(No Model.) 2 Sheets—Sheet 1.

G. D. POTTER.

REBOUND AND EJECTING MECHANISM FOR BREAKDOWN GUNS.

No. 542,494. Patented July 9, 1895.

Fig. 1

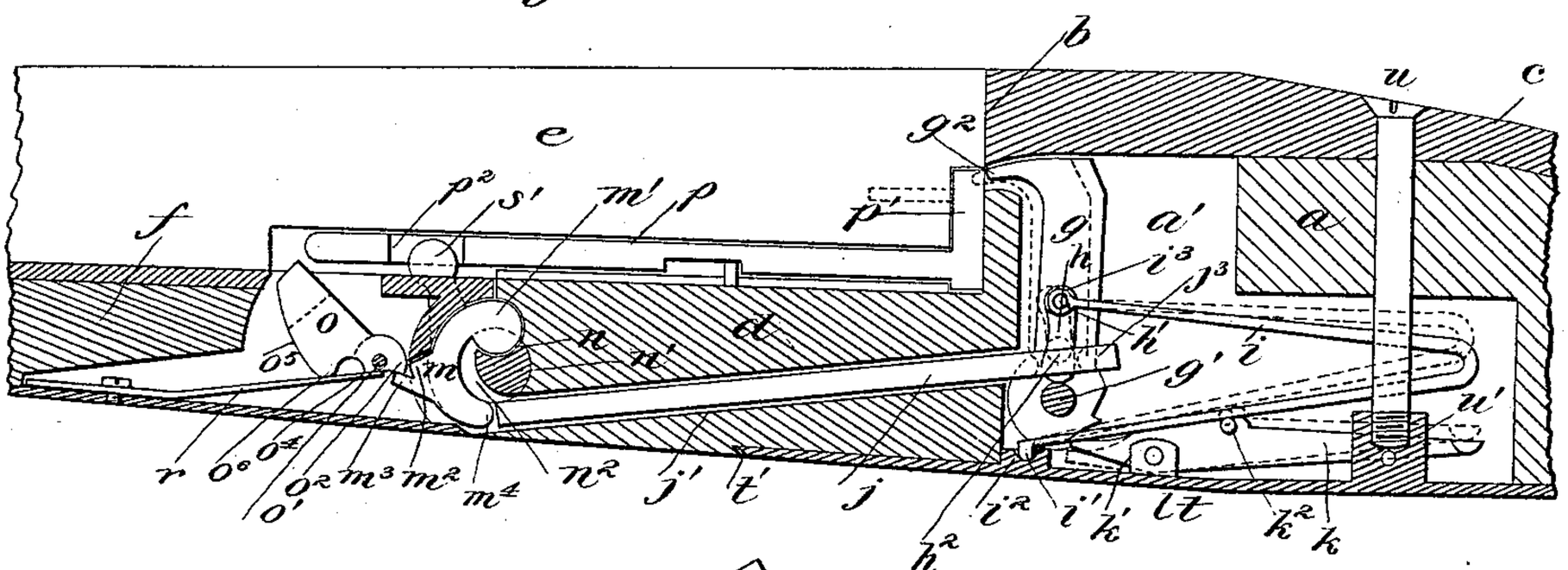
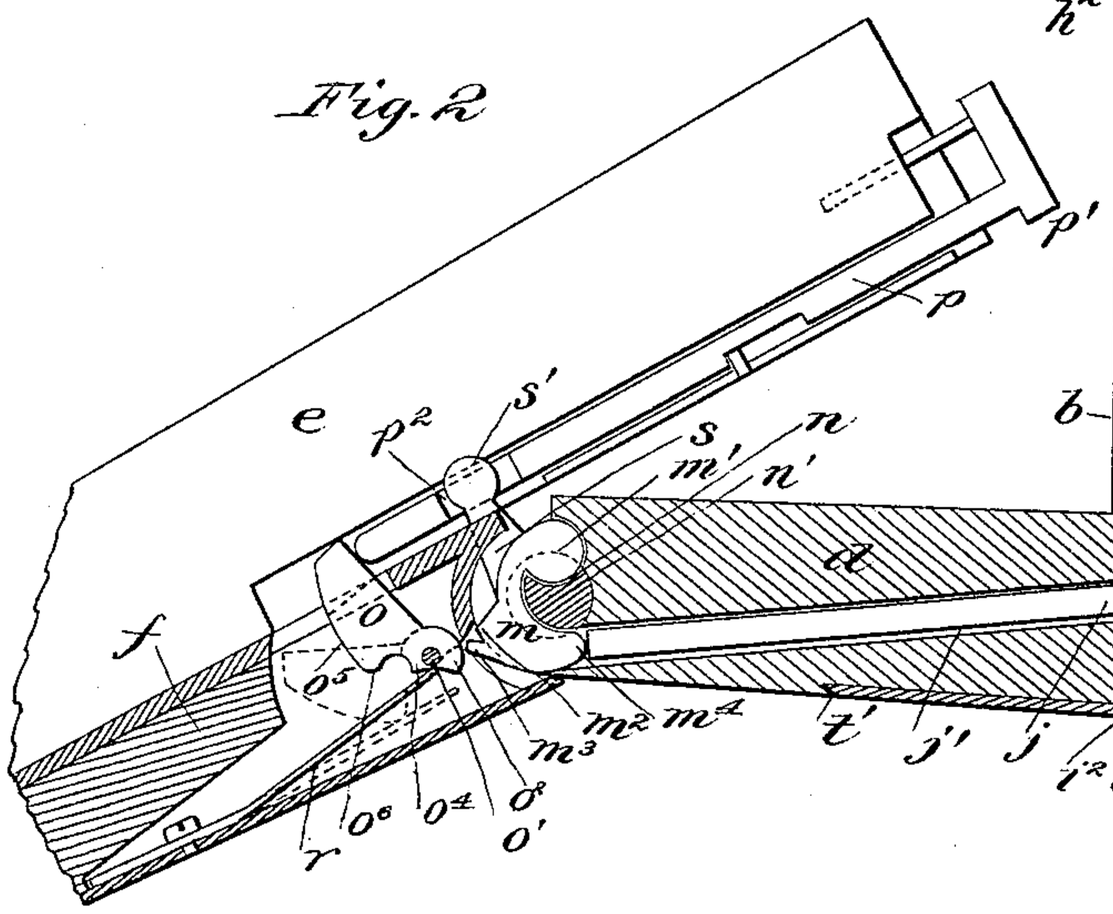


Fig. 2



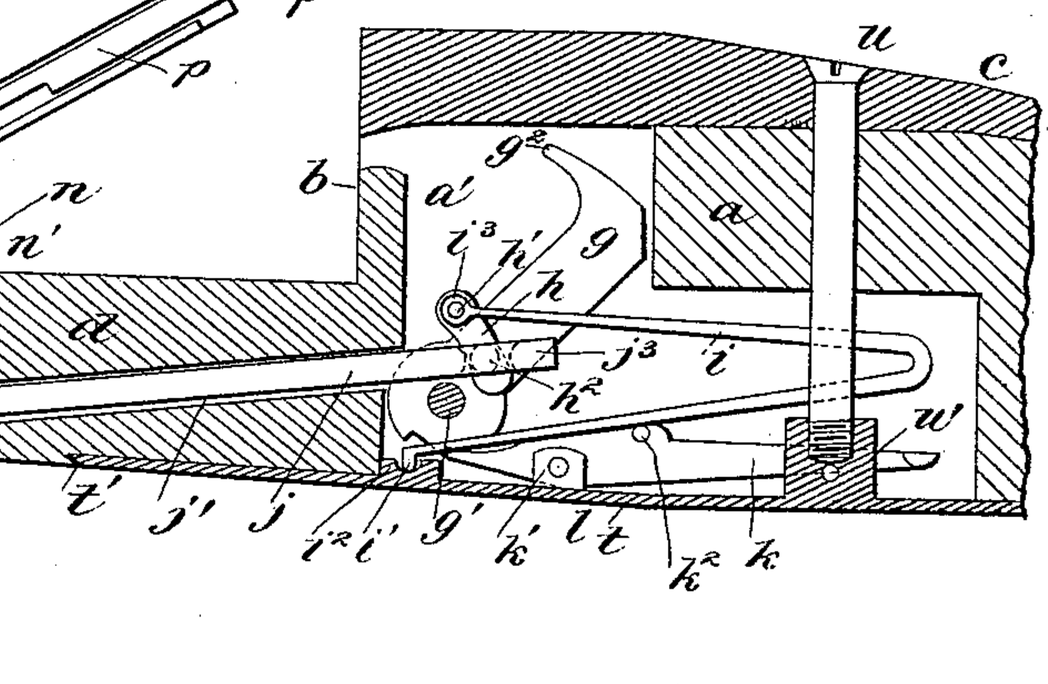
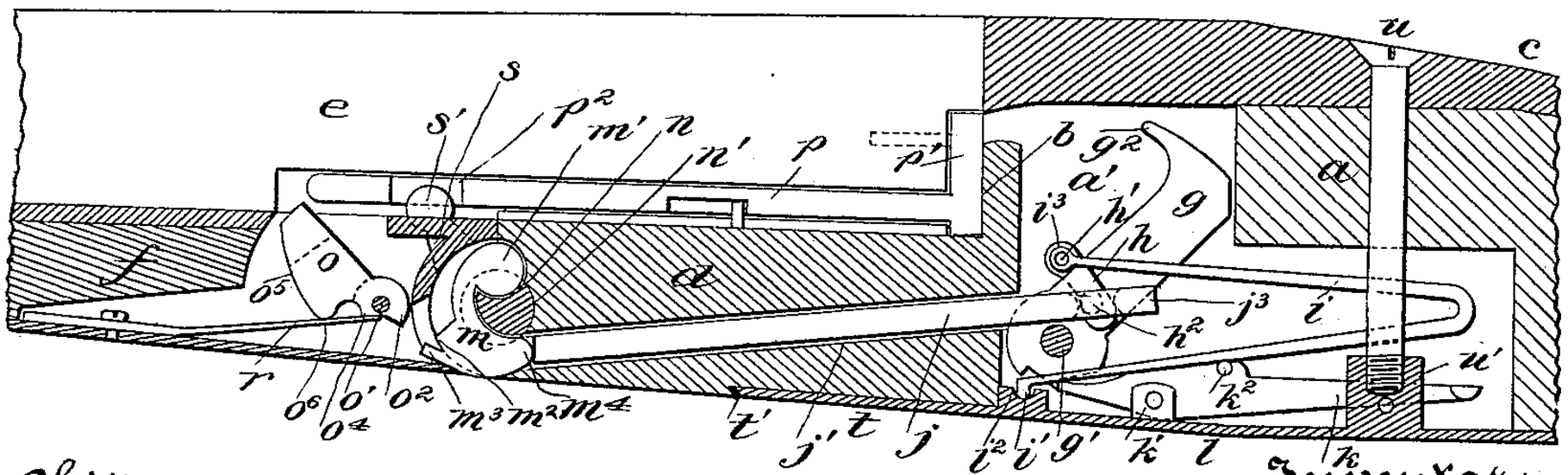


Fig. 3



Witnesses
J. F. Coleman
C. A. Fincke.

Inventor
George D. Potter
by Wm. F. Fincke
Atty.

(No Model.) 2 Sheets—Sheet 2.

G. D. POTTER.

REBOUND AND EJECTING MECHANISM FOR BREAKDOWN GUNS.

No. 542,494. Patented July 9, 1895.

Fig. 4

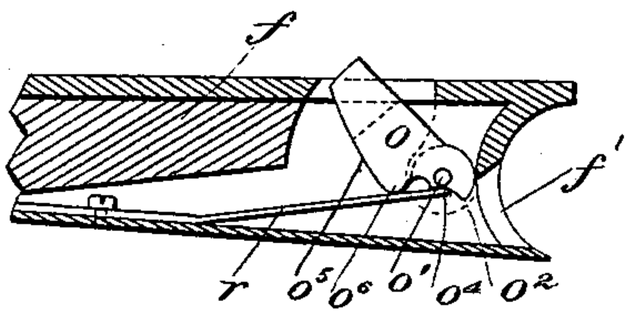


Fig. 5

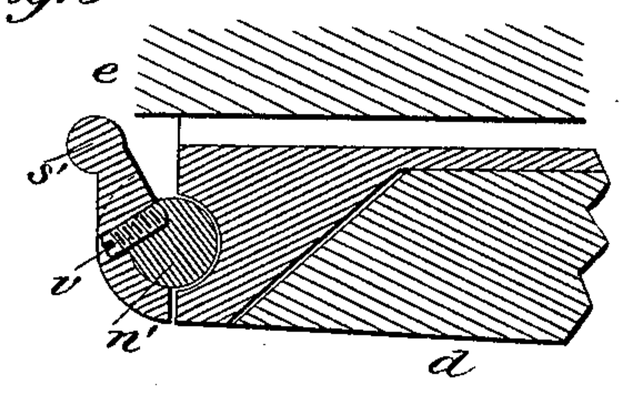


Fig. 6

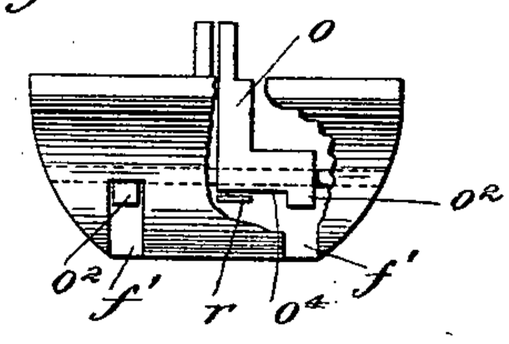


Fig. 7

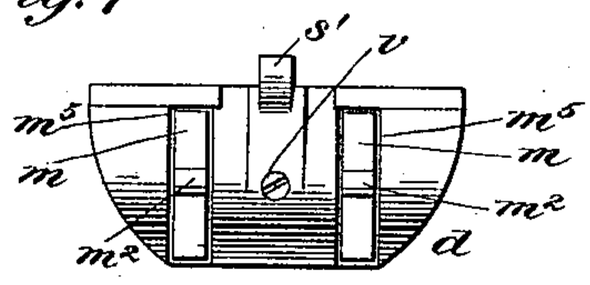


Fig. 8

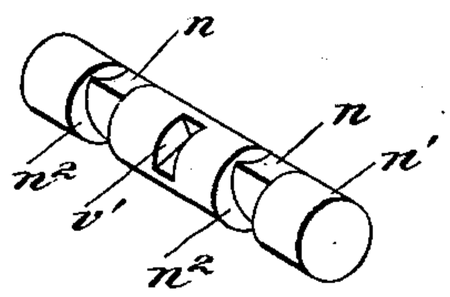


Fig. 9

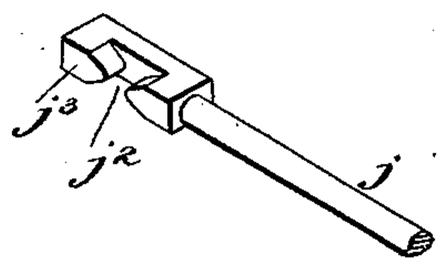


Fig. 10

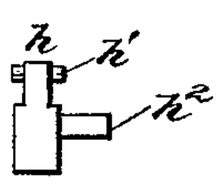
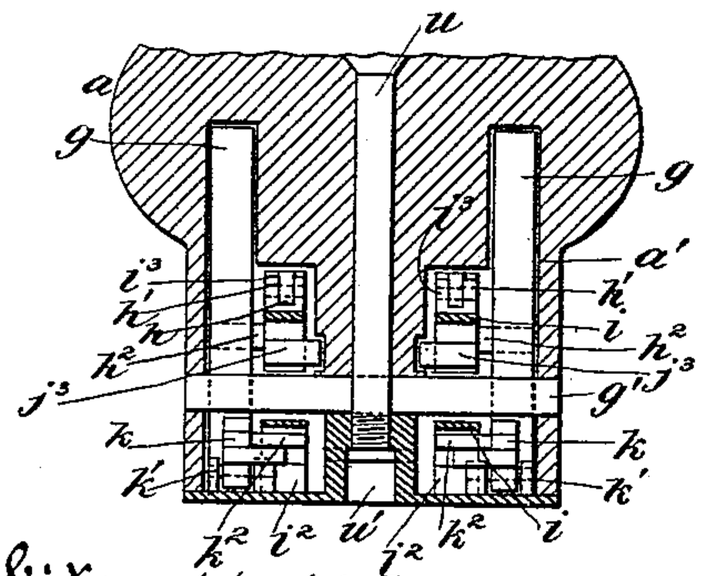


Fig. 11



Witnesses

J. F. Coleman

E. A. Finnell

Fig. 12

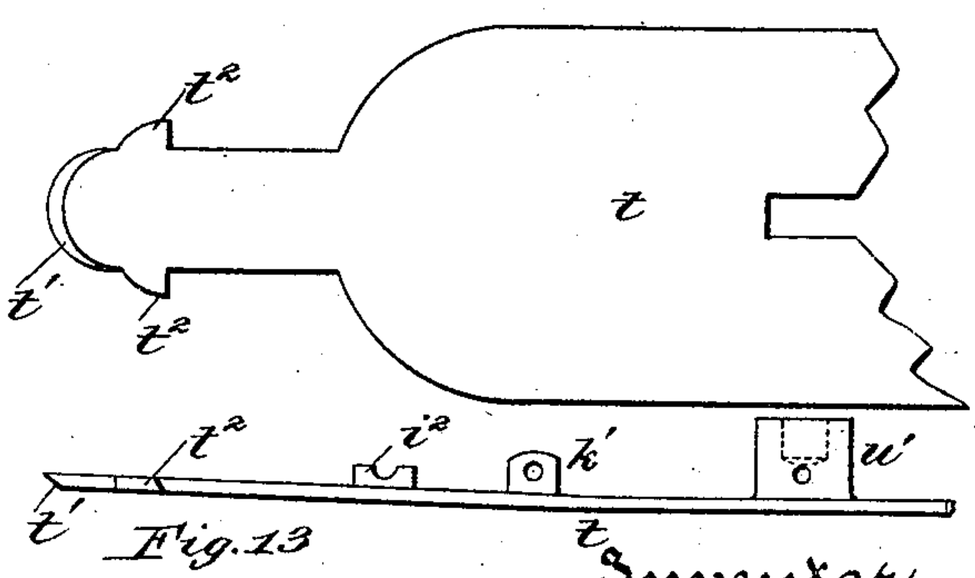


Fig. 13

Inventor

George D. Potter

by Wm. F. Finnell

Attys.

UNITED STATES PATENT OFFICE.

GEORGE D. POTTER, OF WALLACE, IDAHO.

REBOUND AND EJECTING MECHANISM FOR BREAKDOWN GUNS.

SPECIFICATION forming part of Letters Patent No. 542,494, dated July 9, 1895.

Application filed February 9, 1895. Serial No. 537,827. (No model.)

To all whom it may concern:

Be it known that I, GEORGE D. POTTER, a citizen of the United States, residing at Wallace, in the county of Shoshone and State of Idaho, have invented a certain new and useful Improvement in Breakdown Firearms, of which the following is a full, clear, and exact description.

This invention relates more especially to that class of breech-loading shotguns known as "breakdown" hammerless guns, and one object of the invention is to provide for the automatic cocking of the hammers by dropping the barrels.

Another object is to provide a mechanism for automatically ejecting the fired shells of the cartridges from either or both of the barrels that may have been fired; and still another object is to provide for a slight retraction of the hammers from the shells after firing and before the gun is fully cocked by dropping the barrels.

The invention comprises a swinging curved lever actuated by the fore-end, which acts upon a cocking-rod extending from the hinge-joint to the hammer, and which in turn acts upon said hammer through a link attached to said hammer and to the end of the mainspring. The said lever is swung backward by the action of the fore-end as the barrels are depressed and forces said cocking-rod backward through its channel in the body of the frame, and said rod is connected with a stirrup which is attached at its upper end to the mainspring and midway of its length is pivoted to the hammer, so that said rod tips and depresses said stirrup on its swinging fulcrums with a toggle motion and simultaneously cocks the hammer and compresses the mainspring.

The ejector mechanism comprises a spring-actuated ejector-hammer pivoted in the fore-end, and operating in connection with the extractor-stem and conjointly with the cocking mechanism, whereby when the barrels are depressed after firing the said ejector-hammer is caused to strike the end of said extractor-stem and suddenly expel the shell of the fired cartridge from the chamber of the barrel. As will appear presently, the mechanism serves at all times partially to extract the shells when the barrels are dropped, independently of the ejector mechanism, which acts only after the gun has been fired.

Having thus stated the principle of my invention, 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 breech-loading hammerless ejector shotgun comprising my invention with the parts in position after firing and before the barrels are dropped. Fig. 2 is a similar view to Fig. 1 with the barrels dropped, hammer at full-cock, and extractor projected from the breech. Fig. 3 is a view similar to Fig. 1 with the parts in position to fire, the hammer being cocked. Fig. 4 is a vertical longitudinal section through the center of a portion of the fore-end frame, showing the ejector-hammer and spring in their normal retracted position. Fig. 5 is a similar and projected longitudinal section through the center of the fore-end of the body of the frame, hinge-pin, extractor-post, and barrel-lug. Fig. 6 is a partly-mutilated rear elevation of the fore-end. Fig. 7 is a front elevation of the knuckle or front end of the body of the frame with cocking-levers in position in slots of same. Fig. 8 is a perspective view of the hinge-pin detached. Fig. 9 is a perspective view of rear end of cocking-rod. Fig. 10 is a rear elevation of the right-hand stirrup or link. Fig. 11 is a vertical cross-section through the frame back of hammers. Fig. 12 is an under view of part of the forward portion of trigger-plate, and Fig. 13 is an edge view of same.

It is obvious that Figs. 1, 2, and 11 are not true sectional views, and they are purposely so made in order to bring into sight as many of the parts as possible.

a is a part of the stock; *b*, the standing breech or break-off; *c*, the tang; *d*, the body

of frame; *e*, the barrel, and *f* a portion of the fore-end, all as usual, excepting as hereinafter described.

The parts being duplicated in a double-barrel gun, the following description of the mechanism of the right-hand barrel will be understood as applying to both.

Within a recess *a'*, in the rear of the standing breech *b* of the gun, is pivoted the hammer *g*, which has pivoted to it and carries with it the stirrup *h*, which is attached also to the mainspring *i*. The mainspring has its lower forward end *i'* stepped in a block i^2 on the trigger-plate presently described. A cocking-rod *j* passes through an oblique channel *j'* in the body *d*, and extends from the knuckle at the front end of body *d* to and connecting with the stirrup *h*. The stirrup *h* is hung by a pivot *h'* at its upper end in the forked and curved end i^3, Fig. 11, of the mainspring *i* in a manner similar to that employed in ordinary gun-locks, and has a laterally-extending pin h^2 near its middle, which enters a hole in the trunk of the hammer *g*. The lower end of said stirrup *h*, which is of cylindrical form, passes down through a recess j^2 in the side of the squared end j^3 of the cocking-rod *j*.

It will be observed that the upper end of the stirrup *h* is held by the mainspring in a nearly-constant position longitudinally of the gun, but is free to rise and fall with the mainspring; also that its other fulcrum h^2 revolves with the hammer on the center *g'* of the hammer.

The cocking-rod has a rectilinear motion in its channel, and the same being imparted to the lower end of stirrup *h* at h^2 produces in said stirrup a toggle motion in consequence of its swinging fulcrums, by which the hammer is forced back to full-cock and the mainspring is compressed. A sear *k*, pivoted to a stand *k'* on the trigger-plate *l*, engages with the bents of the hammer, as usual, and also engages and supports on a laterally-extending stud k^2 the rear end of the mainspring.

m is a semicircular cocking-lever having a cylindrical head *m'*, journaled in a shallow concave bearing *n* on the upper side of a hinge-pin *n'*. This cocking-lever has on its forward side, about midway of its length, a triangular projection m^2, with a notch m^3 on its upper side, and said lever *m* swings in a groove m^5 in the front end of body *d* and a groove n^2 in the hinge-pin *n'*. The combined bearing formed by the concave depressions *n* in the top side of hinge-pin *n'* and the bearing in the end of the body *d*, amounting to more than a half-circle, serves to hold the lever *m* in position to be swung back and forth. A vertical slot *f'* in the rear end of the fore-end *f*, the upper boundary of which slot being a right line, which, if extended, would be produced in the center of the head *m'* of the lever *m*, receives, when the fore-end is attached, the projection m^2 on the front side of the lever *m*, and the upper surface of said projection m^2 is also on a line projected from the center of the head *m'* parallel with the slot *f'*, as above. The lower end m^4 of the lever *m* swings under the hinge-pin *n'* and bears against the end of cocking-rod *j*.

When the barrels are depressed in the act of opening the gun, the fore-end at *f'*, bearing down on the projection m^2 with a rotary and inclined-plane motion, causes said lever to swing downward and backward, and its lower end m^4, thereby coming in contact with the end of the cocking-rod *j*, forces the latter back against the link *h* and hammer *g*, thereby cocking the said hammer and compressing the mainspring. Owing to the bearing *n* of said lever being eccentric to the axis on which the barrels turn the projection m^2 of said lever is withdrawn rearwardly as the lever swings back, thereby releasing the ejector-hammer, as hereinafter more fully explained.

An ejector-hammer *o* (shown in detail, Fig. 4) is pivoted upon the pin *o'* in the fore-end *f* slightly forward of the rear end of said fore-end and above the center of same, presenting its lower laterally-extended end o^2 in front of the slot *f'*. The upper end of said hammer in its normal position lies immediately under the forward end of the extractor-stem *p*, which is in a recess in the under side of the barrels *e*. The end o^2 constitutes a hook or trip which projects rearwardly and downwardly from the pivot *o'* of said hammer, and the forward lower end of said hammer has a flat surface o^4, Fig. 6. A forward projection o^5 on said hammer terminates in a rounded shoulder o^6.

A spring *r* attached to the fore-end has its free end in contact with the flattened lower end o^4 of the ejector-hammer, under the pivot *o'*, and normally tends to retract and hold retracted the said ejector-hammer when the gun is closed, and when the barrels are dropped the projection or rounded shoulder o^6 of said ejector-hammer is forced downward upon said spring and putting it under tension causes said spring to act forcibly upon the said hammer to revolve it backwardly against the extractor-stem, when its trip is released from the projection m^2 of the lever *m*.

It will be apparent that when the curved lever *m* is thrown forward and upward by the fall of the hammer on the rod *j* the projection m^2 on said lever will swing under and into contact with the trip o^2 of the ejector-hammer *o*.

An extractor-post *s*, of the usual type used in breech-loading shotguns, with the exception that it has a cylindrical head *s'* for a purpose which will presently appear, projects upward from the knuckle of the body *d* into a recess in the under side of the barrels, where it connects with the stem *p* of the extractor *p'*. The extractor *p'* and its stem *p* are split vertically through the entire length of the stem, as is usual in ejector-guns. Near the forward end of the stem *p* a recess p^2 is formed on the inner side of each half of such ejector-stem, thereby forming a mortise when the two halves are brought together, into which mor-

tise the cylindrical head s' of the extractor-post s extends. This mortise is slightly longer than the diameter of said head, thereby admitting of play between the extractor-post and stem backward and forward.

Starting with the gun in position after firing—that is, with the hammer down but slightly retracted, the cocking-rod thrown forward, the cocking-lever m thrown forward with the notch m^2 in the projection m' in connection with the trip o^2 of ejector-hammer o, and the said ejector-hammer o and its spring r in their normal or rebound position, as all of said parts appear in full lines in Fig. 1—the operation is as follows: When the barrels are depressed, the slot f' in the fore-end f, acting upon the projection m' of the lever m with a rotary and inclined plane motion, swings said lever m downward and backward, and the curved end m^4 of said lever, bearing against the end of the cocking-rod j, forces the latter backward through its channel in the body d, and the rear end j^3 of said rod, being in engagement with the lower end of the stirrup h, swings the lower end of said stirrup backward on its fulcrum h' at the end of the mainspring i, and the hammer g, by virtue of the pivotal connection therewith of said stirrup at a point between the said fulcrum h' and the lower end of said stirrup, which is connected with the end j^3 of the cocking-rod j, is carried backward until it is caught and held by the engagement of the sear k in the full-bent of said hammer; and by the same movement of said parts the stirrup h is carried downward, thereby compressing the mainspring i.

Concurrently with the above-described movements the projection m' is withdrawn gradually through the slot f' in the fore-end, and its notch m^3, acting upon the trip o^2 of the ejector-hammer o, raises said trip out of said notch, thereby depressing the forward projection o^6 and through it the spring r until the projection m' of the lever m comes flush with the inside of the fore-end, when the trip is released and the hammer, impelled by the spring r, flies upward and backward, striking the end of the extractor-stem p and ejecting the partly-extracted shell. The momentum of the hammer carries it back of its normal position, and as it passes that position the extreme end of the spring r strikes against the flat lower end of the hammer o, and said spring is thereby arrested. As soon as the momentum of said hammer is expended by its blow on the extractor-stem p, the pressure of the end of spring r on the flat end of hammer o causes the latter to rebound to its normal position and there holds it until again acted upon by the projection m', as shown in Fig. 3.

In the retracted or rebound position of the ejector-hammer, which I call its "normal" position, it is out of the way of the extractor-stem p, which is moved backwardly and forwardly by the post s on the end of the body d in the usual manner. It will be observed, however, that in the positive movement here referred to the post s bears against the rear shoulder of the mortise p^2 in the extractor-stem as the barrels are depressed, leaving a space between the forward side of post and the forward shoulder of mortise. When the ejector-hammer strikes the end of stem p, as above described, the stem is driven backward the length of this space or until the forward side of post s and the forward shoulder of mortise p^2 are in contact.

The position of the parts after dropping the barrels and with the same depressed is shown in Fig. 2, in which the hammer g is at full-cock, the cocking-rod j is at the rear limit of its travel, where it is held in contact with the stirrup h, and until the gun is fired, and the cocking-lever m is swung back with its front projection m' flush with the inside of fore-end, in which position it also remains when the gun is closed (see Fig. 3) and until the hammer falls and forces the rod j and lever m forward. The retention of the lever m in this position is accomplished by causing its end m^4 to bind slightly on the under side of the hinge-pin n' when said lever is swung back to its extreme limit.

It will be apparent now, by reference to Figs. 1, 2, and 3, that, until the gun is fired and the hammer falls forcing the rod j and through it the lever m forward, the ejector mechanism will not be acted upon when the gun is opened and closed, and therefore that only the partial and positive extraction of the shell will occur. This extraction, as above explained, is accomplished by the extractor-post in the usual manner, except that the stem p, instead of being retracted by the standing breech alone, acting upon the extractor p', is primarily and principally retracted by the post s, and thereafter the retraction is completed by the action of the standing breech upon closing the gun.

The gun having been cocked and closed, as in Fig. 3, the operation of the several parts upon firing the gun is as follows: It will be observed that, owing to the constant tension of the mainspring i upon the centers h' and h^2 of the stirrup h, and the center g' of hammer g, the said centers tend to align themselves between the end i^3 of the mainspring and the other extreme center g', and that any shifting of the end i^3 of the spring i will result in a change of inclination of the line of these centers; also, that the position of the end i^3 of the spring i depends upon the inclination of the base of support of the lower limb of said spring i, such base of support being the stud k^2 of the sear, and that the angle of inclination of said base of support is altered when the trigger is pulled and the rear end of the sear k, upon the stud k^2 of which the spring rests, is thereby raised, and the elevation of the rear end of spring so effected throws forward the end i^3 of the spring i. Now, as the free center h^2 of the toggle formed by the aforesaid centers is pivoted to the

trunk of the hammer g, it is evident that the alignment of the center h^2 with the end i^3 of the spring i when thrown forward will result in swinging the hammer forward, as shown in dotted lines, Fig. 1. Upon releasing the trigger the sear k and spring i fall back to the positions shown in full lines, Fig. 1, and the centers h', h^2, and g' in aligning themselves with the changed position of the end i^3 of the spring i cause the hammer g to swing back into the position shown in full lines, Fig. 1, and its striker g'' to be withdrawn from the primer in the chamber of the barrel e. This operation may be understood best by confining the attention to the movements indicated by full and dotted lines, Fig. 1, of the hammer g, spring i, link h, and sear k and by observing that the slight retraction of the hammer is effected by the alteration of the angle of inclination of the base of support upon which the spring i rests when the trigger is pulled, thereby elevating the rear end of the sear k. As a matter of fact, the hammer would be carried forward to contact with the primer by the momentum of its fall independently of the position of the end i^3 of the spring i; but the operation of retraction above described takes place after the momentum of the hammer has been expended on the primer, and the change of position of the end i^3 of the spring i and accompanying shifting of the alignment of centers h' and h^2, caused by the pull and release of the trigger, is designed merely to compensate the loss of effective thrust of the cocking-rod by the retraction or falling away of the hammer g. Upon pulling the trigger (not shown) the rear end of the sear k is raised and its front end is disengaged from the bent of the hammer g, thereby releasing the said hammer; and the main spring i, resting upon the lateral projection k^3 of the sear k, is also raised and its forward upper end is thrown slightly forward of the vertical center of the hammer-pin g'. As the hammer falls this position of the mainspring establishes a new and forwardly inclined alignment of the centers h' and h^2 with center g', tending to carry the hammer correspondingly forward, thereby bringing the striker in contact with the primer of the cartridge when the several centers h', h^2, and g' align in a dead-center, as shown in dotted lines, Fig. 1. Upon releasing the trigger the sear, mainspring, and hammer fall back to the position shown in full lines, Fig. 1, out of contact with the primer and with the hammer held by the engagement of the sear k in the half-bent of the hammer. It will be observed in this connection that the mainspring serves also as a sear-spring, by which the sear is forced into the bent and held until the trigger is pulled. This is accomplished by making the lower limb of the mainspring somewhat longer than its upper limb, and the degree of pressure upon the sear may be made greater or less according to the length of the lower limb.

I am aware that rebounding hammers are in use upon certain hammerless guns; but so far as I know the rebound of the hammer is obtained at the sacrifice of a portion of the available throw of the cocking mechanism. The construction of my gun is especially designed to avoid this loss of power, and it will be seen by reference to the illustrations before and after firing that the cocking-rod remains in constant contact with the stirrup h. By this construction I conserve the full effective scope of the cocking-rod for the purpose of cocking the hammer. Another advantage of this construction is that the hammers may be let down (by pulling the triggers with the barrels depressed and allowing them to close with the sears held out of engagement, as in many hammerless guns) without danger, owing to the retraction of the strikers from the primers of the cartridges. Letting the hammers down in this manner will not injuriously affect the ejector mechanism, (something that cannot be claimed for any other ejector-gun that I know of,) but the gun will eject automatically when opened after so letting down the hammers.

The form of trigger-plate t illustrated in Figs. 1, 2, 3, 12, and 13 effects a dovetail fastening with the frame and further assists in conveniently assembling the parts in the frame. At its forward end a beveled lip t' fits into a corresponding notch in the under side of the body d. (See Figs. 1, 2, and 3.) Two wings t^2 t^2 project, one from either side, near the forward end, having slightly-beveled shoulders on the rear side, as more fully illustrated in Fig. 13. The whole plate is "let into" the under side of body d and of the stock a. When the lip t' is inserted into its notch and the plate pressed into its recess, the wings hold the end of the plate firmly into connection with the body. The main screw u passing down through the stock into the socket u' on the rear end of the trigger-plate thus secures the frame and stock together.

A screw v, Figs. 5 and 7, enters the front end of the body at the knuckle and bears against a notch v' in the upper forward side of the hinge-pin n'. The object of this screw is to turn the hinge-pin over after the levers m have been placed in the shallow bearings n on the upper side of the hinge-pin and to carry the upper end m' of said levers into the bearings completed by the concavity in the end of the body d. The screw also serves to hold the hinge-pin in position and to take up any wear in the bearings.

I have thus described, as already indicated, the best mode in which I have contemplated applying the principle of my invention; but it is to be understood that the details of construction are susceptible of variation within the claims of invention herein made.

What I claim is—

1. In a breech-loading break-down hammerless gun, the combination with a hammer, a rectilinearly movable cocking-rod, a main

spring, an intermediate and positive connection between said spring and the hammer and rod, and a lever, the said rod and lever cooperating by superficial contact and without positive connection, the said lever being arranged in the frame eccentrically with relation to the hinge-pin, and having its rear and lower end arranged in line with the cocking-rod to force the said cocking-rod rearwardly to cock the hammer, and having a forwardly extended projection in operative connection with the fore-end, whereby said lever is actuated by the dropping of the barrels to cock the hammer and thereafter permit the closing of the gun without disturbing the lever, cocking-rod or hammer, substantially as described.

2. In a breech-loading break-down hammerless gun, the combination with a hammer, a rectilinearly movable cocking-rod, a main spring and a stirrup positively connecting the hammer, spring and rod, and a lever, the said rod and lever operating by superficial contact and without positive connection, the said lever being arranged in the frame eccentrically with relation to the hinge-pin, and having its rear and lower end arranged in line with the cocking-rod to force said cocking-rod rearwardly to cock the hammer, and having a forwardly extended projection in operative connection with the fore-end, whereby said lever is actuated by the dropping of the barrels to cock the hammer and thereafter permit the closing of the gun without disturbing the lever, cocking-rod or hammer, substantially as described.

3. In a breech-loading break-down hammerless gun, the combination of an ejector mechanism comprising an ejector hammer pivoted in the fore-end and having a trip, with a hammer, a rectilinearly movable cocking-rod, a main spring intermediately and positively connecting the hammer and rod, and a lever, the said rod and lever cooperating by superficial contact and without positive connection, the said lever being arranged in the frame eccentrically with relation to the hinge-pin, and having its rear and lower end arranged in line with the cocking-rod to force the said cocking-rod rearwardly to cock the hammer, and having a forwardly extended projection in operative connection with said trip, whereby said lever is actuated by the dropping of the barrels to cock the hammer and thereafter permit the closing of the gun without disturbing the lever, cocking-rod or hammer, substantially as described.

4. In a breech-loading break-down hammerless gun, the combination of an ejector mechanism comprising an ejector hammer pivoted in the fore-end and having a trip, with a hammer, a rectilinearly movable cocking-rod, a main spring, a stirrup positively connecting the hammer, spring and rod, and a lever, the said rod and lever operating by superficial contact and without positive connection, the said lever being arranged in the frame eccentrically with relation to the hinge-pin, and having its rear and lower end arranged in line with the cocking-rod to force said cocking-rod rearwardly to cock the hammer and having a forwardly extended projection in operative connection with the fore-end, whereby said lever is actuated by the dropping of the barrels to cock the hammer and thereafter permit the closing of the gun without disturbing the lever, cocking-rod or hammer, substantially as described.

5. In a breech-loading break-down hammerless gun, the combination of a hammer, a rectilinearly movable cocking-rod, a main-spring, a stirrup interposed between the main spring, hammer and cocking-rod and holding said rod in operative connection with the said hammer at all times, and a lever arranged in the front end of the body of the gun and provided with a rearwardly extended end adapted to abut against the cocking-rod and move the same rearwardly to cock the hammer when the barrels are dropped, substantially as described.

6. In a breech-loading break-down hammerless gun, the combination of a hammer, a rectilinearly movable cocking-rod, a main spring, a stirrup connected at different points in its length with the hammer, the rod and the said spring, and a lever arranged in the body of the gun and provided with a rearwardly projecting end adapted to abut against the cocking-rod and move the same rearwardly to cock the hammer when the barrels are dropped, substantially as described.

7. In a breech-loading break-down hammerless gun, the combination of a hammer, a main spring a cocking-rod, and a cocking-rod operating lever with a stirrup interposed between and connecting the said hammer, spring and rod to constitute a toggle by which said main spring is compressed and the hammer cocked as the cocking-rod is acted upon by the lever upon the dropping of the barrels, substantially as described.

8. In a breech-loading break-down hammerless gun, the combination of a main-spring having its lower limb fulcrumed at its forward end, a sear, a support or rest for such main-spring fixed to and moving with said sear and arranged in the rear of the hammer's pivot, a hammer, and a stirrup pivotally connecting the upper limb of said spring and the hammer, the sear, upon the pulling of the trigger, being raised and the spring support on the sear acting upon and tilting the main-spring to throw the free end of such spring forward and effect a forward alignment of the centers of connection of the stirrup, hammer and spring, upon the fall of the hammer, the spring after the fall of the hammer and by the release of the trigger and sear then falling back and effecting a re-alignment of the centers and a rebound of the hammer, substantially as described.

9. In a breech-loading break-down hammerless gun, an extractor, an ejector hammer pivoted in the fore-end, a spring acting there-

upon to hold it in retracted position, and a cocking lever cooperating with said ejector hammer after the gun has been fired selectively to trip and impel it against the extractor, substantially as described.

10. In a breech-loading break-down hammerless gun, a curved cocking lever having its upper end journaled in a bearing between the top of the hinge-pin and the end of the body of the frame and eccentrically with relation to the axis upon which the barrel turns, and having a rotary and sliding motion in connection with the fore-end, and provided with a forward projection, combined with an ejector hammer with which said projection engages to trip said hammer, substantially as described.

11. In a breech-loading break-down hammerless gun, the combination with the hammer, a rectilinearly movable cocking-rod, a cocking-rod operating lever having a forwardly projecting portion, an ejector hammer pivoted in the fore-end of the gun and having a rearwardly projecting trip cooperating with the forwardly projecting portion of the cocking-rod operating lever, and a spring having one end fixed and the other movable against and with the ejector hammer, substantially as described.

12. In a breech-loading break-down hammerless gun, the combination of a hammer, a main spring and a sear, with a rectilinearly movable cocking-rod; means to move it rearwardly, and a stirrup connected with the rear end of said cocking-rod at one of its ends, pivoted to the hammer above its point of connection with the cocking-rod, and also pivoted to one end of the main spring at a point above its pivotal connection with the hammer, substantially as and for the purpose described.

13. In a breech-loading break-down hammerless gun, the combination with a hammer a cocking-rod and articulated connections between the said hammer and cocking-rod, of a cocking-rod operating lever journaled within the frame and having a rearwardly projecting end adapted to cooperate with the cocking-rod and having a forward projection extending into the fore-end, and an ejector hammer provided with a trip adapted to cooperate with the forward projection of the said operating lever, substantially as and for the purpose described.

14. In a breech-loading break-down hammerless gun, the combination with the hammer, a rectilinearly movable cocking-rod and means to connect the same, of a hinge-pin having a cavity in its upper side, a cocking-rod operating lever provided with a head seated in said cavity and rotatable therein, and also provided with a rearwardly projecting end adapted to cooperate with the cocking-rod, and also provided with a forward projection, and an ejector hammer pivoted in the fore-end, a trip extending from said hammer into cooperative relation with the forward projection of the cocking-rod operating lever, and a spring bearing against the said ejector hammer, substantially as described.

15. In a breech-loading break-down hammerless gun, the combination with a hammer, a cocking-rod, and operating connections between the two, of a cocking-rod operating lever, a fixed extractor post, an extractor mechanism provided with a mortise of greater length than the diameter of the post, an ejector hammer, and a lever journaled within the body of the gun and interposed between the cocking-rod and the said ejector hammer and cooperating with both upon the dropping and closing of the barrel, substantially as described.

16. The combination with a hinge-pin, of a cocking-rod operating lever journaled thereupon and a set-screw seated in the fore-end of the body and bearing against a notch in the hinge-pin, substantially as and for the purpose described.

In testimony whereof I have hereunto set my hand this 25th day of January, A. D. 1895.

GEORGE D. POTTER.

Witnesses:
CHAS. M. WHITLAW,
A. G. KERNS.