No. 676,181. Patented June 11, 1901.

C. S. EVANS.

SHOTGUN.

(Application filed Nov. 22, 1900.)

(No Model.) 3 Sheets—Sheet 1.

Fig. 1.

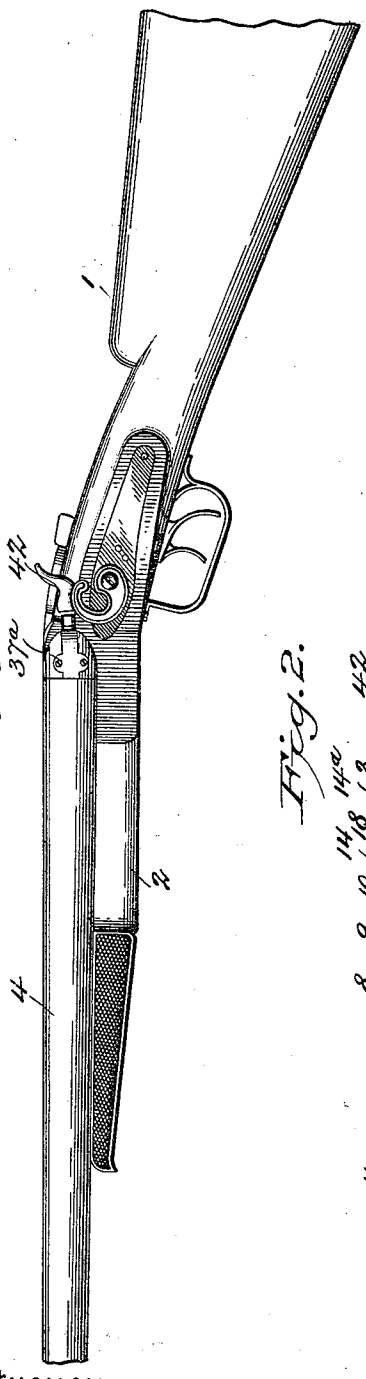
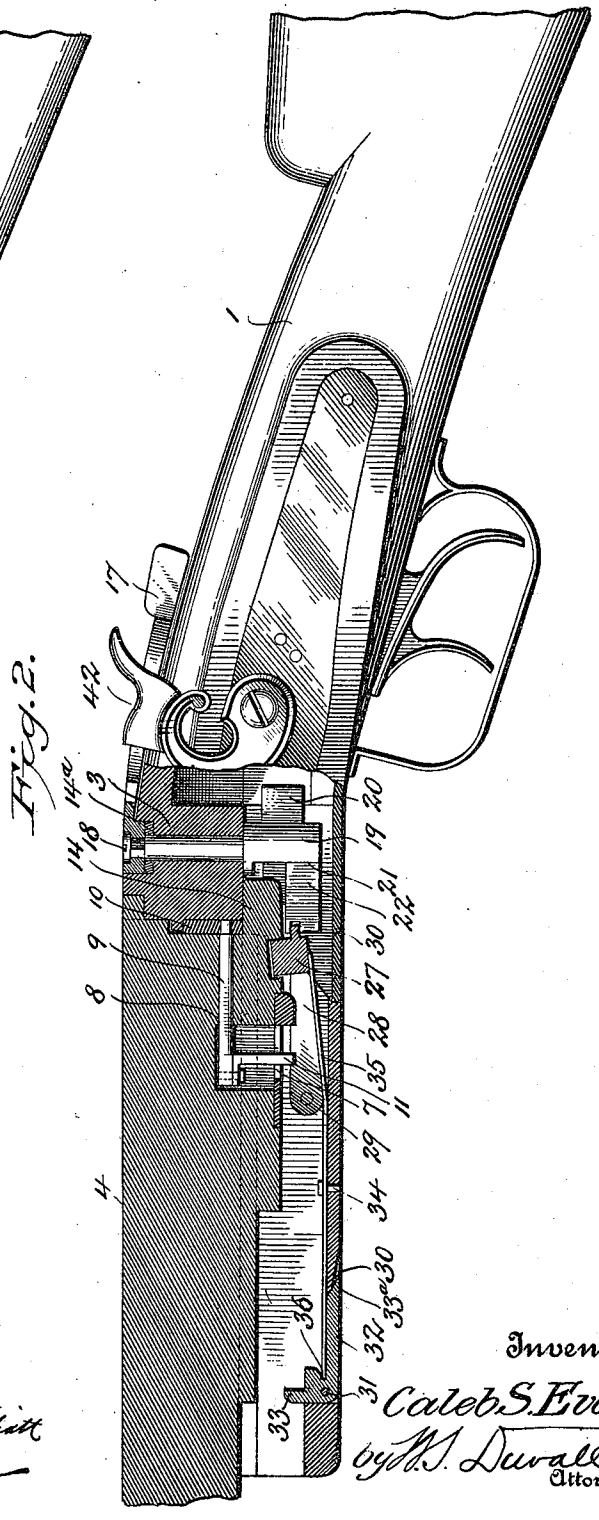


Fig. 2.



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THE NORRIS PETERS CO. PHOTO-LITHO., WASHINGTON, D. C.

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3 Sheets—Sheet 2.

Fig. 3.

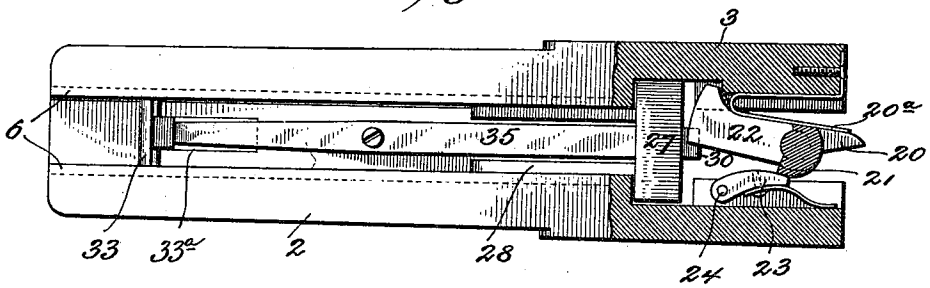
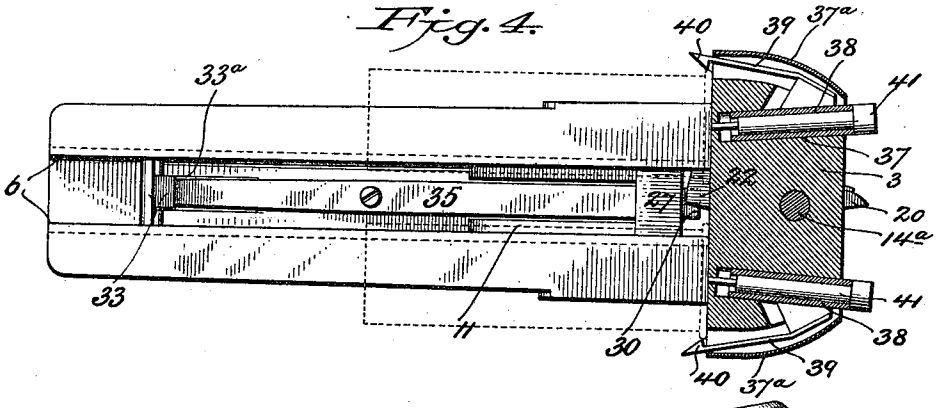


Fig. 4.



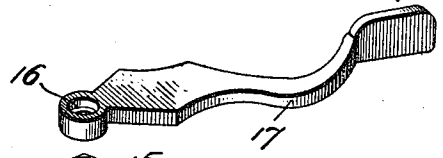


Fig. 5.

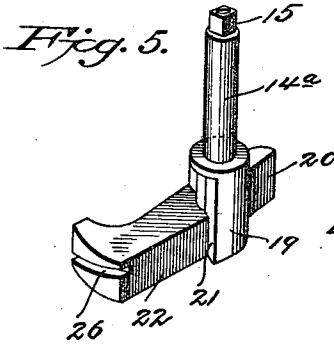
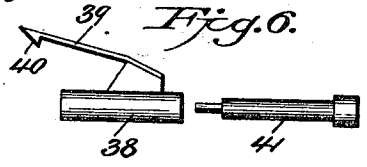


Fig. 6.



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SHOTGUN.

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(No Model.) 3 Sheets—Sheet 3.

Fig. 7.

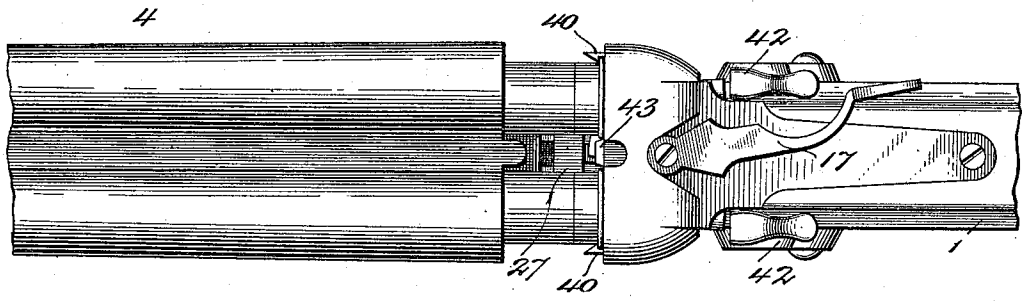


Fig. 8.

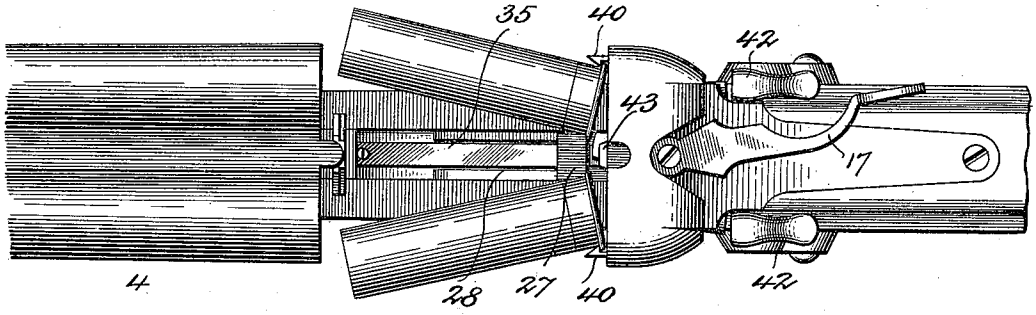
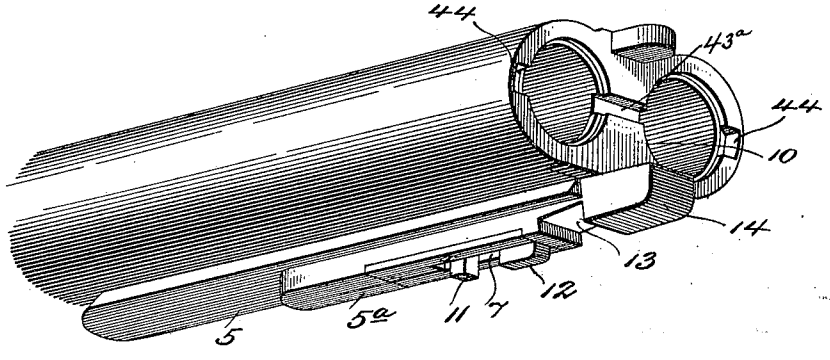


Fig. 9.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CALEB S. EVANS, OF UNION CITY, INDIANA.

SHOTGUN.

SPECIFICATION forming part of Letters Patent No. 676,181, dated June 11, 1901.

Application filed November 22, 1900. Serial No. 37,368. (No model.)

To all whom it may concern:

Be it known that I, CALEB S. EVANS, a citizen of the United States, residing at Union City, in the county of Randolph and State of Indiana, have invented new and useful Improvements in Shotguns, of which the following is a specification.

This invention relates to breech-loading top-action shotguns of the hammer variety, and especially to that class of breech-loading guns wherein the barrels are mounted for sliding upon the fore-arm or extension.

The objects of my present invention are, first, to increase the effectiveness and to simplify the mechanism of the top-action bolting system connecting the gun-barrels with the stock when in their relative normal firing position; second, to facilitate the removal of the barrels from the fore-arm or stock by a simplification of the mechanism; third, to provide a more efficient automatic shell-ejecting mechanism, and, fourth, to obviate and render unnecessary the use of numerous parts heretofore employed and on the whole to greatly simplify and therefore cheapen the mechanism employed.

Various other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the appended claims.

Referring to the drawings, Figure 1 is a general view in elevation of a shotgun embodying my improvements. Fig. 2 is an enlarged central longitudinal sectional view thereof, the view only including so much of the stock and barrels as is occupied by the barrel-locking mechanism. Fig. 3 is an enlarged longitudinal horizontal sectional view through the breech-block below the firing pins or plungers, the fore-arm being shown in plan with the barrels removed. Fig. 4 is a similar view taken through the firing pins or plungers. Fig. 5 is a detail in perspective of the top-action bolt and top lever detached. Fig. 6 are details of the firing pin or plunger and its guide-sleeve. Figs. 7 and 8 are similar views in plan of the breech, showing the gun as in the act of opening for the purpose of withdrawing and ejecting the exploded shells, the first view showing the barrels partly withdrawn or open and the second view as wholly withdrawn or open and the empty shells in the act of being discharged or ejected sidewise from the gun; and Fig. 9 is a detail in bottom perspective of the barrels.

Similar numerals of reference indicate similar parts in all the figures of the drawings.

I employ the usual stock 1, having the fore-arm or extension 2, breech-block 3, and in this instance the pair of barrels 4. The barrels are provided on their under sides and between the same with a dovetailed rib 5, the sides of which conform to similar grooves 6, (see dotted lines, Figs. 3 and 4,) formed in the opposite side walls of the channeled fore-arm or extension 2 of the stock. On its under side between its edges and toward its rear end the rib 5 is thickened, forming a subjacent block 5^a, in which is formed a slot or recess 7, that communicates with a cylindrical opening 8, which latter receives a reciprocating stem 9, which at its rear end is connected with the usual shell-starter 10 and at its front end to a depending arm 11, that extends below the block 5^a. The block is further provided back of its recess or slot 7 with a depending lug 12 and in rear of the lug with a transverse mortise 13, the rib being formed with a rear extension 14.

14^a designates the top-action bolt, the same being swiveled in the breech-block 3 and in the present instance being squared, as indicated at 15, to receive a corresponding eye 16, formed in the operating or top lever 17, these parts being held in position by means of a screw 18, threaded in the squared portion of said bolt. The lower end of the bolt is formed with a boss 19, from the rear side of which extends a curved or convexed finger 20, interposed between which and the wall of the receiver at one side is a V-shaped top-action spring 20^a, which serves to normally press the bolt to the position shown in Fig. 2, wherein the top operating-lever is in line with the stock, and, as will hereinafter appear, the barrels are positively locked against withdrawal. The boss 19 is provided at the side opposite the spring 20^a with an abrupt locking-shoulder 21 and in front of the shoulder with an arm 22. Normally and lightly pressed against the boss at a point back of the shoulder 21 is a spring-actuated

latch 23, pivoted at 24 at its front end within the breech-block and which may be caused to engage the locking-shoulder of the boss, and thus hold the top bolt against rotating when the lever 17 is moved to the right against the action of the spring 20^a.

The rock-arm 22 is formed at its front or free end with a curved face, which is provided with an inclined groove 26.

27 designates a vertically-movable barrel-locking bolt located immediately under and in front of the face of the breech-block, the ends of the bolt occupying recesses formed in the sides of the fore-arm or extension and are supported upon the free ends of a pair of rearwardly-extending arms 28, the front ends of which are correspondingly pivoted to the opposite walls of the channeled fore-arm by screws 29, whereby the up-and-down movement of the locking-bolt is on the arc of a circle. This movement is effected by the oscillations of the top-action bolt 14^a, the segmental arm 22 of which is slidably connected to the locking-bolt by a traveling pin or lug 30, that extends from the rear face of the bolt and travels in the groove 26 of said arm. By this means, as will be obvious, the bolt is raised and lowered into and out of the mortise 13 of the rib of the barrels by the oscillations of the top-action lever and when in position the gun-barrels securely locked against withdrawal by reason of the engagement of said bolt 27 with the mortise 13. By slightly varying the inclination or pitch of the groove 26 in the arm 22 it is clear that the locking-bolt may be caused to impinge with increasing firmness in the mortise 13 as said bolt is elevated, thus taking up wear continuously. It will be observed that when the top-action lever is swung to the right sufficiently far to cause a withdrawal of the bolt 27 from the mortise the locking-shoulder of the boss will become engaged with the spring-actuated catch 23, and thus the bolt maintained in its depressed or unlocked position until the barrels are returned to a closed position, by which latter operation the extension 14 of the rib 5 of the barrels contacts with and trips the catch 23, thus liberating the top-action bolt and permitting the same to partially rotate in a reverse direction through the influence of the spring 20^a, whereby the bolt 27 is reëlevated into the mortise 13 and the barrels securely locked.

The bottom of the channel of the fore-arm near its front end is provided with an opening 30, in which is pivoted, as at 31, a bell-cranked catch-lever 32, the lower branch of which, in the form of a plate 33^a, normally closes the said opening 30 and the upper branch of which forms a stop-lug 33, which latter when the plate is elevated or in its normal position within the opening 30 is located in the path of the depending arm 11 of the shell-starter 10, thus causing the latter to recede and start the shell from the barrels when the latter are moved or slid forward, so as to cause said lugs 11 and 33 to contact. By engaging the finger under the free end of the plate 33^a, which end is beveled for this purpose, as shown, the bell-cranked catch-lever may be swung on its pivot so as to withdraw or lower the lug 33 thereof from the path of the depending lug of the shell-starter, whereby the barrels may be entirely removed from the stock, or, in other words, the gun "taken down." In reassembling the parts or "setting the gun up," the upper outer end of the lug 33 being chamfered or beveled, the rear rounded corner of the extension 14 will serve to tilt and therefore readily pass the same.

I prefer to secure by a rivet 34 or otherwise in the bottom of the channel of the fore-arm a light flat spring 35, the rear end of which takes under and bears against the transverse locking-bolt 27, and the opposite or front end of which spring takes into a kerf 36, formed in the rear face of the stop-lug 33, whereby the bell-cranked latch is normally elevated and the opening 30 in the fore-arm normally closed.

In suitable bores 37, formed in the breech-block and which may be closed by plates 37^a, are located the tubular guide-sleeves 38, the same being designed to loosely reciprocate within said bores and to accommodate the headed firing pins or plungers 41. From the outer side of each of these guide-sleeves, rigid and adapted to move therewith, extends an outwardly and forwardly disposed resilient extractor 39, the same terminating at its forward free end in a beveled or barb-shaped head 40. In lateral alinement with these extractors and extending rigidly from the face of the breech-block, at the center thereof, is an ejecting stud or block 43, the opposite sides of which are chamfered or beveled, as shown. The extractors are normally pressed inward, so that the distances between the ends of the extractors and the adjacent beveled faces of the ejecting block or stud are slightly less than the diameter of the base of the shell. To accommodate the ejecting stud or block 43, the breech of the gun is provided with a transverse recess or cavity 43^a between the two barrels, into which the ejecting stud or block enters when the gun is closed ready for discharge. A closing of the gun—as, for instance, after loading—causes the sleeves and extractors to recede by reason of the rims of the shells coming against the ends of the extractors, the latter serving to slightly withdraw the firing pins or plungers, so that the latter are out of contact with the primers of the shells. When, however, the hammers 42 fall, as when the gun is discharged, they serve to drive the firing pins, sleeves, and extractors forward, whereby the pins are caused to explode the shells and the shoulders or barbs of the extractors are caused to ride over the rims of the shells and engage the same, the front ends of the said extractors lying within the small recesses 44, formed in the sides of the chambers of the gun, all as shown in Fig.

9. A subsequent forward movement of the barrels after firing will leave the empty shells engaged by the extractors at their outer edges and with their inner edges bearing against the beveled or chamfered faces of the ejecting block or stud, as shown in Fig. 7, in which position they remain until liberated by a further withdrawal of the barrels. When the barrels have been withdrawn sufficiently far to liberate the empty shells, the latter being forced inward against the chamfered or beveled faces of the ejecting stud or block will be deflected and thrown outward by the latter, and thus be discharged at opposite sides of the gun in the manner indicated in Fig. 8. It will be noted that only the shell fired will be so ejected, as no engagement takes place between the base of the shell and the extractor except upon the fall of the hammer, as in the act of discharging the gun; furthermore, that if no discharge of the gun takes place the shells will not be ejected, but will remain in place in the chambers of the barrels.

From the foregoing description it will be seen that I have accomplished the various objects of my invention, as hereinbefore set out, in a most simple and economic manner and provide a gun that may be constructed at a medium price and wherein are present most of the desirable features and which are now to be found only in guns of higher grade and price.

Of course it will be understood that I do not limit my invention to the various details of construction herein described and illustrated, but hold that I may vary the same as may be found necessary.

Having described my invention, what I claim is—

1. In a breech-loading firearm, comprising a sliding barrel provided with a transverse recess or cavity, the combination with an oppositely-beveled ejector block or stud extending from the face of the breech-block at the center thereof, guide-sleeves mounted loosely in the breech-block and adapted to reciprocate, a resilient extractor carried by each of the guide-sleeves and terminating at its free end in a beveled head or barb and arranged to move with the sleeve, and a firing-pin mounted in each of the sleeves and longer than the same.

2. In a breech-loading firearm, comprising sliding barrels provided with a transverse recess or cavity, the combination with the breech-block having the pin-holes, and the transversely-disposed bevel-faced ejecting-stud extending from the face of the breech-block between the pin-holes, of the guide-sleeves located for reciprocation in said pin-holes, the resilient extractors extending laterally and forwardly from and carried by said guide-sleeves and terminating at their free ends in beveled heads or barbs, and the headed firing-pins located in and longer than the said guide-sleeves and adapted to be struck by the hammers.

3. In a breech-loading firearm, comprising a pair of sliding barrels, the combination therewith of a bell-cranked latch having a stop-lug located in the bottom of the fore-arm of the stock and in the path of a depending portion of the barrels, whereby the outward movement of the latter is limited, a spring for normally elevating the bell-cranked latch, whereby the stop-lug thereof is normally maintained in an elevated position, and means carried by the barrels for depressing the stop-lug upon an inward movement of said barrels.

4. In a breech-loading firearm, comprising a pair of sliding barrels, the combination therewith, of a bell-cranked latch provided with a stop located in a recess in the fore-arm of the stock and in the path of a depending portion of the barrels, whereby the forward movement of the latter is limited, and a beveled extension on the rear ends of said barrels adapted to depress and pass the stop-lug.

5. In a breech-loading firearm, comprising sliding barrels, a shell-starter having a depending portion extending into the channel of the fore-arm, in combination with a bell-cranked latch, the lower branch of which constitutes an operating-plate, and the upper branch of which forms a stop, and a spring for normally elevating said bell-cranked latch, whereby the stop is elevated into the path of the depending portion of the shell-starter, to limit the outward movement of the barrels, and means carried by the barrels for depressing said stop upon an inward movement of said barrels.

6. In a breech-loading firearm, comprising a pair of sliding barrels, the combination with a top-action bolt provided with an operating-lever, and a spring for maintaining the lever in substantially an alining position with the stock, of an arm projecting from the lower end of the bolt through an opening in the breech-block and provided with a groove inclined with relation thereto, a vertically-movable bolt, a pin connection between the groove and bolt, whereby the rotation of the top-action bolt will cause said bolt to rise and lower into and out of engagement with a mortise formed in the rib of the barrels, and a pair of arms supporting the ends of the bolt and at their opposite front ends pivoted in the channel of the fore-arm.

7. In a breech-loading firearm, comprising a pair of sliding barrels, the rib of which is formed with a transverse mortise, the combination with a vertically-journaled top-action bolt, its lever, and a spring for operating the same in one direction, of an arm extending forwardly from the lower end of the bolt through an opening formed in the breech-block, and a vertically-movable bolt adapted to engage said mortise in the rib and having a cam connection with the said forwardly-extending arm.

8. In a breech-loading firearm, the combination with a pair of sliding barrels, provided on their under side with a longitudinal rib

having a transverse mortise, of a top-action bolt, its actuating-spring, and lever, a vertically-movable transversely-disposed bolt located in the fore-arm in line with the mortise, and connections between the top-action bolt for raising and lowering the latter through the rotations of the former.

9. In a breech-loading firearm, the combination with a pair of sliding barrels, provided on their under side with a rib having a rear extension and in advance thereof with a transverse mortise, of a transverse vertically-movable bolt adapted to engage said mortise, a top-action bolt and its operating lever and spring, a connection between the top-action bolt and the locking-bolt, whereby the latter is operated to rise and lower by the action of the former, a boss carried by the top-action bolt and formed with an abrupt shoulder, a spring catch or latch located in the path of the same and adapted to be engaged when the bolt is rotated to raise and lower the locking-bolt, the said spring-catch being located in the path of the extension of the barrels aforesaid.

10. In a breech-loading firearm, the combination with a pair of sliding barrels provided on their under side with a rib having a transverse mortise, of a top-action bolt, its lever, and a spring for the same, a transversely-disposed vertically-movable locking-bolt for the mortise and located below the same in the fore-arm of the stock, a connection between the same and the top-action bolt, whereby the locking-bolt will be raised and lowered by the action of the top-action bolt, a spring-catch for engaging and holding the top-action bolt when operated to depress the locking-bolt, and means carried by the barrels for disengaging said spring-catch and releasing the top-action bolt when the barrels are returned to a closed position.

In testimony whereof I affix my signature in presence of two witnesses.

CALEB S. EVANS.

Witnesses:
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GRANVILLE REYNARD.