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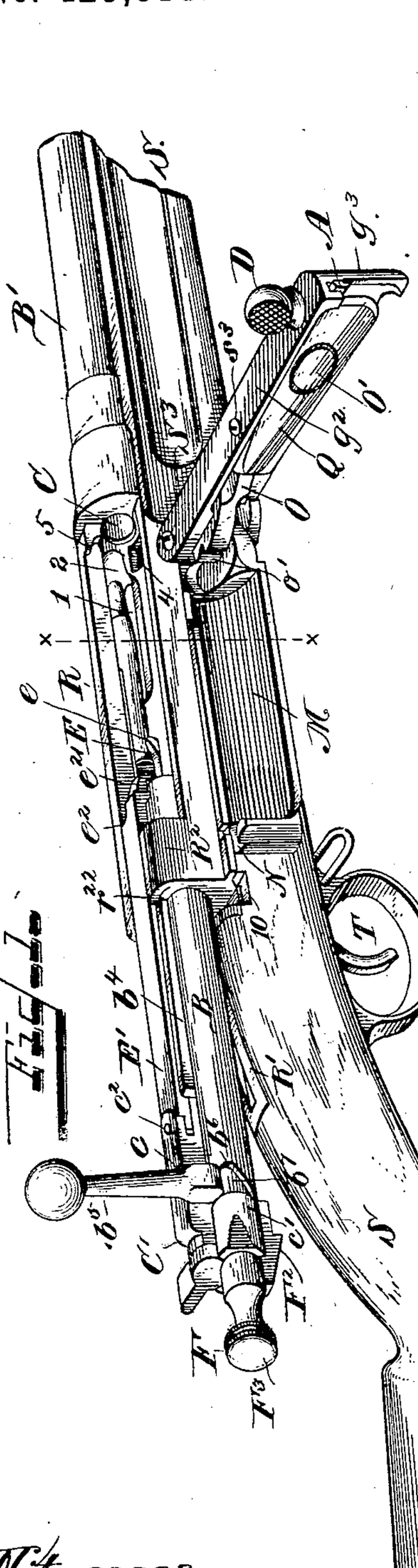
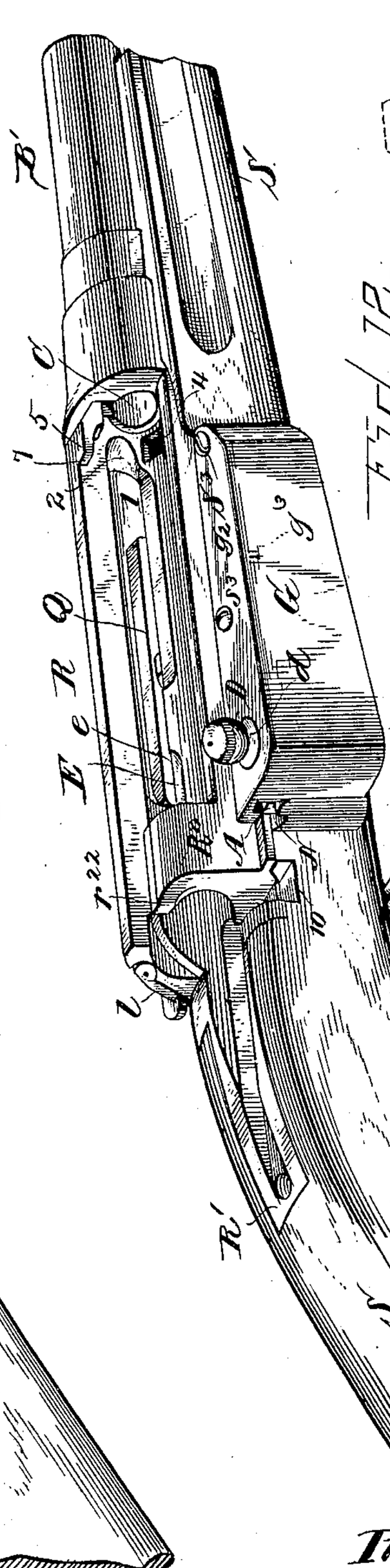
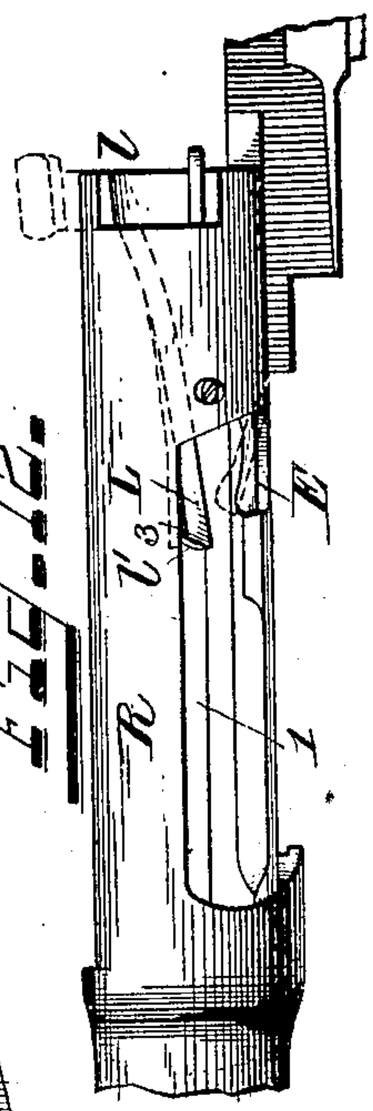
O. H. J. KRAG & E. JORGENSEN.

BREECH LOADING GUN.

No. 429,811. Patented June 10, 1890.







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per Henry Orth Attorney.

(No Model.) 5 Sheets—Sheet 2.

O. H. J. KRAG & E. JÓRGENSEN.

BREECH LOADING GUN.

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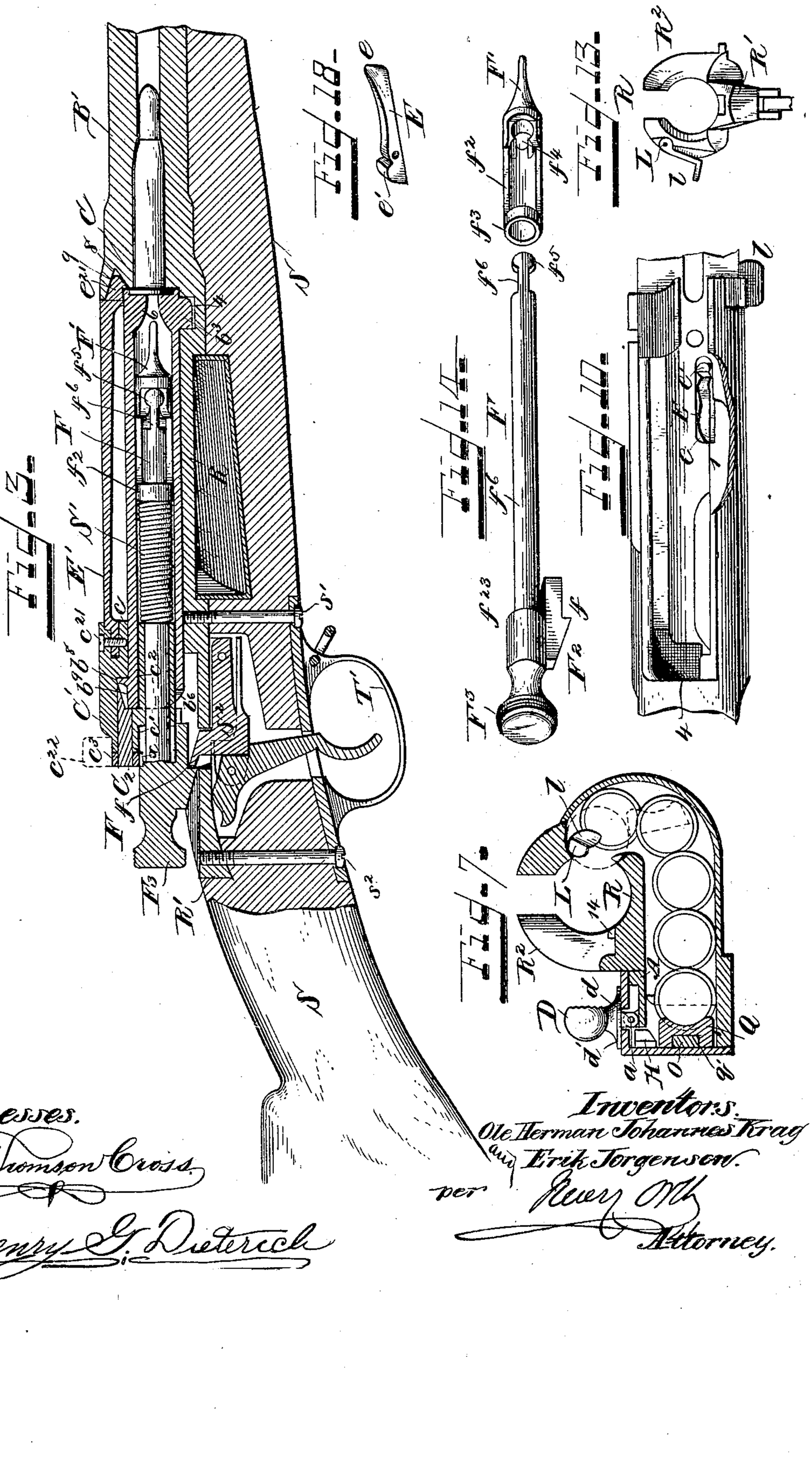

Witnesses.
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(No Model.) 5 Sheets—Sheet 3.

O. H. J. KRAG & E. JORGENSEN.

BREECH LOADING GUN.

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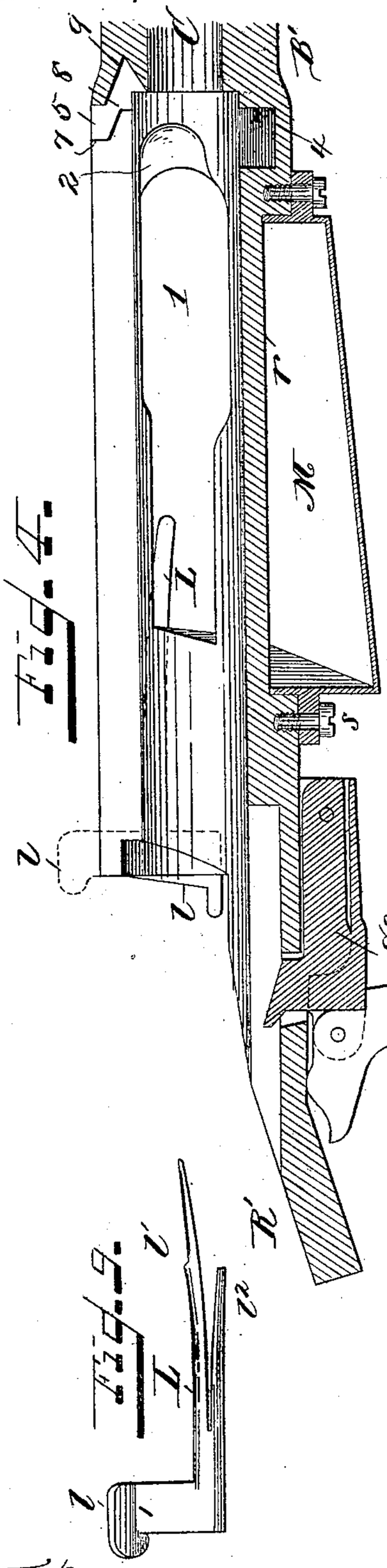

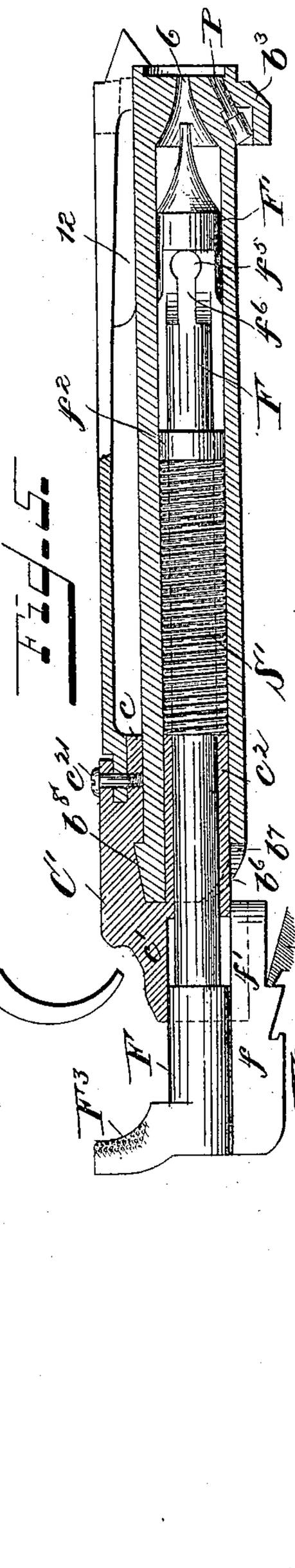

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(No Model.) 5 Sheets—Sheet 4.

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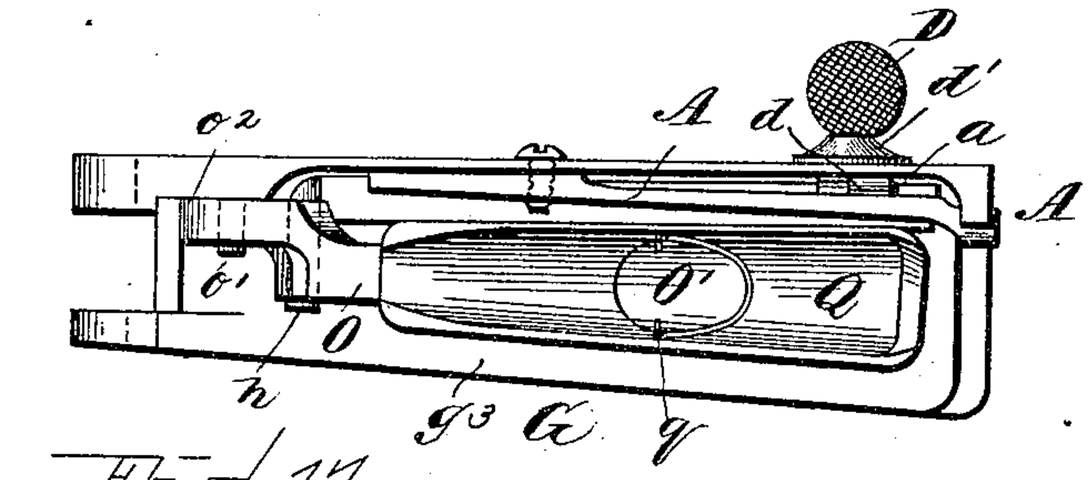

Fig. 7.

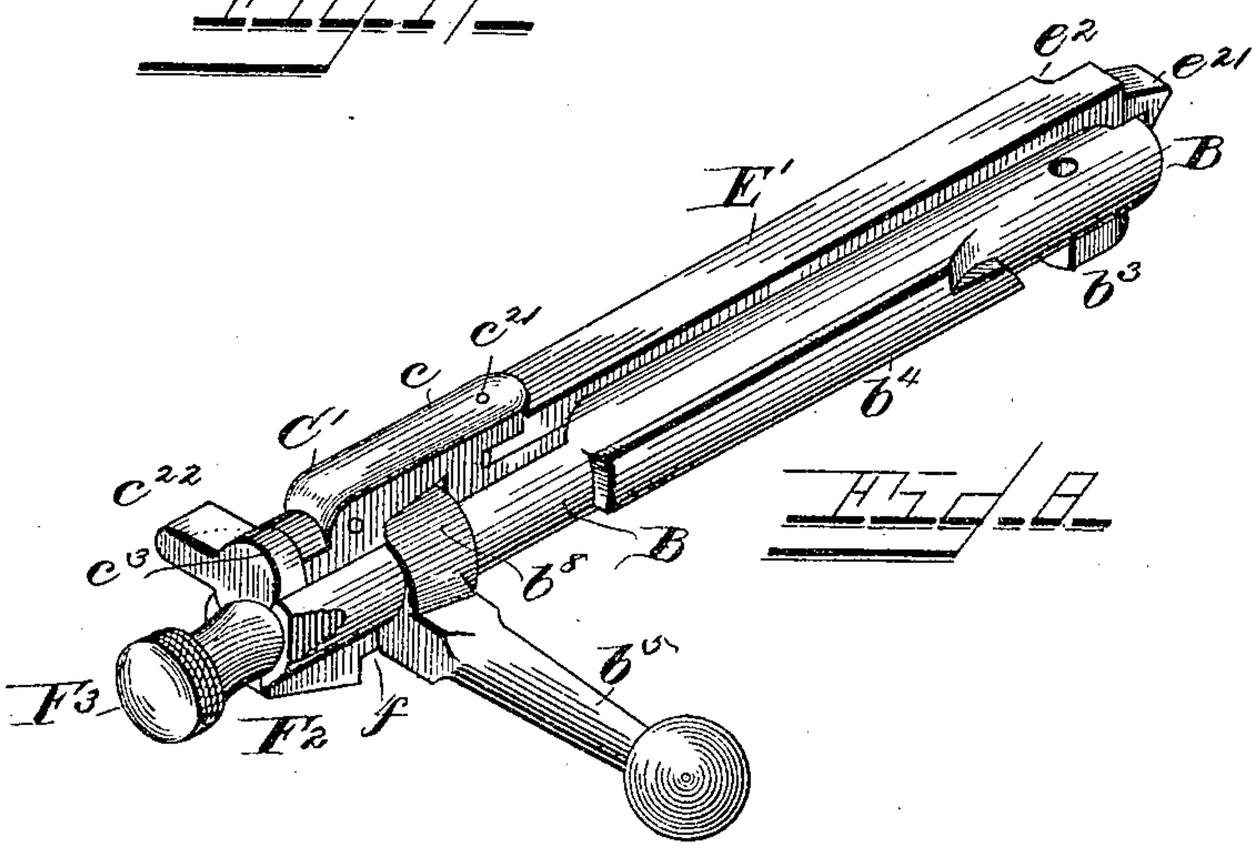

Fig. 8.

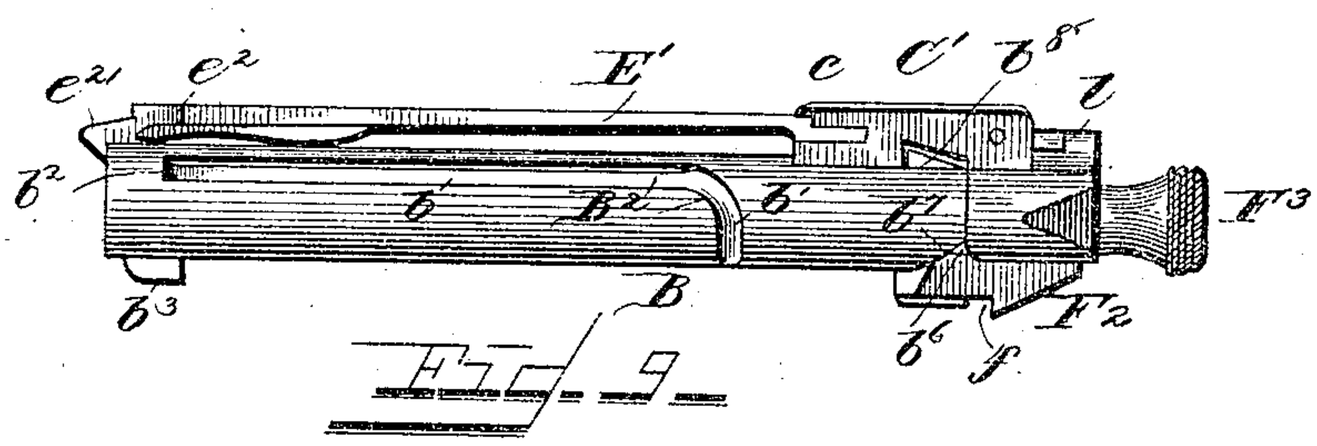

Fig. 9.

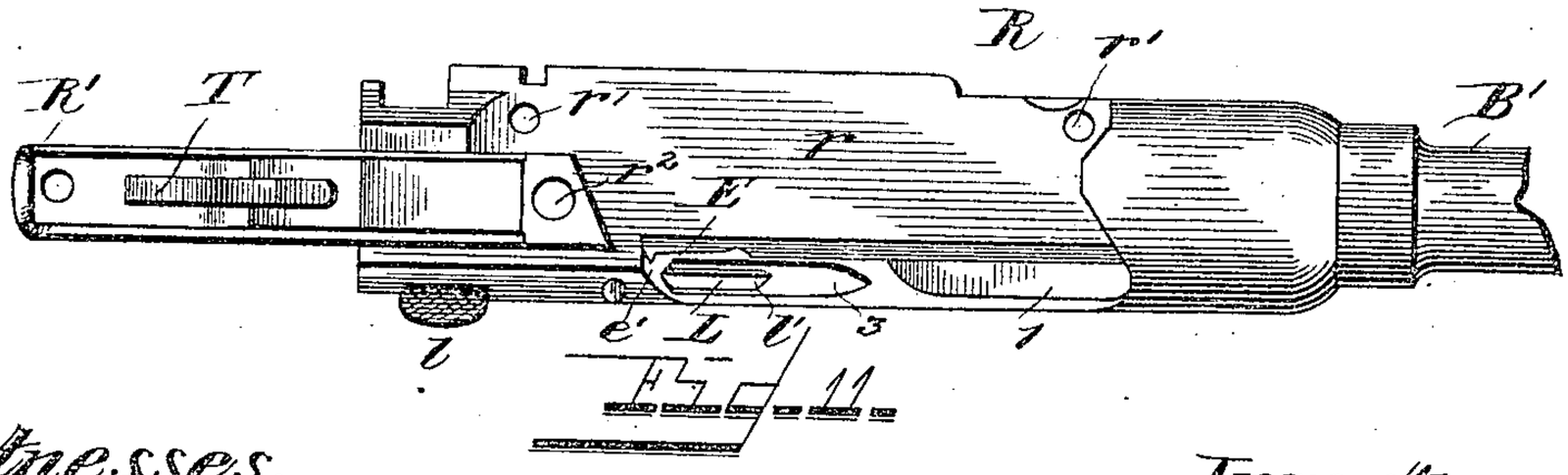

Fig. 11.

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(No Model.) 5 Sheets—Sheet 5.

O. H. J. KRAG & E. JÓRGENSEN.

BREECH LOADING GUN.

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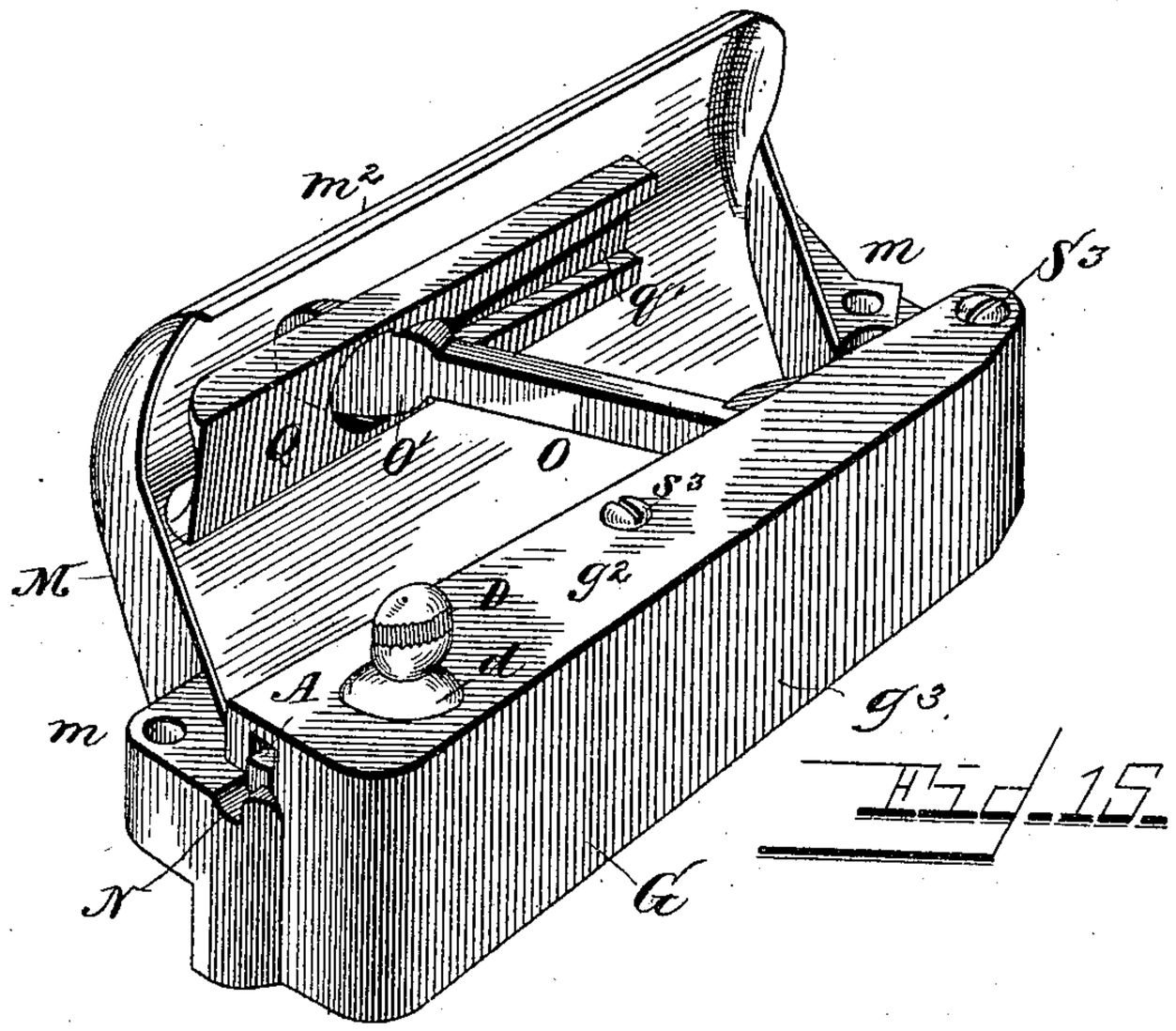

Fig. 15.

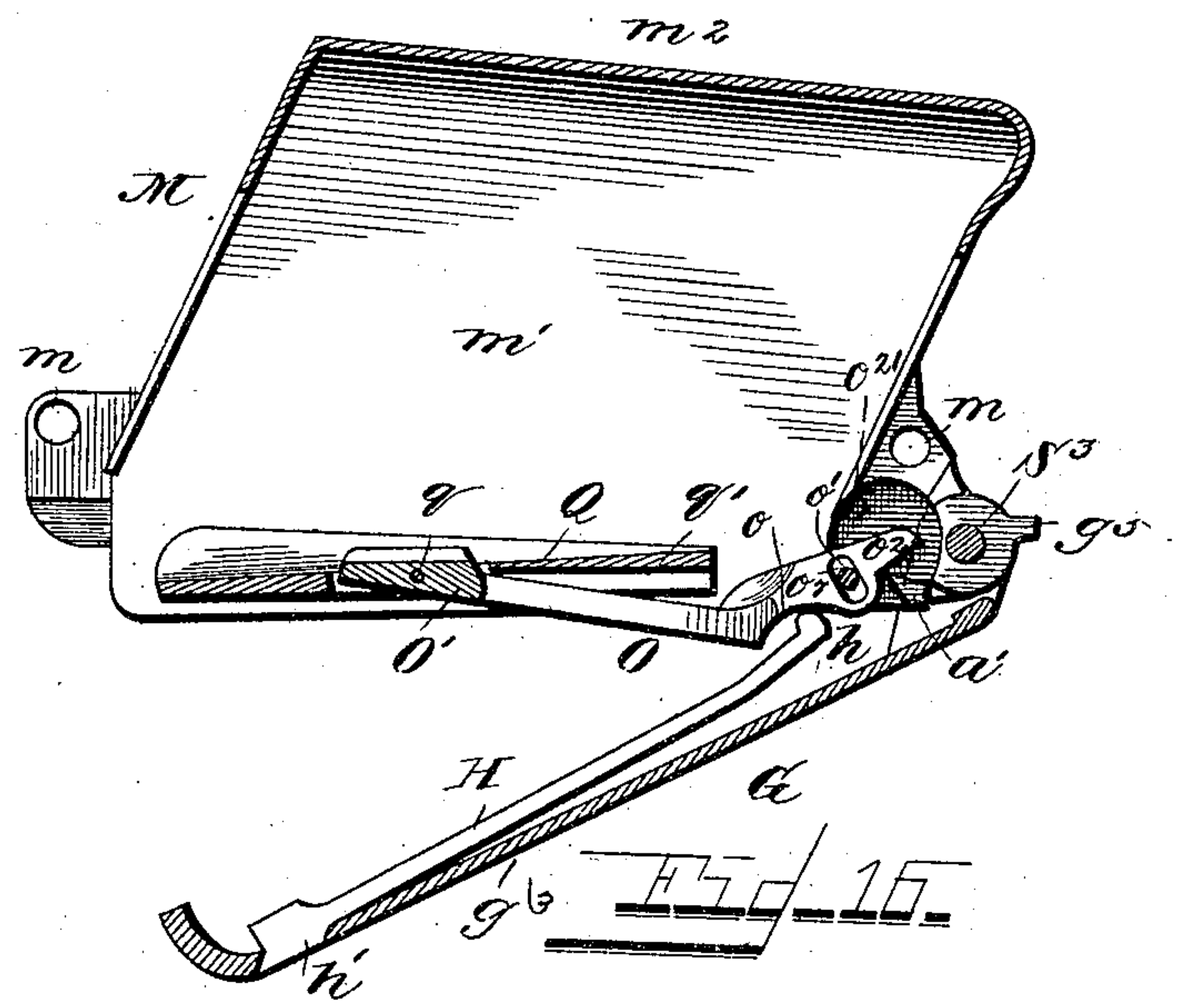

Fig. 16.

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UNITED STATES PATENT OFFICE.

OLE HERMAN JOHANNES KRAG AND ERIK JÖRGENSEN, OF KONGSBERG, NORWAY.

BREECH-LOADING GUN.

SPECIFICATION forming part of Letters Patent No. 429,811, dated June 10, 1890.

Application filed November 9, 1889. Serial No. 329,797. (No model.)

To all whom it may concern:

Be it known that we, OLE HERMAN JOHANNES KRAG and ERIK JÖRGENSEN, subjects of the King of Norway, residing at Kongsberg, Kingdom of Norway, have invented certain new and useful Improvements in Magazine Fire-Arms; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Referring to the drawings, Figure 1 is an isometric view of a portion of a gun embodying my invention, the magazine-gate being shown fully open and the breech-bolt drawn back. Fig. 2 is a like view, the breech-bolt being removed and the magazine-gate closed. Fig. 3 is a longitudinal axial section of the gun, the breech mechanism being shown in the full-cock position. Fig. 4 is a like view of the breech end of the gun without the breech-bolt and stock. Fig. 5 is a longitudinal axial section of the breech-bolt, showing the firing-pin at full-cock. Fig. 6 is a rear end elevation of the breech-bolt. Fig. 7 is a cross-section of the receiver and magazine, taken on or about on line $x\,x$ of Fig. 1. Fig. 8 is an isometric view, and Fig. 9 a left-hand side elevation, of the breech-bolt and firing-pin. Fig. 10 is a top plan view, Fig. 11 a bottom plan view, Fig. 12 a left-hand side elevation, and Fig. 13 a rear elevation, of the receiver of the gun, a portion of the left-hand wall being broken away in Fig. 10 to better show the shell-ejector lever. Fig. 14 is an isometric view of the parts that constitute the firing pin or bolt. Fig. 15 is an isometric view of the cartridge-magazine detached from the gun. Fig. 16 is a horizontal section thereof, the gate being shown as partly open. Fig. 17 is an inner face view of the magazine-gate. Figs. 18 and 19 are detail views of the ejector-lever and the stop-lever for the magazine, respectively.

The invention relates to repeating breech-loading guns, and has for its object certain improvements whereby the breech mechanism is simplified in its construction and the efficiency of the gun materially enhanced.

The invention consists, essentially, in certain novel features of construction, arrangement, and co-operation of parts of the breech mechanism; also, in the combination, with the receiver, of a magazine and means for feeding the cartridges therefrom to the receiver, substantially as hereinafter described, and as set forth in the claims.

In order that our invention may be fully understood, we will describe the several parts thereof separately and then their co-operation.

Those parts common to all fire-arms of this class comprise the stock S, the barrel B′, the trigger-guard T′, the trigger T, and sear S^2, and these may be of any usual or preferred construction, and are shown in Figs. 1, 2, 3, and 4.

The receiver.—The receiver R, Figs. 1, 2, 3, 4, 7, 10, 12, and 13, forms an integral part of the barrel and is, as in all guns of this class, open at top, the opening being more to the right of the axis of the gun to facilitate the introduction of the cartridges when used as a single loader, and to throw the shells out laterally, so as not to interfere with the marksman. A portion of the under side of the receiver is flat, as shown at r, Fig. 11, and in said under side are formed screw-threaded sockets r' for the screws s, Fig. 4, by means of which the magazine is secured in position, and with a like socket r^2 for the screw s', Fig. 3, by means of which the forward tang of the trigger-guard is secured. At its rear end the receiver has a tang R′, and is secured to the gun-stock S at that point by means of a screw s^2, that also serves to secure the rear tang of the trigger-guard T′.

R^2 is the rear stop-lug, usual in this class of guns, and serves to limit the rearward motion of the breech-bolt and guide the same in its movements. The front and rear faces of the lugs are planes inclining rearwardly from the base of the lug to the upper edge thereof, said faces forming a part of a helical screw-thread.

In the left-hand side of the receiver is formed an opening or longitudinal slot 1 of less width at the rear than at the front end,

and in a recess formed partly in the lower wall of said slot and partly in the rear end of the receiver is pivoted a gravity shell-ejector E. The upwardly-turned forward end *e* of the ejector lies normally flush with the inner face of the receiver, and at its rear end said ejector has a heel or projection *e'*, that projects normally into the receiver.

The forward end of the slot 1 in the receiver merges into a tapering recess 2, and decreases gradually in depth outwardly or forwardly toward the breech-chamber C to guide the bullet end of the cartridge into the said chamber, Figs. 1, 2, and 4.

At its rear end the receiver is recessed and provided with a longitudinal bearing, in which is seated a stop-lever L, that has a thumb-piece *l*, Figs. 2, 4, 10, 11, and 19, said lever being split, as shown in Fig. 19, and is held in its bearing by the pressure exerted by the spring-arms *l' l²*. The longer arm *l'* projects into slot 1 and lies normally in a recess 3, Figs. 11 and 12, formed in the face of the upper wall of slot 1. When the lever is turned into the position shown in dotted lines in Fig. 4, the arm *l'* will move into the slot 1 and present its flat face thereto.

At the bottom of the receiver at its front end is formed a recess 4 for the locking lug or shoulder b^3 on the breech-bolt, and at the front end of the left-hand wall of said receiver is formed a ledge or projection 5, Figs. 1, 2, and 4, that forms an abutment for a shoulder e^2 at the forward end of the shell-extractor.

In the breech-chamber C is formed a recess 8, the upper wall 9 of which inclines forwardly for the reception of the extractor-hook.

The breech-bolt.—The breech-bolt B, Figs. 1, 3, 5, 8, and 9, is a tube whose front end is closed, and in said closed end is formed an inwardly-flaring axial passage 6 for the firing pin or nipple. At the said forward end the bolt has the locking lug or shoulder b^3, that takes into the recess 4, above referred to, when the bolt is turned into a position for firing The bolt B is also provided with a longitudinal rib b^4, that serves to limit its rotary movement in either direction within the receiver, and at its rear end the bolt has the usual handle b^5. At said rear end is formed a slot or recess b^6, one of the walls of which—namely, that on the right hand formed by the handle—is straight, while the left-hand wall b^7 is curved laterally, Figs. 1 and 8. From the handle b^5 a locking-shoulder b^8 extends about one-third around the bolt, said shoulder tapering rearwardly and having formed therein near the left-hand edge a longitudinal locking notch or recess b^9, Fig. 3.

The shell-extractor.—The shell-extractor E' is connected by a hinge or pivot-joint c^{21} with the forwardly-projecting arm or lug *c* of a carrier C', which consists of a tubular section *c'* c^2. The rear portion *c'* of tubular carrier C' is slotted longitudinally, and is of greater diameter than the breech-bolt, while the front portion c^2 is of less diameter and is fitted tightly within the rear end of said bolt.

The shell-extractor E' has a hook e^{21}, the upper face of which is inclined to fit the recess 8 in the forward end of the receiver R, or more properly in the rear end of the breech-chamber, as hereinbefore referred to, the ledge or projection 5 having a correspondingly-inclined surface on its under side to guide the extractor-hook into said recess and force the same over the rim of the cartridge-shell. By means of the described construction a firm bearing for the front end of said extractor is provided wherein it is securely held against vertical displacement.

The firing-pin.—The firing-pin, Figs. 3, 5, and 14, has at its enlarged rear or handle end the full-cock notch *f;* or said pin may be provided with both a full and a half-cock notch *f f'*, respectively, as shown in Fig. 5.

The firing pin or bolt in all bolt-guns with which we are acquainted is made of a single piece, and it frequently happens that the striking-point is broken off in use or by accident, thus requiring a new pin or bolt to be applied. To avoid this, we make the said pin or bolt of two parts, detachably connected, of which part F' is the striking point or nipple and part F the bolt or pin proper. The striking point or nipple F' has a tubular portion f^2, about one half of which is cut away longigitudinally, leaving a collar or sleeve f^3, against which abuts one end of the spring S', that impels the firing-pin within the breech-bolt B, the other end of said spring abutting against the end of the tubular portion c^2 of the extractor-carrier C', Figs. 3 and 5. At the forward end of the tubular portion of the nipple is formed a socket-bearing f^4 for the head f^5, formed on the attenuated extension f^6 of the firing-pin, whereby both parts are detachably connected. Should the striking point or nipple F' break, the part F' can be readily removed from the part F and another substituted.

The operation of the gun is as follows: Supposing the breech mechanism to be in the position shown in Figs. 3 and 5, with the extractor-hook e^{21} over the rim of the cartridge-shell, the handle b^5 of the breech-bolt lying in the recess 10, Figs. 1 and 2, behind lug R^2, and the lug b^3 in recess 4, thus locking the breech-bolt securely in position, as the firing-pin F F' is released by pulling on the trigger T and moves forward under the stress of its spring S' the arm F^2, in which is formed the full-cock notch *f*, lying in the slot in the tubular portion *c'* of the extractor-carrier C', enters the recess b^6 along the straight face thereof, the striking point or nipple exploding the charge. If the breech-bolt B is now turned with its handle b^5 in a vertical position, or approximately so, the inclined face or wall b^7 of the recess b^6 in the bolt B will operate on the forward end of the arm F^2 and move the firing-pin F back against the stress of its spring S', while the recess b^6 is moved

out of register with the said arm F^2, so that the firing-pin will be locked in position for firing. The rear face of the stop-lug R^2 of the receiver being curved rearwardly, as hereinbefore referred to, and as shown at r^{22}, Figs. 1 and 2, a slight rearward movement will be imparted to the breech-bolt B by this partial rotation, so that the extractor E′ will start or draw the empty cartridge-shell partly out of the breech-chamber C and facilitate the rearward motion of the breech-bolt. As the breech-bolt is turned, as described, the lug b^3, as well as the handle b^5, will move out of their locking-notches, so as to completely unlock the breech-bolt, as will be readily understood. The breech-bolt may now be pulled back, when the empty shell held by the extractor-hook will encounter the projecting upturned end *e* of the shell-ejector E, by which it is thrown out of the receiver. As hereinbefore stated, the heel *e′* of the shell-ejector projects normally into the receiver, so that as the breech-bolt B moves in and out of the receiver it (the bolt) will bear upon the heel *e′* of the ejector, thereby lifting the forward end *e* thereof, so that said end *e* will project into said receiver. Inasmuch as the to-and-fro movements of the bolt B, which fits snugly into the receiver, would be impeded by the projecting end *e* of the ejector E, said bolt is provided with a right-angled groove B^2, Fig. 9, the longitudinal branch *b* of which merges at its rear end into a peripheral branch *b′*, that extends partly around the said breech-bolt. The forward end b^2 of the longitudinal branch *b* of groove B^2 decreases gradually in depth, so as to allow the end *e* of the ejector to freely slide into and out of it. When the breech-bolt B is in the position just described, and as shown in Fig. I, the heel *e′* of the ejector E lies in the shallow outer end *b′* of the branch *b* of groove B^2, the rear end of the ejector being thus depressed, while its forward end *e* is lifted and projects into the receiver. A fresh cartridge may now be inserted into the receiver and the breech-bolt moved forward, the cartridge being carried along by the bolt and pushed into the breech-chamber C, the upper inclined face of the extractor-hook e^{21} bearing against the corresponding face 9 of the recess 8 in the breech-chamber wall. When the longitudinal rib b^4 of the breech-bolt has cleared the lug R^2 and said bolt is turned to the right by means of the handle b^5, the bolt will be forced home by the outer face of the lug R^2 operating on the rib b^4, said outer face being also curved rearwardly, so as to form an inclined surface, as hereinbefore stated, thereby forcing the extractor-hook e^{21} into engagement with the rim of the cartridge. The returning of the breech-bolt into a firing position also brings the recess b^6 in line with the arm F^2, in which is formed the full-cock notch *f*, and if the trigger were held back the charge would be exploded; but as the breech-bolt B is moved into the position of firing the sear S^2 engages the full-cock notch *f* and holds the firing-pin against forward motion until released by pulling the trigger. As the breech-bolt B is moved forward the heel of the ejector enters the branch *b* of the groove B^2, thus allowing the forward end *e* of the ejector to drop down flush with the inner face of the receiver. On the other hand, when the bolt B has been fully pushed into the receiver and is turned to a position at right angles to that shown in Fig. 1, the heel *e′* of the ejector will lie in the peripheral branch *b′* of the groove B^2. The shell-extractor E′ is a spring-arm, the stress of which is exerted downwardly, so that the hold of the extractor-hook e^{21} on the cartridge-shell is not released until this is done forcibly by the ejector E. This downward stress of the shell-extractor E′ may be increased by an auxiliary spring-arm 12, Fig. 5, the front end of which bears against the inclined under side of the ledge or projection 5 when the parts are in their respective positions for firing.

The object of pivoting the shell-extractor to the carrier C′ is to facilitate the removal of the breech-bolt from the receiver, which could not be done otherwise, for the reason that the bolt cannot be turned to bring its locking-lug b^3 on a line with the slot at the rear end of the receiver. By pivoting the extractor to the carrier it can be lifted above the lug R^2 and turned to one side, when the bolt may be turned sufficiently to bring its locking-lug b^3 on a line with the slot formed by lug R^2 and the opposite wall of the receiver and then withdrawn from the latter.

In Figs. 5 and 6 we have shown a modified arrangement of the shell-ejector. The locking-lug b^3 is chambered. In the chamber thereof is seated an ejector-pin P, so as to move freely therein. On the lug R^2 of the receiver R is a stud or projection 14, Fig. 7, that impinges on the head *p* of pin P when the breech-bolt B is moved to the limit of its backward motion, causing the forward end of the pin to strike the cartridge-shell and eject it from the receiver.

We have described the gun as a single loader, and it may be so used, the cartridges in the magazine M being prevented from entering the receiver by the stop-lever L; but when used as a repeater said lever is turned out of the way, as hereinbefore described.

The magazine.—The magazine M, Figs. 1, 2, 3, 4, 7, 15, 16, and 17, is an open casing having a flat bottom *m′*, that merges into an upwardly-curving rear wall m^2, partly inclosing the left side of the receiver R, below which the magazine is located, the receiver constituting the top of the said magazine. The right side or front of the magazine is closed by a gate G, held in a closed position by means of a latch that is constructed and operated as follows: The spring latch or lever A is secured to the upper wall g^2 of the gate G by means of a screw s^3, and is adapted to engage a locking-notch N. On said latch A is secured or formed a horizontal journal *a*,

Fig. 7, that fits into a bearing or eye d, formed on the stem of a thumb-piece D, that is provided with a bearing-flange d', so that when the thumb-piece is tilted toward the right the spring-latch is lifted out of the locking-notch N. The gate is pivoted to the magazine by means of a pivot-screw S^3, and in its front wall g^3 has an opening, the front and rear walls of which incline outwardly and forwardly, (see Fig. 16,) and in said opening is seated the heel h' of a strong spring H, having an arm h, formed at right angles thereto at its free end, that lies in a concave notch or recess o of a feed-lever O, pivoted to a stud or pin o', depending from the top of the gate. The lever O has at its outer end a spoon-shaped head O', to which is pivotally connected the feed-plate Q, said plate having a central aperture provided with bearings for a journal or pivot-pin q, Fig. 16, so that as the lever moves under the stress of the spring H from the position shown in the latter figure to that shown in Fig. 15 the feed-plate will be able to assume such position as to remain at all times fully in contact with the cartridges. On the back the feed-plate is provided with a longitudinal groove q', in which the lever O lies when the parts are withdrawn in the lid or held therein by the cartridges in the magazine, so that said parts fold together compactly. On one side of the fulcrum o' of lever O is an abutment a', that projects from the magazine behind the short arm o^2 of lever O, which short arm, as shown in Fig. 16, is in contact with said abutment a', so that as the gate is swung farther open the lever will be forced against the stress of its spring H into or against the gate, as shown in Figs. 1 and 17. When the gate is closed, the fulcrum o' of lever O will lie so far to the left or rear of the abutment—namely, about at o^{21}, Fig. 16—as to allow said lever to swing fully into the magazine, as shown in Fig. 15. The spring H therefore exerts its full power on the lever O only when the magazine-gate G is closed, while when open the stress of the spring is taken up by the abutment a'.

It is obvious that if the magazine is filled with cartridges a continuous pressure is exerted thereon by the feed-plate Q. The foremost or left-hand cartridge sliding up the curved wall m^2 will lie along the slot 1 of the receiver. The magazine-gate G is or may be provided with a stop-lip g^5, as shown in Fig. 16, to limit its outward movement.

We have hereinbefore stated that the rear end of the slot 1 in the receiver R is narrower than the front end, but is of such width as to allow a portion of the rim of the cartridge-shell to project into the receiver in the path of the breech-bolt B when the stop-lever L is turned out of the way, as shown in dotted lines in Fig. 7. As the breech-bolt is moved forward it impinges upon the projecting end of the shell and carries it along, the bullet sliding up the inclined face 2 at the forward end of the slot, at which time the rear end of the cartridge has also reached the wider portion of the slot and will be forced into the receiver by the feed-plate Q or by the next succeeding cartridge. The inclined face 2 guides the bullet end of the cartridges into the breech-chamber, as hereinbefore stated.

In order that the last cartridge in the magazine may be properly fed to the receiver, which can only take place by the feed-plate assuming a more or less inclined position to permit it to move up sufficiently toward the slot 1, we form the fulcrum-bearing o' for the lever O of an elongated slot o^7, so as to permit the lever and plate to take the inclined position shown in dotted lines in Fig. 7.

In guns of this description it is desirable to provide means for locking the firing-pin against forward movement to prevent the accidental discharge of the gun. We have hereinbefore stated that the breech-bolt B has a rearwardly-tapering shoulder b^8, in which is formed a longitudinal notch or recess b^9 that is substantially semi-cylindrical in cross-section. In the extractor-carrier C' is formed a bearing, in which is seated a locking-pin C^2, that projects into the recess formed in the carrier for the accommodation of the shoulder b^8 on the breech-bolt. That part of the pin that lies within the recess of the carrier C' is cut away on a line corresponding with the inclination of the shoulder b^8, (see Fig. 3,) so that when the flat face of the pin faces the shoulder the breech-bolt can turn freely in the carrier. When, however, the pin is turned by means of the thumb-piece c^{22}, the rounded portion will enter the recess b^9 and lock the bolt against rotation. This can only take place when the bolt is in a given position—namely, in that in which the firing-pin is at full-cock, so that when the bolt-handle b^5 is turned to the firing position and the locking-pin C^2 is also turned the bolt is locked against rotation in the receiver. The thumb-piece has a sleeve-bearing c^3, that fits on the rear end of the locking-pin, and is of such diameter as to project into the path of the shoulder f^{23}, formed by the enlarged or handle end of the firing-pin F F'. In order to allow the firing-pin to move forward, a portion of the sleeve-bearing c^3 is cut away, as shown at x, Fig. 3. The relation of this cut-away portion x to the firing-pin is such as to normally register with said pin, the thumb-piece c^{22} being then in the position shown in full lines in Figs. 1, 3, 8, and 9, thus allowing free motion to the firing-pin. When, however, the thumb-piece c^{22} is turned up to lock the bolt, the cut-away portion of the sleeve-bearing moves out of register with said handle end of the firing-pin, the sleeve-bearing lying in front of the shoulder f^{23}, thus locking the pin against movement.

Having particularly described the nature of our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a breech-loading gun, a firing-pin composed of two sections connected by a ball-and-socket joint, substantially as described.

2. In a breech-loading gun, a firing-pin composed of two sections connected by a ball-and-socket-joint, and a locking device for locking the sections rigidly together, substantially as described.

3. In a breech-loading gun, the firing-pin or bolt F, composed of the stem *f*, provided at its front end with the coupling-arm f^6 and coupling-head f^5, in combination with the striking-nipple F′, having the tubular portion f^2 and the bearing f^4 for the coupling-head, substantially as and for the purposes specified.

4. In a breech-loading gun, the combination, with the receiver provided with the recess 4 and the lug R^2, of the breech-bolt provided with the rib or shoulder b^8, having a locking-notch b^9, a spring-actuated firing-pin having an endwise motion within the breech-bolt and terminating in a handle or knob of greater diameter than the body of said pin, an extractor-carrier having a tubular projection extending into the breech-bolt, a recess for the reception of the rib or shoulder b^8 on the bolt, a locking-pin pivoted in the extractor-carrier and adapted to engage the locking-notch in said rib or shoulder, and a thumb-piece connected with the pin, having a bearing-sleeve of greater diameter than said pin, said bearing-sleeve having a portion thereof cut away, substantially as and for the purposes specified.

5. In a breech-loading gun, the combination, with the receiver having at its forward end an inclined face 9, of the breech-bolt and firing-pin, a shell-extractor carrier connected with the bolt at its rear end, and a shell-extractor connected with the carrier and having at its forward end an extractor-hook overlapping the like end of the breech-bolt, and having its upper face inclined forwardly, substantially as and for the purposes specified.

6. In a breech-loading gun, the combination, with the receiver having at its forward end an inclined face 9, of the breech-bolt and firing-pin, a shell-extractor carrier connected with the bolt at its rear end, a shell-extractor connected with the carrier and having at its forward end an extractor-hook overlapping the like end of the bolt, said hook having its upper face inclined forwardly, and a shell-ejector arranged to operate on the empty cartridge-shell to release the same from the extractor and to eject it from the receiver, substantially as and for the purposes specified.

7. In a breech-loading gun, the combination, with the receiver having the lug R′, provided with the forwardly-projecting stud 14, of the breech-bolt having the locking lug or rib b^3, and the ejector-pin P, seated in an opening in said lug or rib b^3, substantially as and for the purposes specified.

8. In a breech-loading gun, the combination, with the breech-bolt B, provided at its rear end with a rearwardly-tapering segmental shoulder, and the shell-extractor carrier C′, provided with a groove adapted to fit and revolve on said shoulder, and having a tubular unthreaded portion c^2 extending into the breech-bolt, of the firing-pin having an annular shoulder or abutment, and a coiled spring mounted on said firing-pin between said abutment and the end of the tubular portion c^2 of the carriage, substantially as and for the purposes specified.

9. In a breech-loading gun, the combination, with the receiver, of a horizontal magazine arranged with its inlet on one side of and below said receiver, and with its outlet on the opposite side and in communication with the receiver, substantially as described.

10. In a breech-loading gun, the combination, with the receiver, of a horizontal magazine arranged with its inlet on one side of and below said receiver and with its outlet on the opposite side and in communication with the receiver, and a spring-actuated feeding device at the inlet of the magazine, adapted to feed the cartridges toward or to the outlet thereof, substantially as described.

11. In a breech-loading gun, the combination, with the magazine and the gate thereof, of a locking device adapted to engage a locking-notch in the magazine, and consisting of a spring-catch and a thumb-piece or knob having a shank extending through the top of the gate, said shank being connected with the spring-latch so that when the thumb-piece is tilted the latch will be lifted out of its locking-notch, substantially as and for the purposes specified.

12. In a breech-loading gun, the combination, with the receiver and the horizontal magazine arranged with its inlet on one side below said receiver and its outlet or discharge in communication with said receiver on its opposite side, and the gate for closing the magazine-inlet, and a cartridge-feeding device consisting of a spring-actuated two-armed feed-lever fulcrumed on a stud depending from the overhanging wall of the gate, said lever having an enlarged free end, and a feed-spoon provided with an opening within which the enlarged end of the lever is pivoted, of the fixed abutment *a*′, arranged between the short arm o^2 of the lever and said gate, whereby the lever and feed-spoon will fold within the gate when the latter is swung open, as set forth.

13. In a breech-loading gun, the combination, with the magazine, of a gate and a spring-actuated feed-lever fulcrumed within the gate, said lever terminating in a spoon, and a feed-plate Q, provided with an opening in which the spoon end of the lever is pivoted, substantially as and for the purposes specified.

14. In a breech-loading gun, the combination, with the magazine, of the gate G thereof, the spring H, the feed-lever O, having the spoon-shaped head O′, and the feed-plate Q, provided with an aperture in which the spoon end of the lever is pivoted, substantially as and for the purposes specified.

15. In a breech-loading gun, the combina-

tion, with the magazine and a gate hinged thereto, of a spring-actuated feed-lever having an oblong bearing-slot for the fulcrum-pin and a fulcrum-pin for the lever depending from the overhanging top of the gate, substantially as and for the purpose specified.

16. In a breech-loading gun, the combination, with the magazine and its gate G, of the spring H, the heel h whereof is detachably connected with said gate, the lever O, having been actuated by spring H and having an oblong fulcrum-slot, the fulcrum-pin o', secured to the overhanging top of the gate, and the abutment a' on the magazine arranged in front of the short arm o^2 of lever O between said arm and the gate, substantially as and for the purposes specified.

17. In a breech-loading gun, the combination, with the receiver provided with the lug R^2, whose opposite sides are curved rearwardly, of the breech-bolt provided with the handle b^5, the rib b^4, and recess b^6, having the inclined wall b^7 of the firing-pin provided with the arm F^2, having the full-cock notch f, substantially as and for the purpose specified.

18. In a breech-loading gun, the combination, with the breech-bolt provided with the tapering projection or shoulder b^8, having the locking-notch b^9, and the firing-pin having the shoulder f^{23}, of the extractor-carrier C', the locking-pin C^2 seated therein, and the thumb-piece c^{22}, provided with the sleeve-bearing c^3, having the cut-away portion x, the said parts being arranged for co-operation, substantially as described, for the purposes specified.

In testimony whereof we affix our signatures in presence of two witnesses.

OLE HERMAN JOHANNES KRAG.
ERIK JÖRGENSEN.

Witnesses:
ALFRED J. BRYER,
H. BONNEVIE.