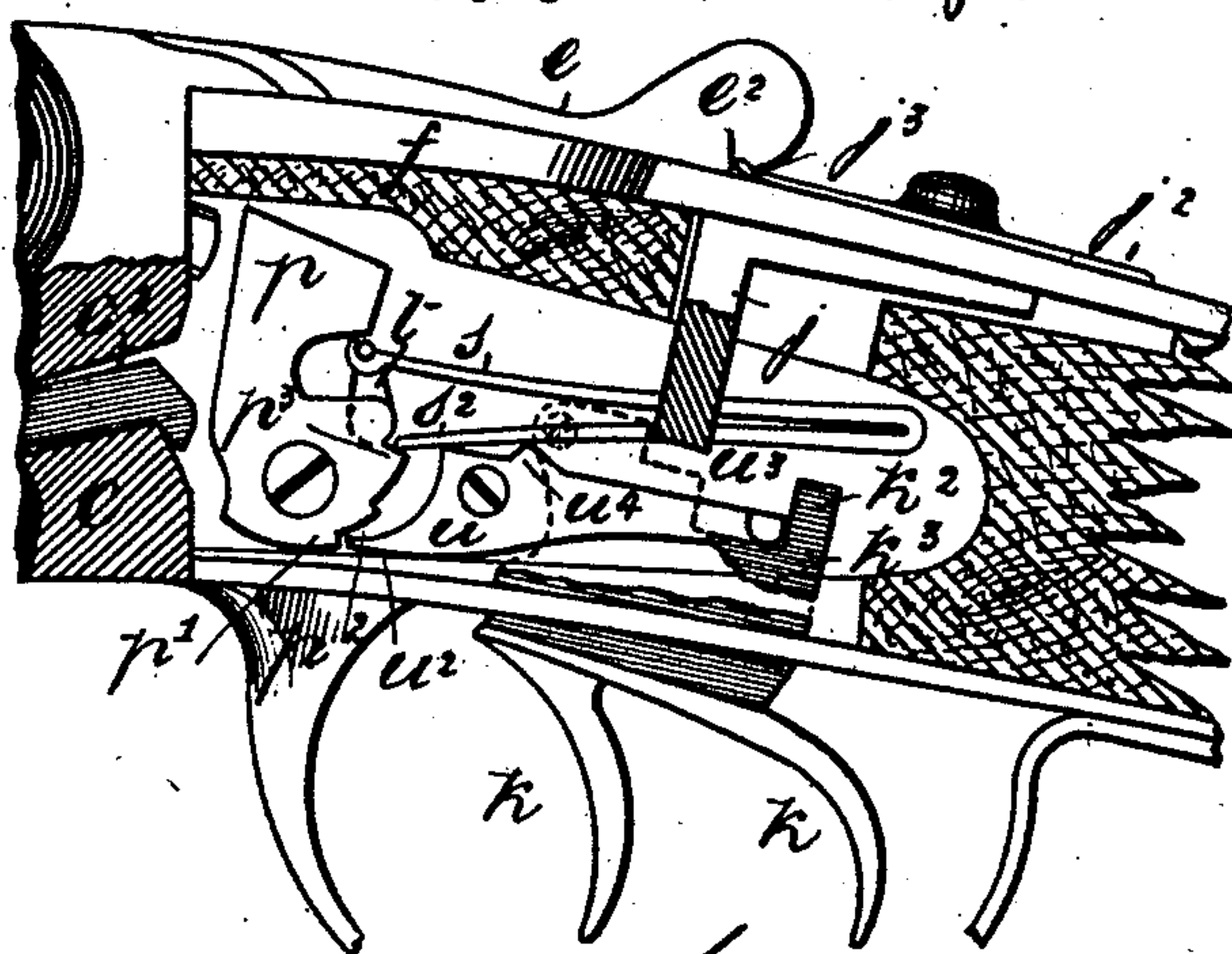
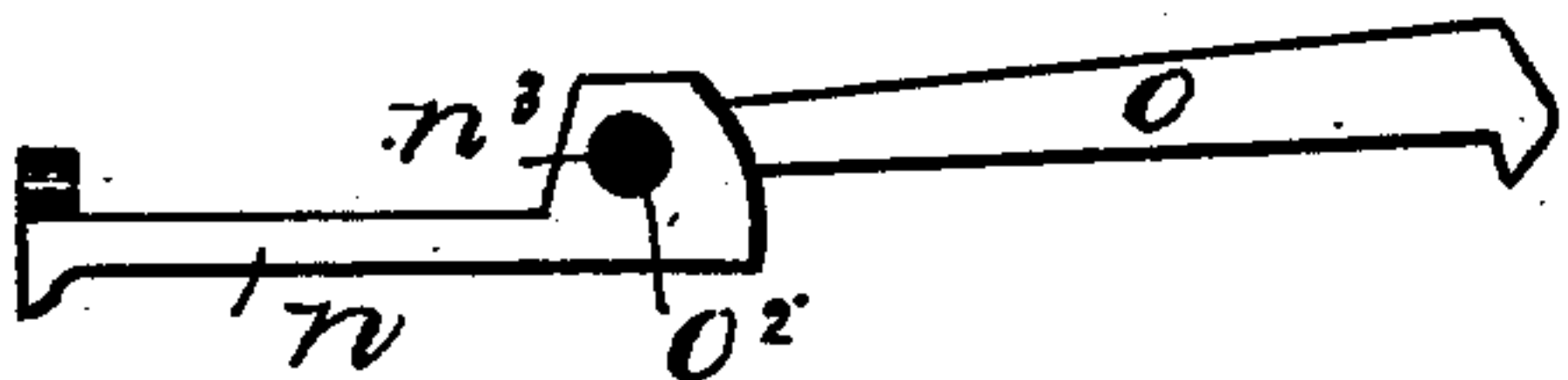
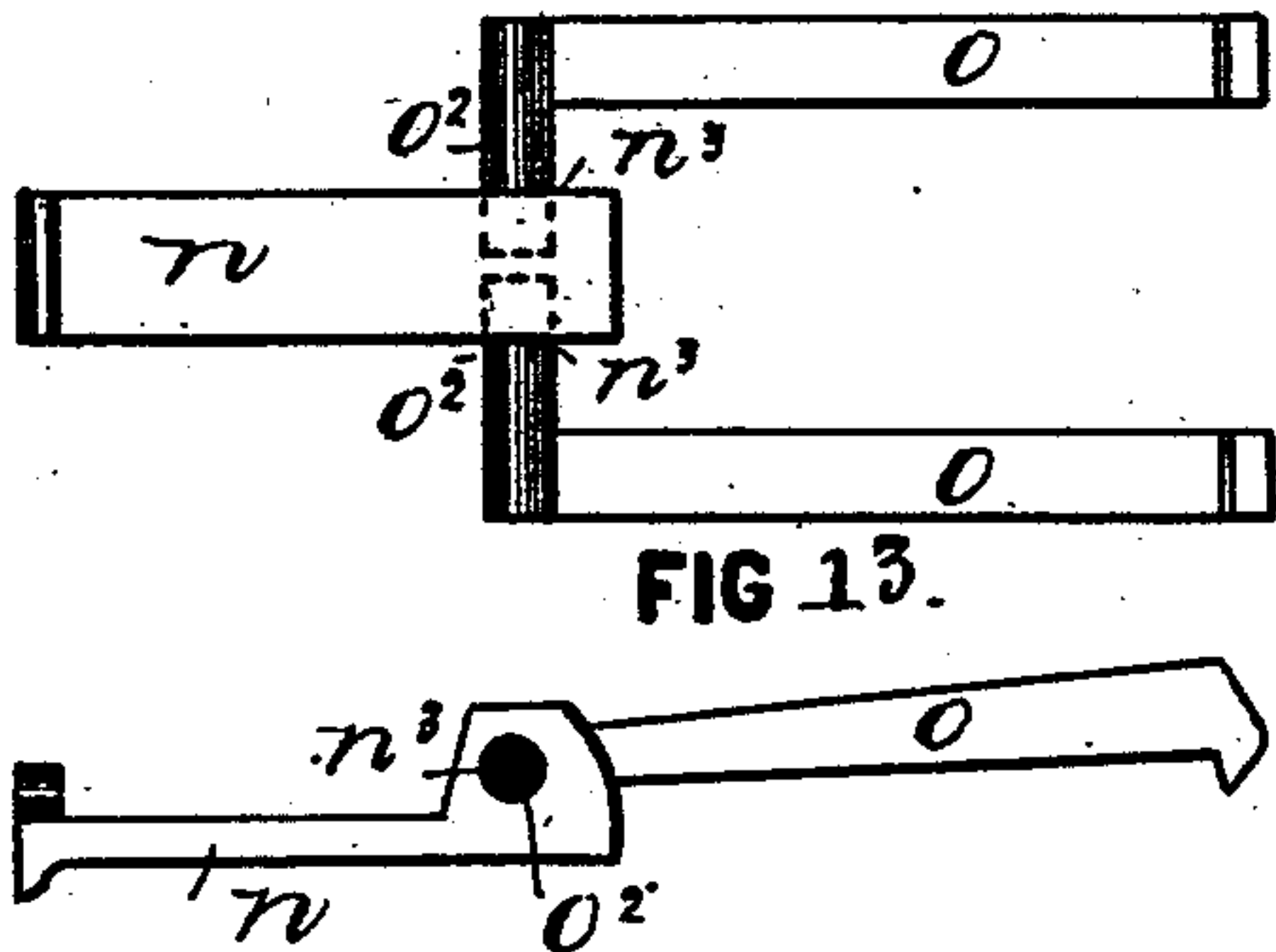
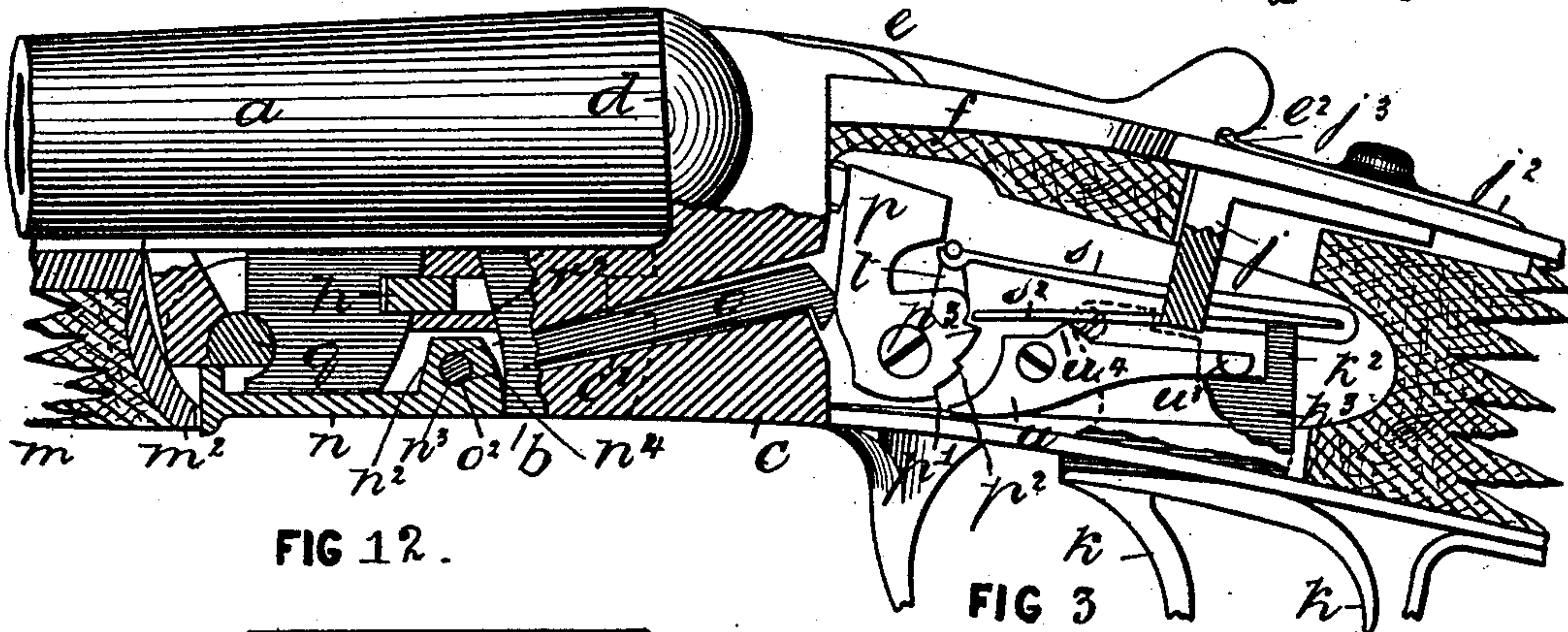
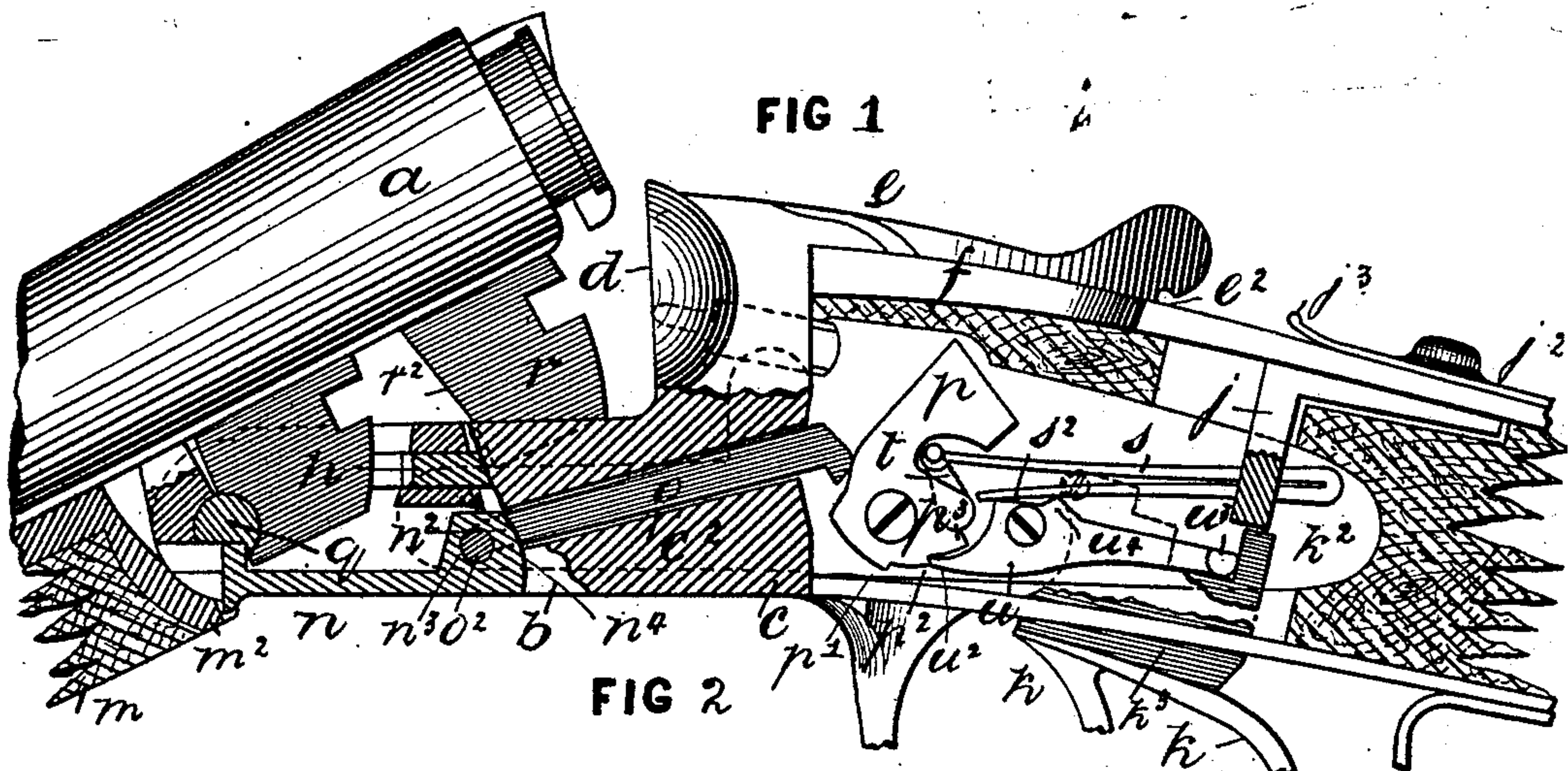


H. TOLLEY.

BREECH LOADING FIRE ARM.

No. 354,751.

Patented Dec. 21, 1886.



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BREECH LOADING FIRE ARM.

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FIG 4

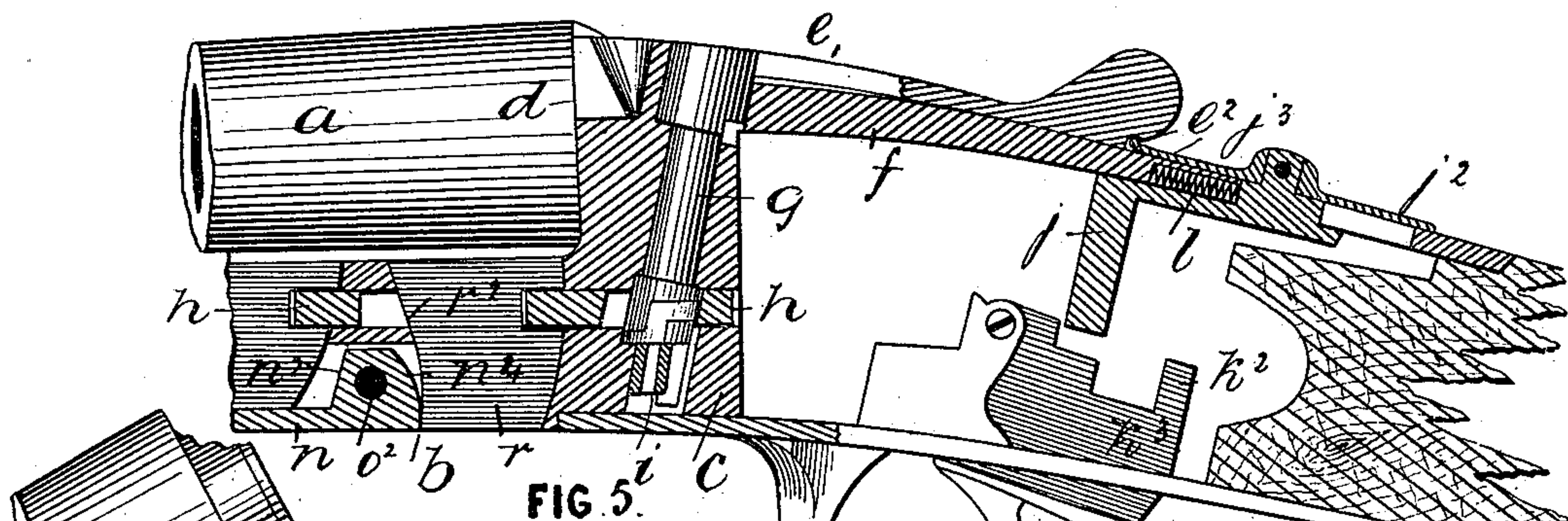


FIG 5

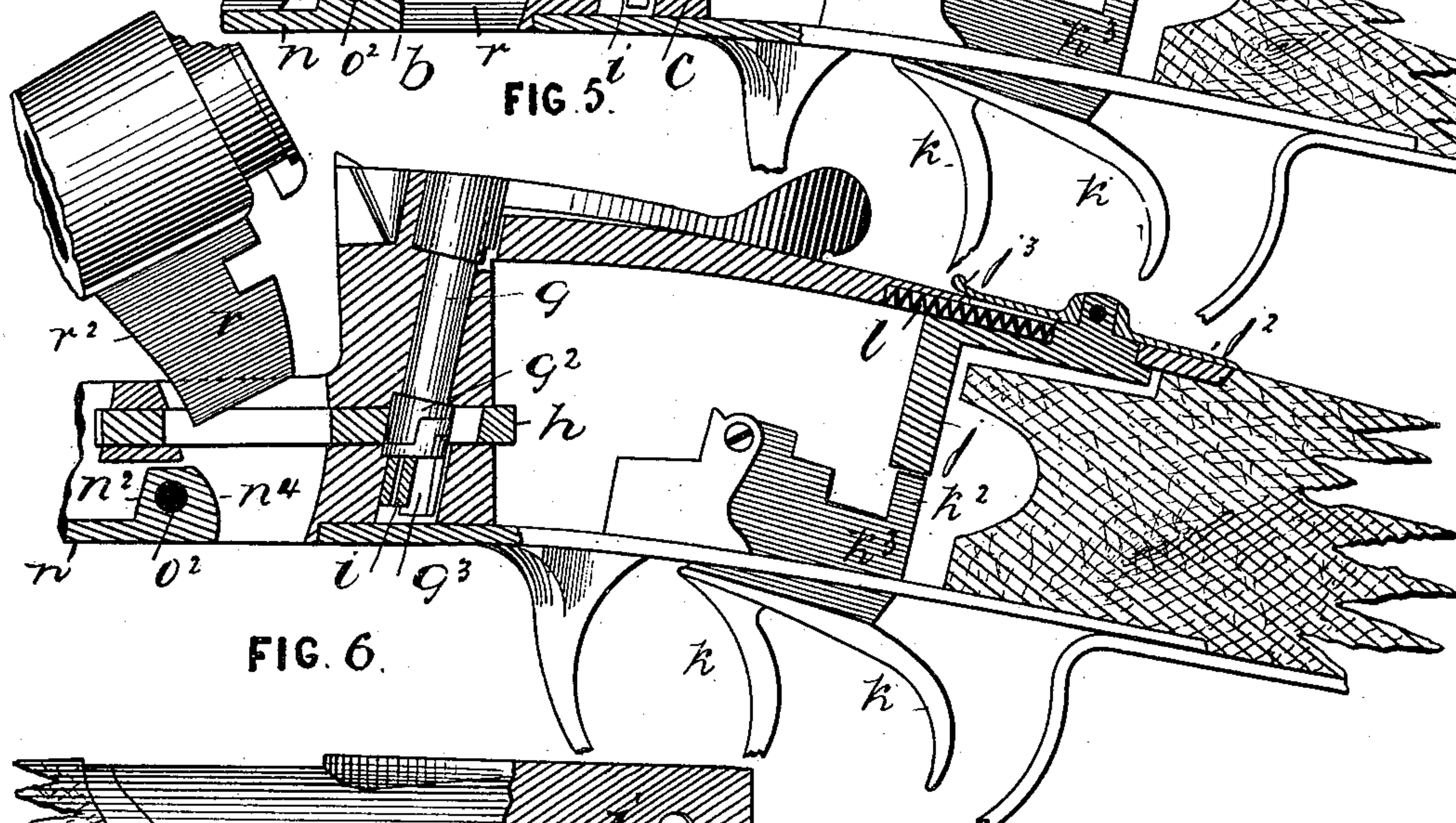


FIG 6

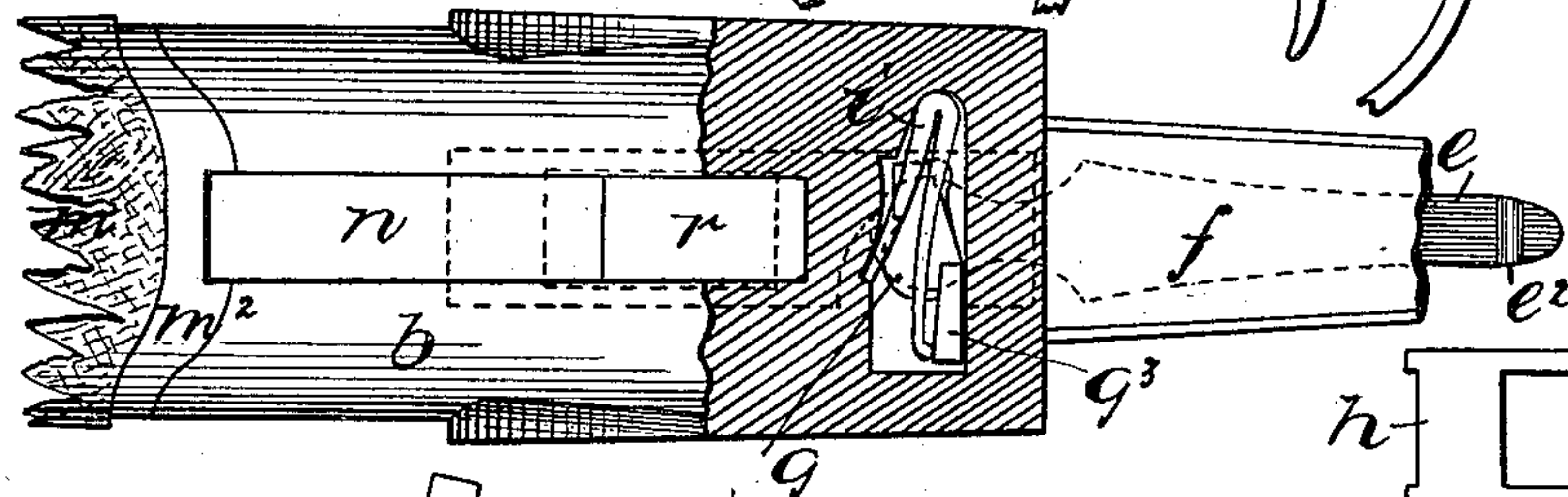


FIG 9

FIG 7

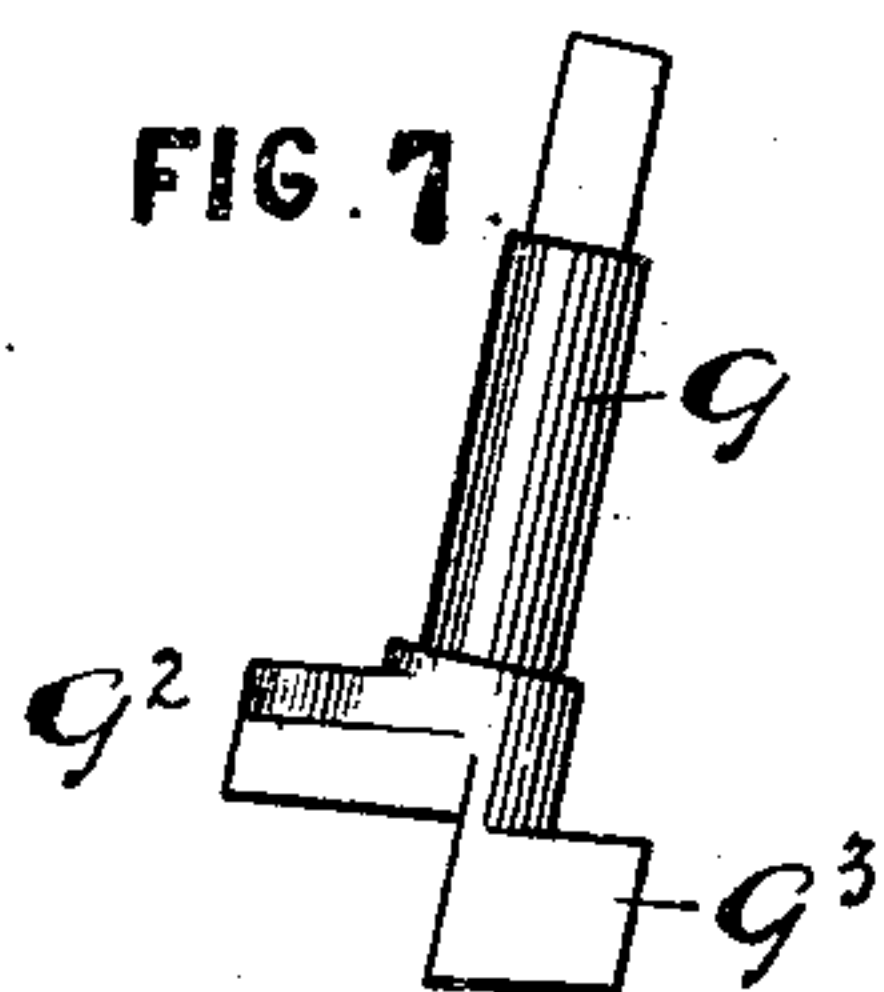


FIG 10

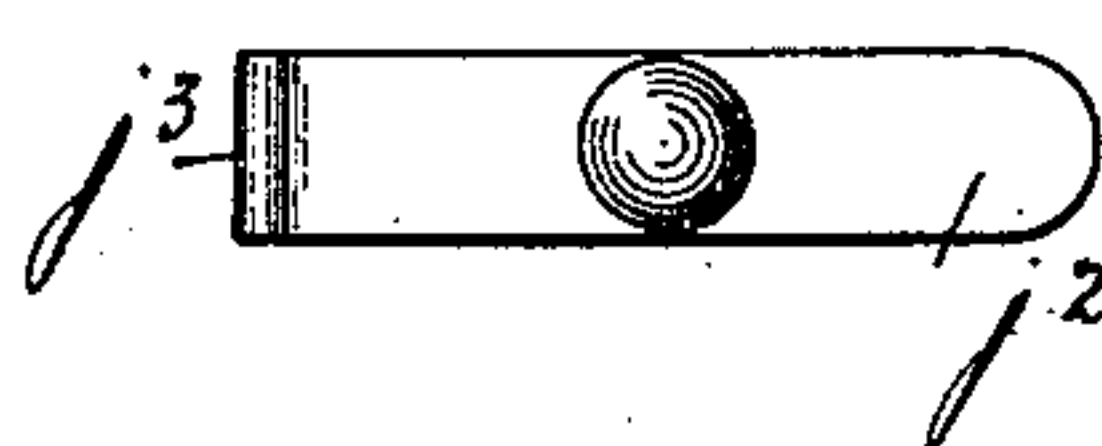


FIG 10^A

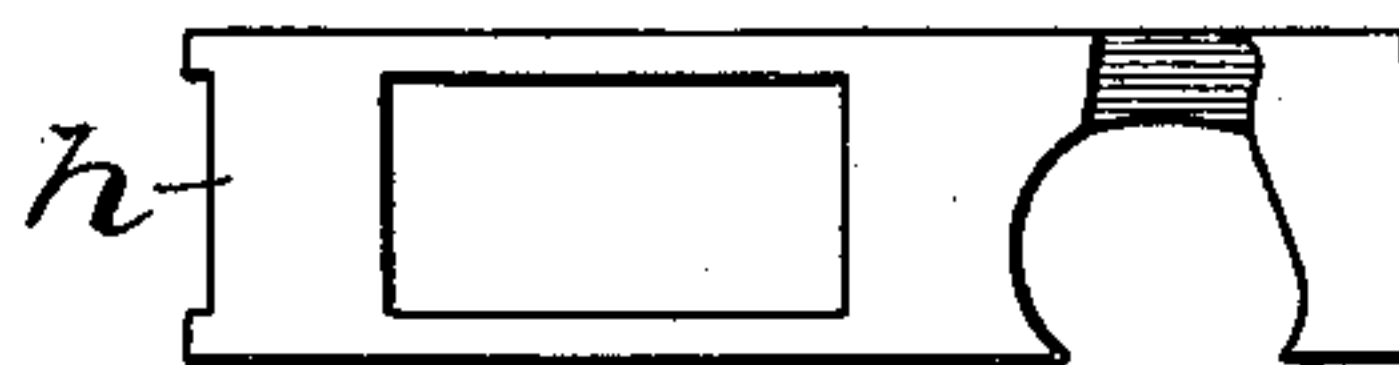
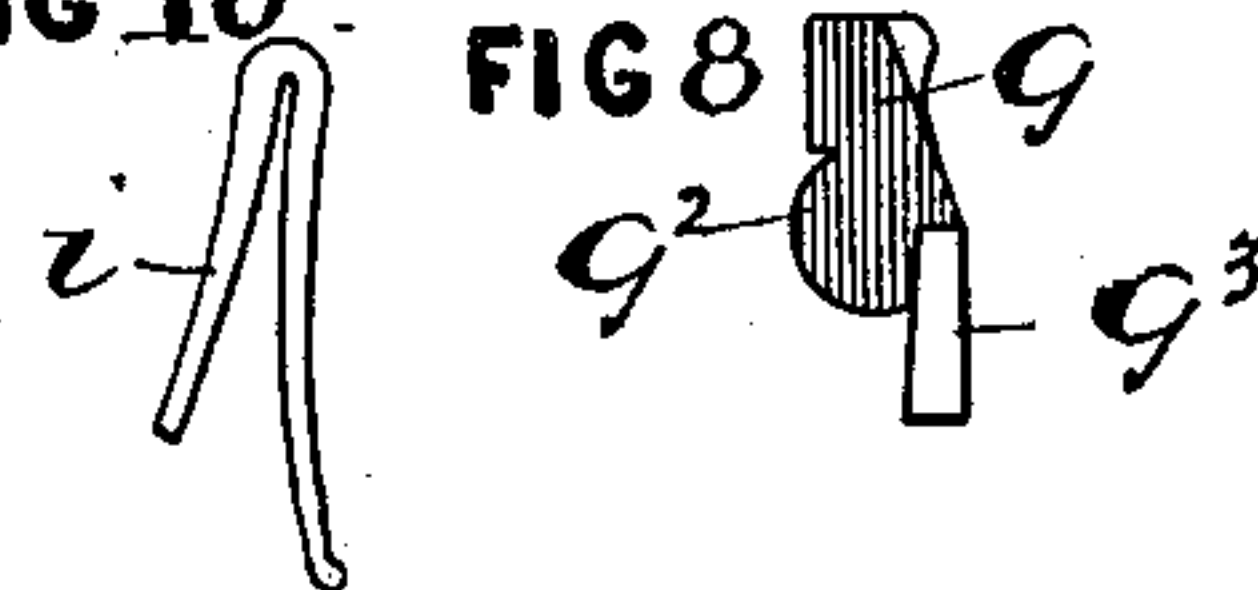


FIG 8



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UNITED STATES PATENT OFFICE.

HENRY TOLLEY, OF WEAMAN STREET, BIRMINGHAM, COUNTY OF
WARWICK, ENGLAND.

BREECH-LOADING FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 354,751, dated December 21, 1886.

Application filed September 6, 1886. Serial No. 212,843. (No model.) Patented in England August 12, 1886, No. 10,303.

To all whom it may concern:

Be it known that I, HENRY TOLLEY, a subject of the Queen of Great Britain, residing at Weaman Street, Birmingham, in the county of Warwick, England, manufacturer, have invented Improvements in Breech-Loading Small-Arms, (for which I have applied for Letters Patent in Great Britain, No. 10,303, dated the 12th day of August, 1886,) of which the following is a specification.

My invention has reference to that class of breech-loading small-arms of the kind commonly called "drop-down guns," or guns in which the breech ends of the barrels turn upon a horizontal joint on the fore part of the body; and my said invention consists, first, in rebounding or partial rebounding lock mechanism for throwing back the hammers from the strikers after discharge, the rebounding only taking place after the pressure of the finger has been relieved from the triggers; secondly, in means for taking back the locking-bolt and operating-lever by forming at the extreme lower end of the lever-spindle an extending arm, against which the free end of a V-spring takes its bearing for the bringing back of the parts to their normal positions on the closing of the barrels; thirdly, in an automatic trigger-safety operated by the outer end of the lever on the tang, instead of by means of a rod acted upon by the spindle, as is commonly done. The safety-slide is held back from a position of safety by one end snapping into a catch cross-notch made in the end of the lever; fourthly, in hammer-raising mechanism, consisting of a slide with cocking-rods working in the fore part of the guns, and operated by the fore part coming against the fore-end iron on the opening of the barrels.

I will describe my invention in connection with a double gun.

Figure 1 represents in longitudinal vertical section a breech-loading gun constructed according to my invention, and which said gun is shown with its barrels open, hammers cocked, and the arm at safety. Fig. 2 shows the same with the barrels closed and the arm fired, with one of the triggers pulled, or in a position which it would assume on firing the arm. Fig. 3 represents the same section and view as Fig.

2, but with the hammer thrown back from the firing-pin. This automatic rebound is effected on pressure being relieved from the triggers after firing. Fig. 4 shows a complete longitudinal vertical section through the middle of the gun, in order to show the spindle of the bolt-withdrawal lever and the safety, the latter being shown out of action or in a position for the gun to be fired. Fig. 5 represents the same section and view as shown at Fig. 4, but with the barrels open and the locking-bolt withdrawn, and also the arm at safety. Fig. 6 shows an under side view of the gun, with a portion of the body in section, to exhibit the spring for forcing back the locking-bolt and lever on the shutting down of the barrels. Fig. 7 is a separate view of the spindle, and Fig. 8 is a plan of its under side. Fig. 9 is a plan of the locking-bolt. Fig. 10 is a top view of the safety-slide, and Fig. 10^a is the spring for forcing back the bolt and lever on the barrels being closed. Fig. 12 represents a plan of the cocking-rods and slide, and Fig. 13 shows a side elevation of the same.

The same letters of reference indicate corresponding parts in the several figures of the drawings.

a are the barrels, turning in a vertical plane upon the fore part, *b*, of the arm. *c* is the body, and *d* is the breech portion of the said body, against which said break-off the open ends of the barrels are held firmly during discharge, or from which they are released by means of the lever *e*, working horizontally upon the tang or tang-strap *f*. This lever carries at its inner end an axis or spindle, *g*, for the withdrawal of the locking-bolt *h* by means of the cam or quadrant-arm *g*², and at the extreme lower end of this said lever-axis a short arm or wing, *g*³, extends outward, and against which the free end of a V or flat spring, *i*, takes its bearing for the forcing back of the locking-bolt and lever to their normal positions. The under side of the outer end of the said lever has a notch or catch depression, *e*², wherein the front yielding end, *j*³, of the slide *j*² of the safety-catch *j* engages and is held until the lever is turned aside, when the angular movement made by it releases the slide from the notch and allows the slide to be pressed back

from the position Fig. 4 to the safe position, Fig. 5, thereby preventing the triggers k from being pulled.

The automatic pressing back or returning of the safety expedient to a position of safety (on being liberated) is effected by a coiled spring, l , situated within a gap or opening formed in the tang-strap, with the ends of the spring abutting and pressing against the back of the opening and the front of the safety. Thus the act of turning the lever aside for the opening of the barrels releases the safety, which is pressed home by the spring carrying the depending part of the safety over the standing-up part or rise k^2 of the trigger-blades k^3 , thereby preventing the trigger from rising on being pulled.

m is the fore end of the arm, and m^2 is the fore-end iron, which on the barrels being opened presses upon the lip of a cocking-slide, n , working within a gap or cut-away part on the under side of the fore part, b . This slide carries jointed cocking-rods o , which work obliquely in the sides of the body c , with their back ends impinging upon the lower parts of the breasts of the hammers p , so that on the barrels being turned on the joint-pin q , for opening, the slide n is urged backward by its fore part bearing against the fore-end iron m^2 , and so urging back the rods which cock the hammers, as represented in Fig. 1.

The cocking-rods o have trunnion-like ends o^2 , working in knuckle-bearings n^3 . This is for the purpose of allowing the rods and slide to make a slight angle with respect to each other on being pressed home. The slots or gaps c^2 , wherein the cocking-rods work, are a little broader than the rods themselves, to admit of them having a little play with their guide-recesses on the backward and forward movements of the slide.

The return movement of the slide and cocking-rods is effected by the inside inclined edge of the back lump, r , coming against the inclined knuckle part n^2 of the slide n . Thus, on the closing of the barrels, when the parts are in the positions as represented in Fig. 1, the incline r^2 of the back lump, r , comes on the top of the incline n^4 of the slide, thereby pressing back the slide and cocking-rods with it to the positions as represented at Figs. 2, 3, and 4.

The rebounding lock mechanism for throwing back the hammers from the striker ends after discharge is as follows: The hammer p , already described, is provided with two bents, $p' p^2$, and a spring-bearing shoulder, p^3 . p' is a rebound bent, p^2 is a full-cock bent, and p^3 is a shoulder upon which the free end of the stand side s^2 of the mainspring s rests when pressure is removed or relieved from the triggers after firing. The top side of the spring is connected to the hammer, in the usual way, through the intervention of a link, t . u is a sear with the usual sear-nose, u^2 , returned end u^3 , and upon the top or upper part of the said sear a rise, u^4 , is formed, upon which the free

or stand-side end of the spring rests, and takes its bearing on the sear being raised—that is, either when the sear is in its cocked position, or in that position which it assumes on the trigger being pulled. Thus, on the hammer being cocked with the sear-nose in the full-cock bent, the spring's back-pressure is removed from the rebound bearing-shoulder by the suspension of its lower limb out of the range of the hammer, which is done by the rise on the sear-top, keeping the said limb in a raised or quiescent state. This allows the hammer to be cocked without the spring following its rebound-shoulder. After firing and the finger's pressure being relieved from the trigger, the sear-tail is consequently lowered. This allows the free end of the lower limb of the spring to now take its bearing upon the rebound-shoulder, which thereby causes the partial rebound of the hammer from the end of the striker, as represented at Fig. 3.

To open the gun after firing, as in Fig. 2, turn aside the lever e , when its angular movement causes the liberation of the slide, which is now taken into a position of safe by the tension of the coiled spring l , as represented in Fig. 1. This brings the depending safety-stump above the ungapped or uncut-away part of the trigger-blades, thereby preventing the trigger from rising and the accidental discharge of the gun. The said turning aside of the lever also rotates the spindle g , and with it the cam formation g^2 and short arm g^3 . The former withdraws the locking-bolt from the under lumps, while the latter compresses the free end of the spring i , situated within the body of the arm. The barrels now liberated turn upon their joint-pin q , and on the downward movement of the barrels the fore-end part $n m^2$, attached thereto, presses upon the cocking-slide n , pressing it backward, and at the same time moving forward the rods o , which impinge upon the breasts of the hammers and cock them, as represented in Fig. 1.

On closing the barrels after loading, the inside edge, r^2 , of the back lump, r , slides or moves upon the incline n^2 of the cocking-slide n and presses it back within the fore part to its normal position, as represented in Figs. 1, 2, 3, and 4 of the drawings; and when in this position, with the barrels firmly bolted to the face of the break-off, the arm can be discharged by first removing the safety-slide j^2 into the position as represented in Fig. 4. This is done by making its yielding or spring end j^3 engage with the undercut notch e^2 of the tang-lever e . Thus by simply pressing the slide forward its front end, j^3 , is made to yield and snap into the undercut notch e^2 of the lever, which is thereby retained out of safe so long as the position of the lever remains unchanged.

To discharge the gun when cocked and with the safety out of position, pull one or other of the triggers k , so as to remove the sear-nose from out of the full-cock bent. This movement allows the hammers to fall and the projection on the top of the sear to forcibly

impress itself against the under side of the lower limb of the mainspring, thereby raising it from its former position and out of contact with the hammer. In other words, the act of pulling the trigger elevates the stand-side limb of the spring above its bearing-shoulder, or the shoulder on which it rests on pressure being relieved from the triggers. The reverse action of the triggers allows the spring to expand itself again, so as to bring the free end of the stand side again upon its bearing-shoulder p^3 , thereby causing the hammer or hammers to recede or partially rebound.

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

1. In a breech-loading small-arm, the combination of a fore body part, b , fore end, m m^2 , hammer p , exposed traversing cocking-slide n , and oblique cocking-rods o , jointed to the said cocking-slide by trunnion return ends o^2 , all constructed and arranged substantially as described, whereby the direct impingement of the fore-end iron m^2 upon the exposed slide on the falling of the barrels cocks the arm.

2. The combination, with the barrel a , having the back lump, r , with curved side r^2 , of the cocking-slide n , having the knuckle part n^2 , with incline n^4 , and the oblique cocking-rods o , hinged to said knuckle part, whereby the closing of the barrel returns the cocking mechanism to normal position, substantially as described and shown.

3. In rebounding lock mechanism for small-

arms, the combination, with the hammer p , having the bents p' p^2 and shoulder p^3 , of the sear u , having the rise u^4 , the spring s , and the trigger-blades k k^2 k^3 , said spring having its lower or free limb s^2 extended forward, so as to impinge upon the shoulder p^3 and cause the hammer to rebound when the trigger is released after firing and the sear allowed to drop, substantially as described.

4. In a breech-loading small-arm, the combination, with the barrel a , lever e , and locking-bolt h , of the spindle g , having the cam g^2 , engaging with the locking-bolt, and the lateral projection g^3 , impinging against the folded spring i , substantially as and for the purpose described.

5. In a trigger-safety for small-arms, the combination, with the unlocking-lever e , having shoulder e^2 , of the slide j^2 , the depending safety j , attached thereto, the spring l , and the trigger-blade k^3 , having the rise k^2 , all constructed and combined substantially as described, whereby when the lever is turned aside and released from the slide the latter will be automatically shifted by the spring l and the safety j brought above the rise k^2 , as set forth and shown.

Signed this 12th day of August, 1886.

HENRY TOLLEY.

Witnesses:

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FRANK W. E. BRISTOW,

Both of Birmingham.