(No Model.) 2 Sheets—Sheet 1.

J. HANSON.

MAGAZINE BOLT GUN.

No. 590,834. Patented Sept. 28, 1897.

Fig. 1.

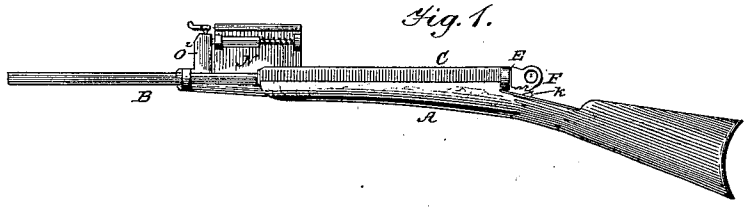


Fig. 2.

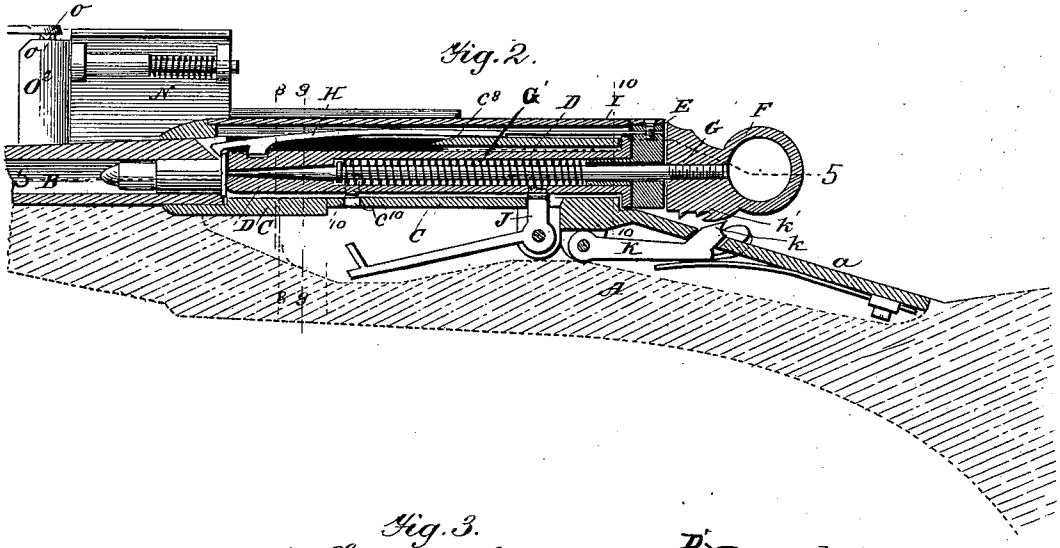


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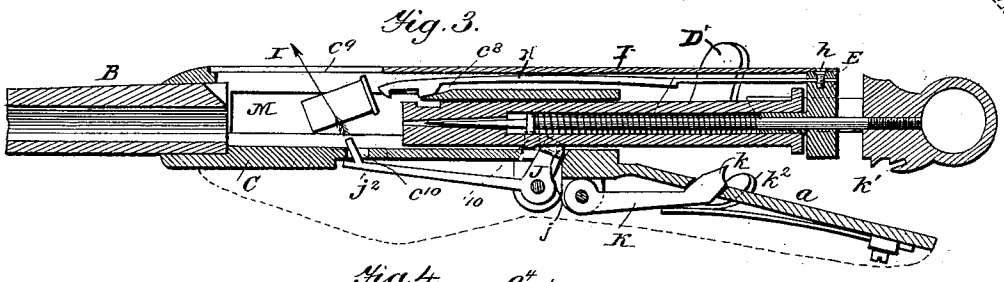


Fig. 4.

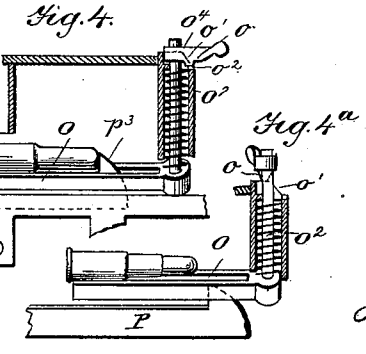


Fig. 4ª

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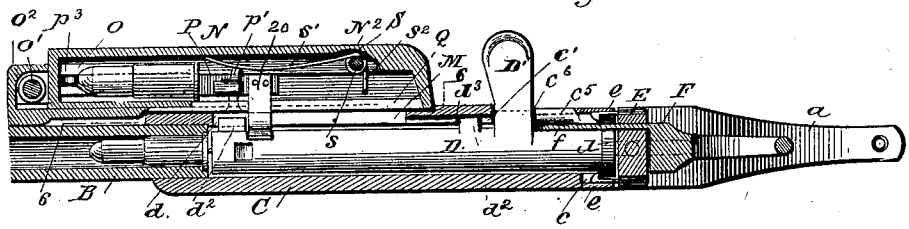
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Fig. 5.



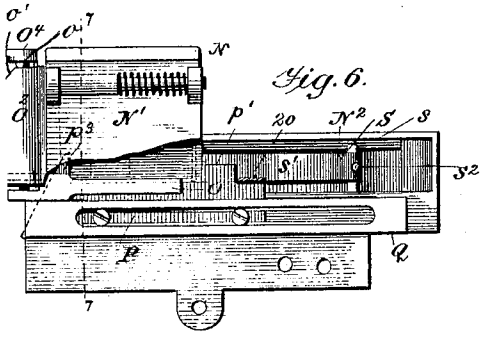


Fig. 6.

Fig. 15.

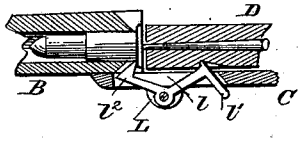


Fig. 7.

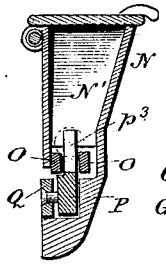


Fig. 8.

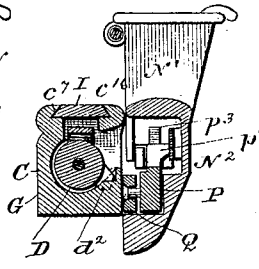


Fig. 9.

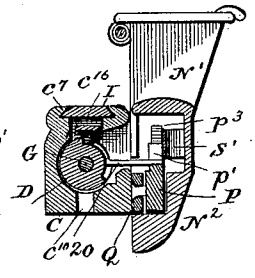


Fig. 10.

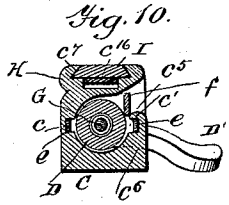


Fig. 13.

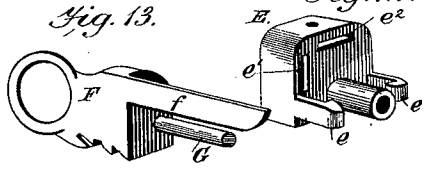


Fig. 12.

Fig. 11.

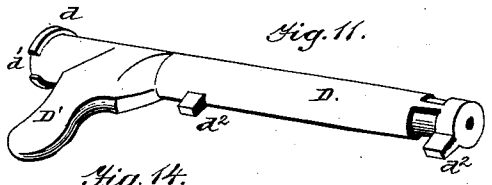


Fig. 14.



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UNITED STATES PATENT OFFICE.

JOSEPH HANSON, OF CRYSTAL FALLS, MICHIGAN, ASSIGNOR OF THREE-FOURTHS TO A. M. DARLING AND S. J. MURPHY, TRUSTEES.

MAGAZINE BOLT-GUN.

SPECIFICATION forming part of Letters Patent No. 590,834, dated September 28, 1897.

Application filed November 6, 1896. Serial No. 611,291. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH HANSON, residing at Crystal Falls, in the county of Iron and State of Michigan, have invented a new and Improved Rifle, of which the following is a specification.

My invention relates to improvements in that class of guns or rifles having magazine-feed mechanism; and such invention primarily has for its object to provide a gun of this character having a simplified arrangement of parts which can be economically manufactured, readily assembled, and which will effectively serve for their intended purposes.

My invention also seeks to provide a simple form of rifle of this kind having the breeching and firing devices so arranged that the cartridges may be placed in position singly by hand or fed automatically in position by the movement of the breech-bolt and as the fired cartridge or shell is discharged.

With other objects in view, which will be hereinafter referred to, the invention consists in the peculiar combination and novel arrangement of parts, such as will be first described in detail and then be specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a rifle constructed in accordance with my invention. Fig. 2 is a longitudinal section of the operating mechanism thereof, the parts being in a position ready to extract the fired cartridge. Fig. 3 illustrates the parts as the ejector is swung up to tilt the shell to a discharge position. Figs. 4 and 4^a are detail views of the cut-off devices hereinafter referred to. Fig. 5 is a horizontal section taken practically on the line 5 5 of Fig. 2. Fig. 6 is a vertical longitudinal section taken on the line 6 6 of Fig. 5. Fig. 7 is a transverse section taken on the line 7 7 of Fig. 6. Figs. 8, 9, and 10 are cross-sections taken, respectively, on the lines 8 8, 9 9, and 10 10 of Fig. 2. Fig. 11 is a detail perspective view of the breech-bolt. Fig. 12 is a similar view of the firing-pin guide. Fig. 13 is a detail view of the cocking-head. Fig. 14 is a detail view of the firing-pin; and Fig. 15 is a vertical section of the rear end of the barrel, illustrating in detail the shell-starting devices hereinafter referred to.

Referring now to the accompanying drawings, in which the same letters indicate like parts in all the figures, A indicates the gun-stock, B the barrel, and C the frame.

D indicates the breech-bolt, which has a flange d on its rear end having grooves or cut-out portions d', so as to permit of the connection therewith of the hook members e of a receiver or guide-piece E, which forms a guide for the cocking-head F and the rear end of the firing-pin G, presently referred to, such connection of the piece E and the bolt D being provided to carry the guide E and cocking-head backward and forward with the breech-bolt and thereby keep the cocking-head and firing-pin in a proper position at all times.

The guide-piece E has a vertical slot e', through which the guide-shank f of the cocking-head F passes, and a horizontal slot e^2, which receives the rear end of the extractor H, which is held secure to such piece E by the screw h.

The frame C has a receiver portion provided on the left side near the rear end with a groove c to receive one of the hooks e of the guide E when the same is forced home during firing. At the right side the frame has a longitudinal groove c', which forms a guide for the lateral extensions or lugs d^2 d^2 on the breech-bolt, one being disposed near the front, while the other is near the rear end thereof, cavities d^3 being also provided in the frame communicating with the grooves c' to receive the said lugs d^2 d^2 when the bolt D is turned in the manner presently described, and which locks the bolt D from longitudinal movement.

The firing-pin G is made fast at its rear end to the cocking-head F, and it, as also the piece E, is normally held to its forward position by the retractile spring G', arranged in the manner clearly shown in Fig. 2.

The breech-bolt has a handle member D', which is adapted to pass through a slotway c^5 in the rear end of the frame when it is turned up out of the seat c^6 in the frame during the rear or shell-extracting movement of the bolt D.

In the upper face of the frame is a groove c^{10}, in which is held to slide the extractor member H, it also having a dovetail groove c^7, which receives the dust-slide I, which is connected to the upper end of the guide-piece E, and which moves with such piece E, whereby

when the cocking-head F and the bolt are withdrawn, as in Fig. 3, the said dust-guard will slide back to uncover the rear end of the receiver and thereby admit of the ready discharge of the shell in the manner hereinafter described, and also admit of the ready insertion of the cartridges when fed singly by hand. It will also be noticed by reference to Fig. 2 that the frame has a solid web portion between the bolt and the extractor-groove which terminates in an inclined end portion c^8 at a point far enough back to allow the shell to clear the barrel, such inclined portion being provided to cause the extractor as it is pulled back and engages it to rise and release the shell just as the lug 10 on the bolt D strikes the vertical part j of a pivoted tumbler J, which has a long arm provided with a throw-off finger j^2, which extends up through a slot c^{10} in the bottom of the receiver and tilts the shell and throws it up through the opening c^9, as clearly shown in the drawings, such operation being effected just in advance of the automatic operation of the cartridge-feeder mechanism presently referred to.

K indicates the trigger, which is pivotally connected at one end to the frame C, its free or outer end being in the nature of a spring member, having a sear-nose k projected up through the extension a in a position to engage the notches k' in the cocking-piece, such trigger member having a finger or thumb piece k^2, as shown.

L indicates the cartridge-starter and consists of a rocker member pivoted in a slotway in the under side of the receiver, which is adapted to work on the lower part of the receiver against the barrel, the breech-bolt having a slot l, in which the long end l' of the rocker fits when the bolt is in a position for firing. The object of the rocker is to start the empty shell out of the barrel as the bolt is pulled back, so the extractor can positively grip the same, such operation being effected by the breech-bolt depressing the long arm of the rocker when pulled back to throw upward and backward the hook end l^2 to force out the shell. At one side the frame C is slotted, as at M, and to such side the magazine N is secured, the construction of which is best shown in Fig. 5, by reference to which it will be seen the same consists of a cartridge-receptacle proper, N′, and a rear extension N^2, in which a carrier O is held which fits the bottom or discharge end of the holder N′, the rear wall of which is in open communication with the extension-chamber N^2.

The carrier O is slotted from the rear end to admit the hook end of a feed-slide P, which is guided in a slotted member Q, and which has its hook end beveled on the front face and is provided with a vertical extension p' and an outwardly-extending angle-bracket arm 20, which projects into the frame C and engages a groove R in the outer end of the bolt, as clearly shown in Fig. 9.

By connecting the member P with the breech-bolt in the manner shown and described it is manifest that when the bolt is drawn back the hook end p^3, which has its front edge beveled to pass under the cartridges, will engage the bottom cartridge in the magazine-holder and pull it into the extension-chamber N^2 in line with the opening M in the adjacent wall of the frame.

Within the chamber N^2 is held a throw-off or cartridge-feeding device, which is in the nature of a horizontal crank member S, pivoted on a pin s, its long arm s' being, during the firing position of the parts, held against the rear wall of the said chamber N^2, and its short arm s^2 in the rear of the vertical member p' of the slide P, as clearly shown in Fig. 5, by reference to which it will be seen that the several parts are so arranged that immediately after the ejector-arm throws the shell up through the opening in the top of the frame the member p' will engage the short arm s^2 of the crank S and cause its long arm f to swing out and thereby move the cartridge in front of the breech-bolt.

To provide simple means for cutting off the feed of the cartridges from the magazine to the breech-chamber, the carrier O is made vertically adjustable, and for such purpose it has a vertical rod O^2, spring-pressed to its downward position, and having at its upper end a finger-piece O^4, having a lock-lip O, which is adapted to engage a depressed portion in the sleeve or casing surrounding the rod O^2 when turned to point forward and to engage an inclined portion O′ when turned toward the rear, (see Figs. 4 and 4^a,) such adjustment of parts moving the carrier O up or down to set it either in position to hold the bottom cartridge in or out of position to be fed forward.

The long arm f on the cocking-head rests on the base of handle member of the bolt and is beveled so that when such handle is raised it pushes back the cocking-head, so that the firing-pin never touches the primer of the cartridge until the bolt is securely locked. The cut-off device is very readily observed by the squad-leader and may be set whether the gun is arranged either for single or repeated firing.

The magazine can be loaded singly or by a number at a time. The peculiar arrangement of the cocking-head, firing-pin, and the bolt is such that the greatest pressure of the mainspring is overcome by the movement of the bolt-handle.

From the foregoing description, taken in connection with the accompanying drawings, it is thought the complete operation and advantages of my invention will be readily understood.

By connecting the cocking-head with the firing-pin G in the manner shown such firing-pin will be drawn back with the head to the position shown in Fig. 3, and it will be held in such position—that is, its firing end will be held back—so long as the breech-bolt han-

dle D′ is turned up to the position shown in Fig. 3, as such handle forms a stop to hold the arm *f* of the head from moving forward.

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

1. In a firearm, the combination of the frame, the breech-bolt mounted on the frame and having a limited rotary movement and provided at its rear end with a flange having cut-out portions, the guide-piece having hook members to pass through the cut-out portions of the flange and engage the latter, the firing-pin, and the cocking-head, substantially as described.

2. In a firearm as described, the combination with the frame and the receiver, said frame having a slotway c^5 and a seat c^6 at the rear end, of the bolt D, held for a limited rotary movement in the receiver, and having a handle D′ and a flange *d* on its rear end having cut-out portions *d′*, the guide-piece E having hook members *e* to pass through the cut-out portions *d* and engage with the flange *d*, the cocking-head F and the firing-pin all arranged substantially as shown and for the purposes described.

3. The combination with the frame, having a bolt-receiving bore, and an enlarged or cartridge-receiving chamber, said chamber having a shell-passage in the top, and a slideway above the bore, said slideway having its front inclined, of the breech-bolt, the cocking-head guide and the firing-pin, the extractor held to slide on the slideway and having its front end projected downward to engage the incline of the slideway, said extractor being secured at the rear end to the guide, and an ejector device operated by the backward movement of the bolt to force the shell up out of the cartridge-chamber as set forth.

4. In a breech-loading firearm, the combination with the receiver, a slideway thereover having an inclined forward face, the cartridge-chamber having a shell-passage in the top, and an ejector device operating from below, of the breech-bolt, the cocking-head and the firing-pin, a detachable guide-piece carried on the rear end of the bolt, a dust-guard slidable over the cartridge-chamber secured to the said guide-piece, and a shell-extractor secured to the guide-piece movable on the slideway having at its forward end a hook to engage the shell, and an inclined portion adapted to engage the incline of the slideway to disengage the extractor from the shell, all being arranged as shown and for the purposes described.

JOSEPH HANSON.

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DAN GOHOGAN.