

No. 741,273.

PATENTED OCT. 13, 1903.

G. D. POTTER.
BREECH LOADING BREAKDOWN GUN.

APPLICATION FILED MAY 12, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

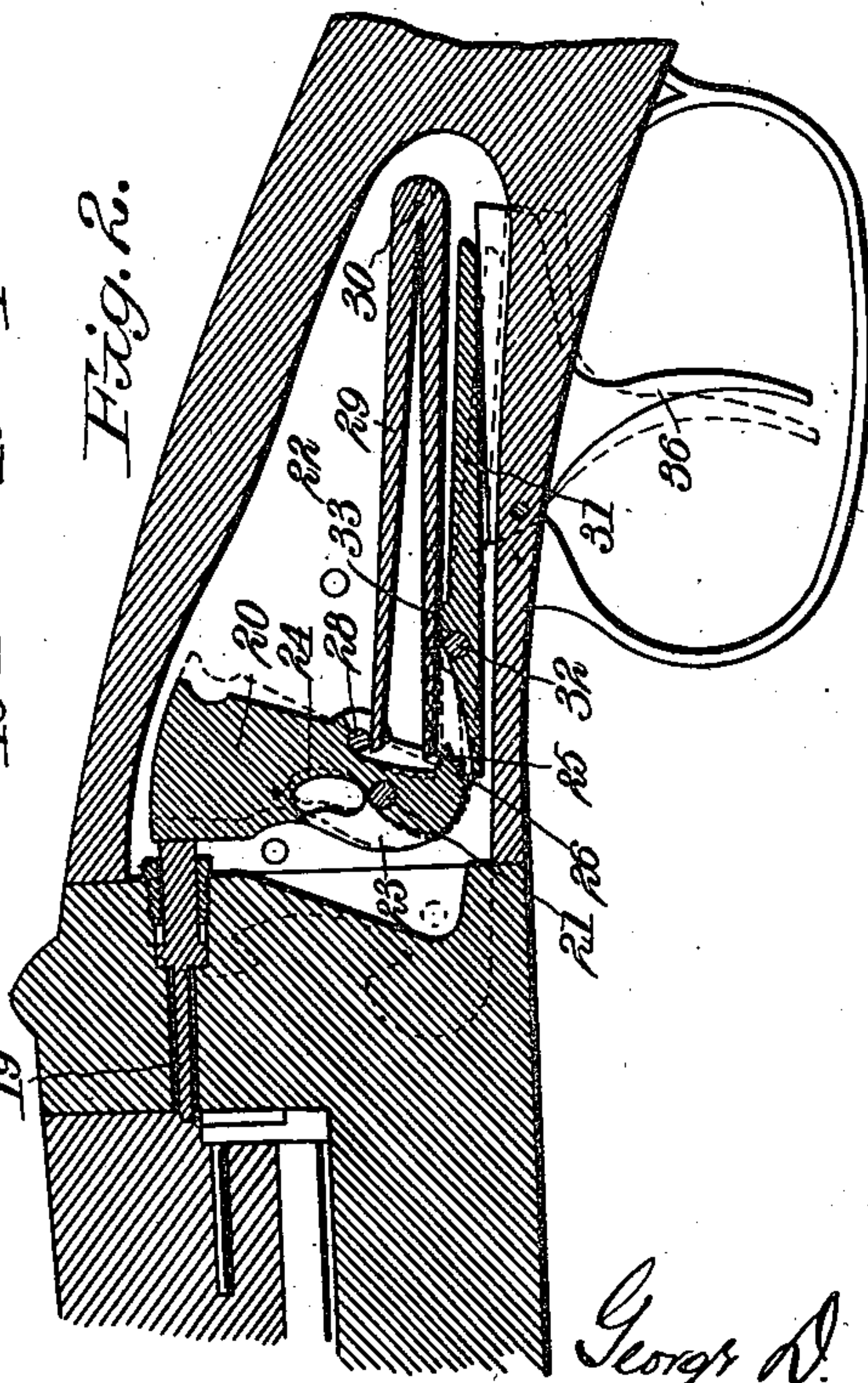
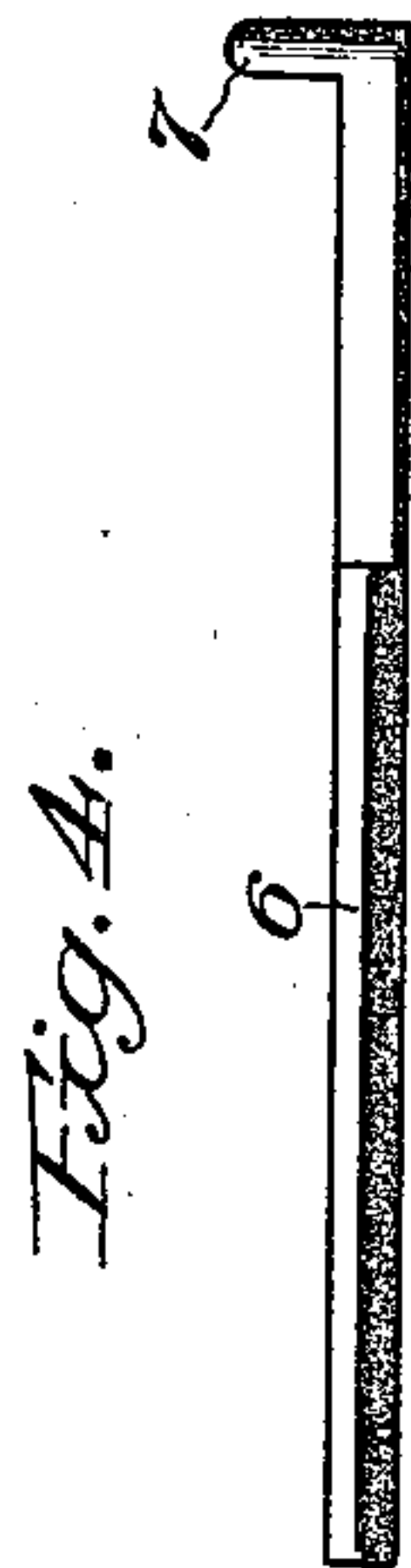
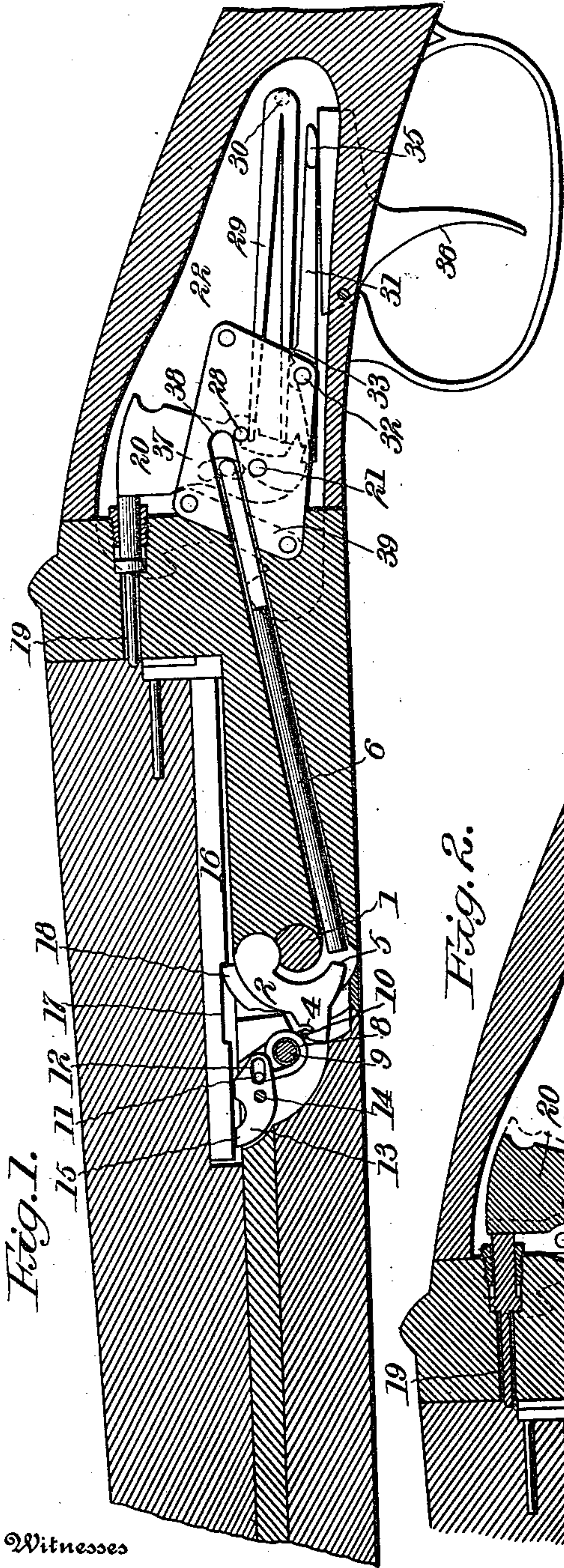
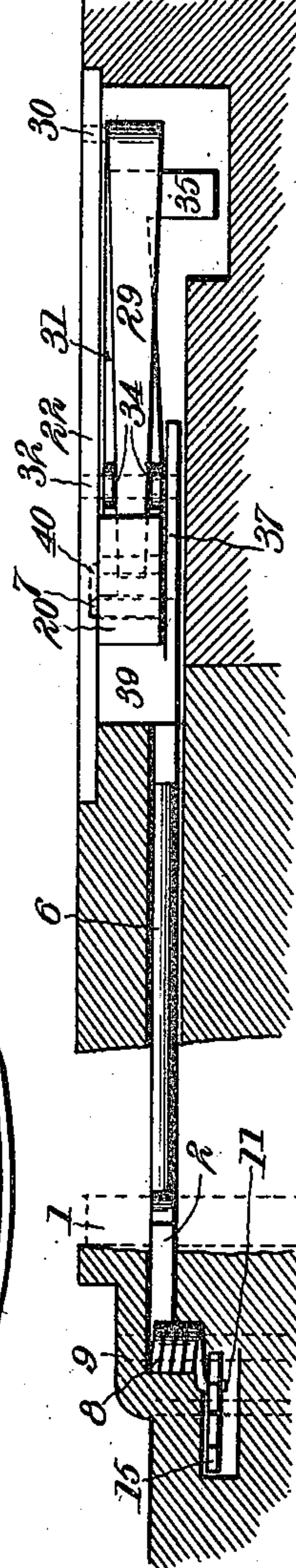


Fig. 3.



Witnesses

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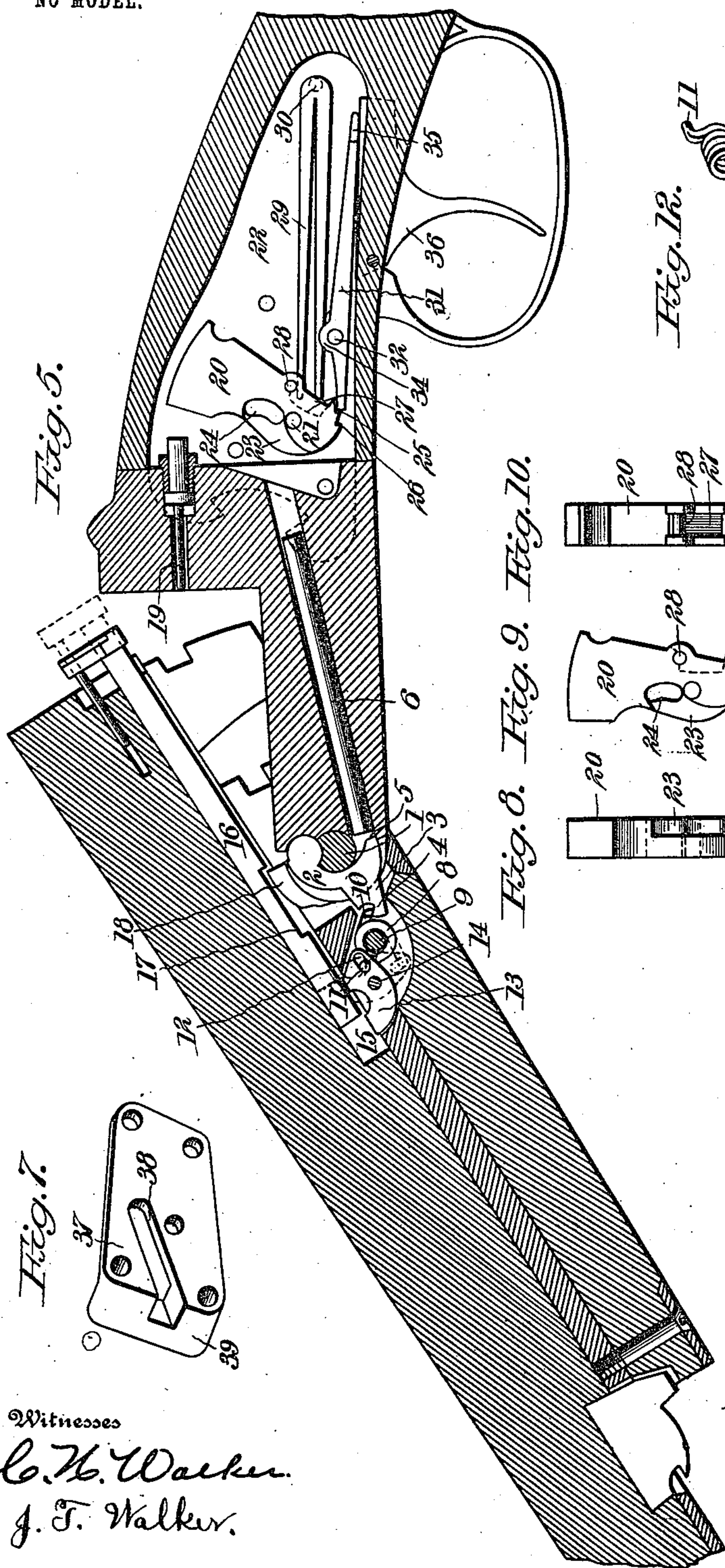
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2 SHEETS—SHEET 2.



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE D. POTTER, OF SPOKANE, WASHINGTON.

BREECH-LOADING BREAKDOWN GUN.

SPECIFICATION forming part of Letters Patent No. 741,273, dated October 13, 1903.

Application filed May 12, 1902. Serial No. 106,999. (No model.)

To all whom it may concern:

Be it known that I, GEORGE D. POTTER, a citizen of the United States, residing at Spokane, in the county of Spokane and State of Washington, have invented a certain new and useful Improvement in Breech-Loading Guns, of which the following is a full, clear, and exact description.

This invention is in the nature of an improvement upon the gun set forth in my Letters Patent of the United States numbered 542,494, dated July 9, 1895, and No. 625,601, dated May 23, 1899; and the objects of the invention are to cock the tumblers by the dropping of the barrels and by the release of the triggers to slightly retract the tumblers from the firing-pins after the same have delivered a blow upon the primers and effect a rebound of the tumblers and by the act of dropping the barrels to selectively eject a fired shell from either or both barrels of the gun.

In carrying out the invention there is employed a detachable lock comprising, essentially, a tumbler, a sear, and a combined main and sear spring, all mounted upon a lock-plate and secured and supported by a bridle. The cocking-lever is curved and journaled in a knuckle above the hinge-pin and has a forwardly-projecting arm and hook, the lower end of said lever bearing against a cocking-rod and the forwardly-projecting arm and hook extending through a slot in the fore-end iron. The cocking-rod at its rear end has a bearing in a recess in the tumbler and has a laterally-projecting pin to engage a slot in the tumbler adjacent said recess to hold the cocking-rod at all times in engagement with said tumbler and impart its momentum to the tumbler. A coiled ejector-spring has one end turned back upon the coil on the under side, forming a lug for coöperation with the cocking-lever, and its opposite end projects upwardly and tangentially and is provided with a laterally-projecting pin to engage the ejector-hammer, and this ejector-hammer is pivoted in a slot in the fore-end iron directly under the end of the extractor-stem and has a slot at its rear end to receive the said ejector-spring pin and coöperates with the extractor-stem, which latter is contained in a channel extending longitudinally through the flat of the barrels, as usual.

Having thus stated the principle of my in-

vention, I will proceed now to describe the best mode in which I have contemplated applying that principle and then will particularly point out and distinctly claim the part, improvement, or combination which I claim as my invention.

In the accompanying drawings, illustrating my invention, in the several figures of which like parts are similarly designated, Figure 1 is a vertical longitudinal section of the mechanism of the right-hand barrel of a double-barrel breech-loading hammerless ejector shotgun with the parts in position after firing and with the trigger under pull and before the barrels are dropped. Fig. 2 is a vertical section through the longitudinal center of the tumbler, sear, mainspring, and firing-pin, showing in full lines the parts in the position of Fig. 1 and in dotted lines the tumbler retracted as in the rebound position. Fig. 3 is a top plan view of the parts of Fig. 1 in the same position. Fig. 4 is a top view of the cocking-rod detached. Fig. 5 is a view similar to Fig. 1 with the barrels dropped, tumbler cocked, extractor normally projected in full lines, and, together with the position of the ejector-hammer and spring, shown fully projected in dotted lines, the bridle being removed and the cocking-rod broken off to more clearly expose the tumbler, sear, and combined spring. Fig. 6 is a side elevation of the lock and lock-plate detached. Fig. 7 is a perspective view of the bridle detached. Fig. 8 is a front end elevation, Fig. 9 a side elevation, and Fig. 10 a rear elevation, of the tumbler detached. Fig. 11 is a side elevation of the inner side of the lock-plate detached with the adjacent end of the cocking-rod in dotted lines. Fig. 12 is a perspective view of the ejector-spring detached.

It is to be observed that neither Fig. 1 nor Fig. 5 is a true section, but each in reality is a side elevation of the several parts in position in the gun, the other parts not shown or merely indicated being of any usual or approved construction, and these parts may be such as the corresponding parts in the guns of my patents before mentioned, and for the sake of brevity the following description will be confined to the novel features of this invention and their coacting parts.

The hinge-pin 1 is recessed to form a socket for the disk end of the cocking-lever 2, and

this cocking-lever has a forwardly-projecting arm 3, in which is the notch 4, constituting a hook, and said lever has the rearwardly-projecting arm 5, which coöperates with the cocking-rod 6, arranged in a channel through the front extension of the frame and extending rearwardly and provided with a laterally-projecting pin 7, which engages the tumbler, as will presently appear.

10 A coiled ejector-spring 8 is mounted upon a pin 9 in the fore-end iron, and this spring has one end returned beneath it, as seen in Fig. 12, to constitute a lug 10, which is adapted to engage the notch 4 of the cocking-lever 15 2, while the other end of said spring is turned up tangentially and is provided with a pin 11, which enters a slot 12 in an ejector-hammer 13, pivoted upon a pin 14 in the fore-end iron and having a flat bearing-face 15 arranged in a slot in the fore-end iron and capable of being projected upwardly, as shown in dotted lines in Fig. 5, to engage the split extractor-stem 16, which latter may be of usual construction and arranged in a channel extending longitudinally of the flat of the barrels, as usual. Said extractor-stem is provided with a notch 17, which is engaged in the first instance by the extractor-post 18 in the dropping of the barrels.

30 19 is a piston-like firing-pin, preferably as shown in Figs. 1, 2, and 5, but which may be of any usual or approved construction.

20 is the tumbler, pivoted at 21 to the lock-plate 22 and bridle hereinafter described and 35 having in its forward face a recess 23 to receive the rear end of the cocking-rod and having an arcuate slot 24 at the rear of said recess to receive the laterally-projecting pin 7 of the cocking-rod. The lower end of the 40 tumbler is provided with the bent 25 and also in advance of it the half-bent 26, and the rear of the said tumbler is provided with a longitudinal recess 27, in the upper end of which is a wear-pin or spring-bearing 28, which may 45 be made hard and perfectly smooth before insertion. There is employed a combined main and sear spring 29, of two limbs united at their rear ends and secured to the lock-plate by a pivot 30, the upper limb entering 50 the recess 27 in the rear of the tumbler and bearing upon the pin 28 and the lower and shorter limb bearing upon the sear 31, which is pivoted at 32 and has its shorter arm adapted to engage the bent 25 and half-bent 26 of 55 the tumbler. The longer arm of this sear in the rear of its pivot is provided with a lump 33, resembling generally a knife-edge bearing, such as used in weighing-scales, and the lower limb of the combined main and sear 60 spring rests upon this lump, so as to insure its action upon the sear. The sear is made with upwardly-projecting opposite ears 34 adjacent its pivot-hole, and the lower limb of the combined main and sear spring passes 65 between these ears, and the said ears form lateral abutments to hold the spring in en-

gagement with the sear. The rear end of the sear has the lateral projection 35 to coöperate with the trigger 36, substantially as usual. The tumbler, spring, and the sear are held 70 in place upon the lock-plate by means of a bridle 37, (shown detached in Fig. 7,) which is secured to the lock-plate, and the tumbler-pivot 21 has a bearing in this bridle as well as in the lock-plate. The bridle also has an 75 opening 38 for the reception and guidance of the cocking-rod. The front of this bridle has the laterally-projecting wall 39.

As shown in Fig. 11, the lock-plate is provided with a groove 40, in which the laterally-projecting-pin 7 of the cocking-rod enters 80 and which serves as a guide and support for said pin and prevents it from bending or turning over under the resistance of the tumbler in cocking the same. The point of the 85 pin is tapered, so as the more readily to enter the slot 24 in the tumbler when the lock is put on.

It will be observed that the lock-plate has mounted upon it all of the members of the 90 lock and that therefore in the detachment of the lock-plate all of the said members are carried with it, and hence this construction is of great convenience in repairing or inspecting the mechanism and also in holding 95 the parts in position when detached.

The lock-plate 22 is made with a dovetail scroll 41 at its forward end which engages and interlocks with a complementary part in the body of the gun, thus serving to hold the 100 body and lock firmly together, the lock-plate being let into the body.

The operation is as follows, supposing the parts to be in position immediately after firing, as shown in Fig. 1: When the barrels 105 are depressed, as in Fig. 5, the bearing-face of the slot in the fore-end iron acts upon the projecting arm 3 of the cocking-lever with a rotary and sliding motion, swinging said lever backward, and the rear end of the latter engaging the cocking-rod forces said rod back- 110 ward, and consequently forces the tumbler back against the pressure of the mainspring until the bent 25 of said tumbler is engaged by the forward end of the sear, and thus the 115 tumbler is held in the cocked position with the mainspring under tension. Concurrently with these movements the projecting arm 3, by reason of its eccentric pivot-bearing relatively to the hinge-pin, is partially withdrawn 120 from the fore-end slot, and its notch 4 having previously upon the fall of the tumbler engaged the lug 10 of the ejector-spring said spring is coiled tighter around its pivot, and so put under tension against the resistance 125 of the ejector-hammer holding the opposite end of said spring, said ejector-hammer bearing square against the under side of the extractor-stem until the said stem is moved by engagement with the extractor-post 18, as 130 usual. As soon as the forward end of the extractor-stem passes over the bearing-face

15 of the ejector-hammer said hammer is released and acting under the impulse of the ejector-spring flies up into the dotted-line position, Fig. 5, and striking smartly on the end of the extractor-stem suddenly drives said stem backward, as shown in dotted lines in Fig. 5, and ejects the partly-extracted shell. As shown in Fig. 1, the rear end of the sear and the lower limb of the spring 29 are slightly raised and held by the trigger under the pull of the trigger, and this slight elevation of the lower limb of the mainspring is caused by its bearing upon the lump 33. The primary function of the sear is to hold and release the tumbler, and its secondary function is to hold the lower limb of the mainspring in the raised position until the tumbler has delivered its blow upon the firing-pin. When the trigger is released and through it the sear, the lower limb of the mainspring drops, and its forward end striking upon the bottom of the recess 27 in the tumbler neutralizes the stress of the upper limb of the mainspring, and the rear extension of the tumbler having a greater leverage upon the tumbler than the bearing of the upper limb has upon the tumbler the latter falls back or rebounds to the dotted position, as shown in Fig. 2, and the sear then engaging with the half-bent 26 will hold the tumbler securely in the rebound position. It will be observed that the bearing-faces of the said hook and lug; respectively, are slightly beveled and that in consequence of these beveled bearing-faces the ejector-spring is put under partial tension when said hook is caused to engage with said lug by the upward swing of the cocking-lever. By this means slack or lost motion is avoided when the rebound of the tumbler is effected, as before described, and the resistance of the ejector-spring acting upon the cocking-lever materially assists in effecting said rebound. In fact, a complete rebound of the tumbler might be effected in the manner last-above set forth, and I wish particularly to claim such construction. Until the gun is fired and the cocking-lever is revolved forward by the fall of the tumbler acting through the cocking-rod, as above described, the hook 4 on the forward projection 3 of said cocking-lever is not in engagement with the lug of the ejector-spring, and therefore the gun may be opened and closed at will without causing the ejector mechanism to operate. The ejector-spring and hammer remain inert until acted upon by the hook of the cocking-lever after firing. It will be apparent that the cocking-lever will be held out of action, with the lug of the ejector-spring, by gravitation when the gun is in position for working or shooting.

What I claim is—

1. In a breech-loading gun, a lock-plate, a tumbler pivoted thereon and having a recess in one side forward of the pivot, and a transverse slot at the back of said recess, combined with a cocking-rod projecting into said

recess and having a laterally-projecting pin entering said slot.

2. In a breech-loading gun, a cocking-rod arranged in the body thereof and having a rectilinear motion therein, and provided with a laterally-projecting pin, combined with a transversely-slotted tumbler, and a removable lock-plate upon which the tumbler is pivoted, the said pin adapted to enter said slot when the lock-plate is put in position on the gun.

3. In a breech-loading gun, a cocking-lever eccentrically journaled in the knuckle of the gun, and having a forwardly-projecting hook, in combination with a coiled ejector-spring, the said projecting hook cooperating with said spring when the gun is fired.

4. In a breech-loading gun, a coiled ejector-spring mounted in the fore-end, combined with an ejector-hammer with which said spring is connected at one end, and means to engage the other end of said spring to put it under tension when the gun has been fired.

5. In a breech-loading gun, a coiled ejector-spring having one end turned back upon and beneath the coil to form a lug and its opposite end projecting tangentially and terminating in a laterally-extending pin, combined with a cocking-lever and an ejector-hammer with which said lug and pin respectively coact.

6. In a breech-loading gun, an ejector-hammer pivoted longitudinally in the fore-end iron, combined with a tension-spring operatively connected with said hammer, and an extractor-stem normally restraining said hammer and acted upon to release the said hammer and permit it to complete the movement of the extractor only after the gun has been fired.

7. In a breech-loading gun, an ejector-hammer pivoted longitudinally in the fore-end iron, combined with a tension-spring which actuates said hammer when under tension, and an extractor-stem by the movement of which said hammer is automatically released only after the gun has been fired.

8. In a breech-loading gun, an ejector-hammer pivoted near its longitudinal center, and having a slot at or near one end, combined with a coiled ejector-spring, one end of which engages said slot.

9. In a breech-loading gun, a lock-plate, a tumbler pivoted thereon and having a recess in one side forward of the pivot, and a transverse slot at the back of said recess, combined with a cocking-rod projecting into said recess and having a laterally-projecting pin entering said slot, the lock-plate having a groove opposite the pin on the cocking-rod and receiving and guiding the end of said pin.

In testimony whereof I have hereunto set my hand this 2d day of May, A. D. 1902.

GEORGE D. POTTER.

Witnesses:

F. D. ALLEN,
ALBERT ALLEN.