

(No Model.)

2 Sheets—Sheet 1.

D. S. SEYMOUR.

SHIFTABLE FIRING PIN AND EXTRACTOR FOR FIREARMS.

No. 530,967.

Patented Dec. 18, 1894.

Fig. 3

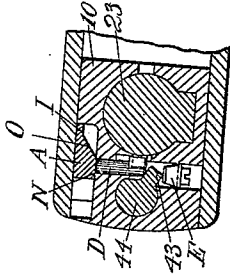


Fig. 2

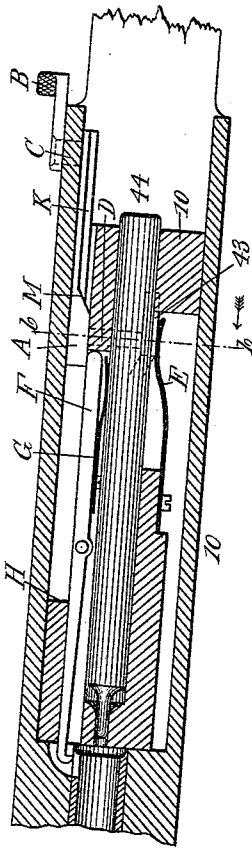
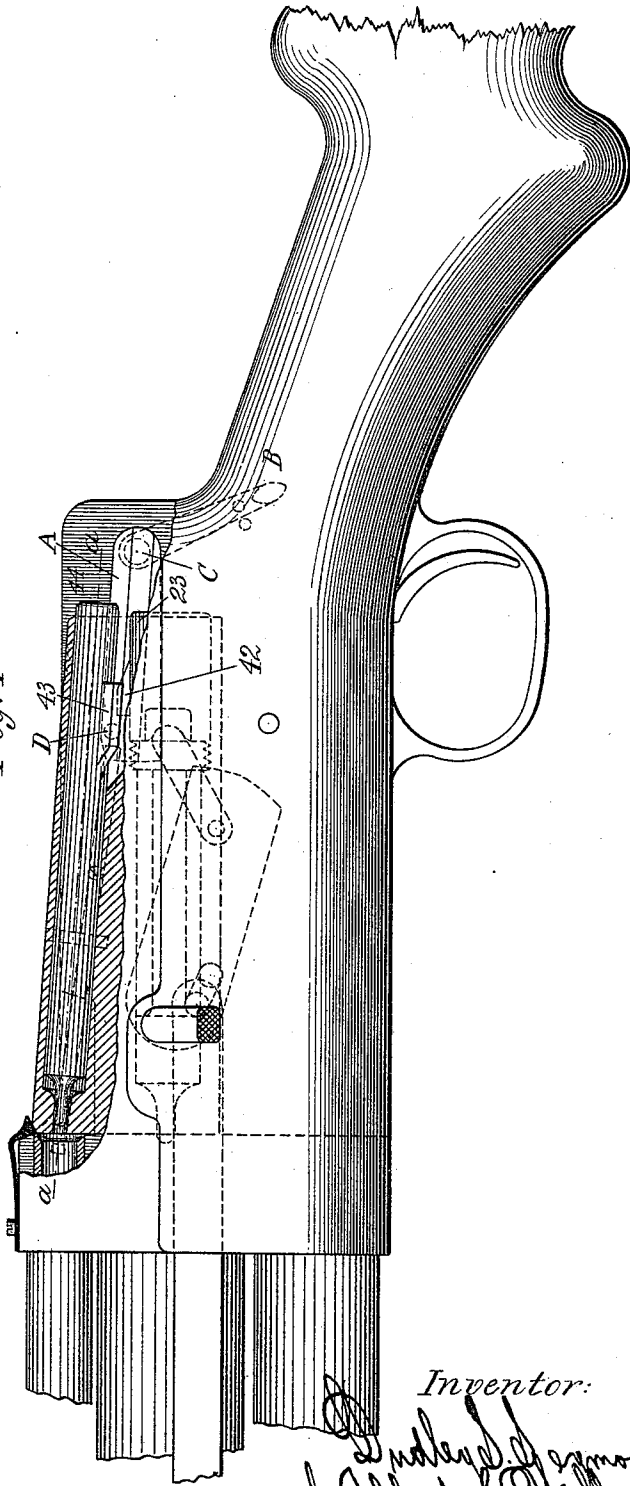


Fig. 1



Witnesses:

J. P. Holt
J. H. Smith

Inventor:

D. S. Seymour
Wm. H. Walker

(No Model.)

2 Sheets—Sheet 2.

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Fig. 4

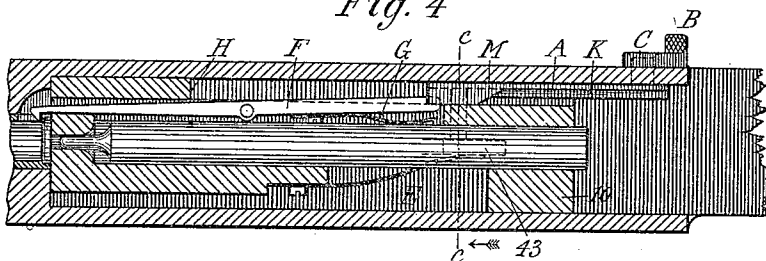


Fig. 5

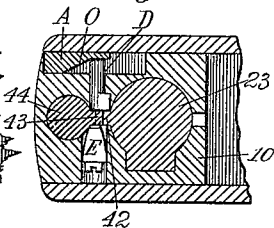


Fig. 6

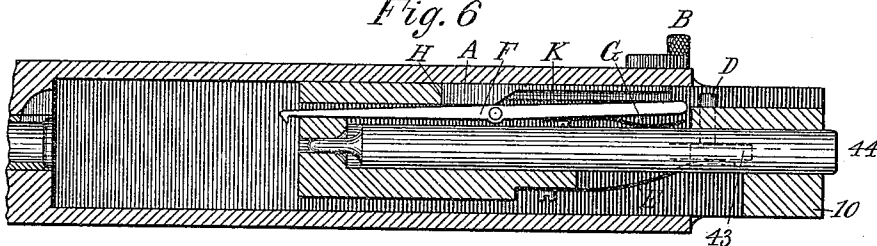


Fig. 7

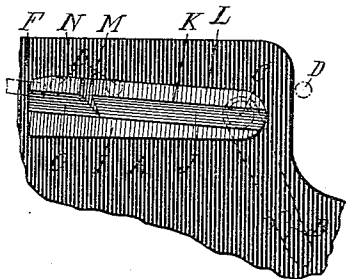


Fig. 8

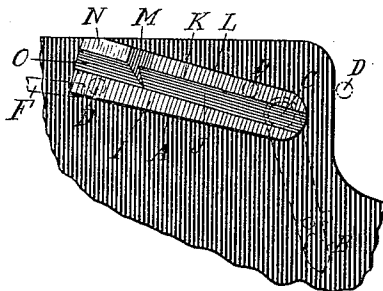


Fig. 9

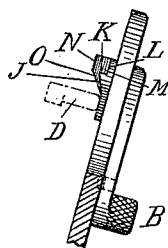


Fig. 10

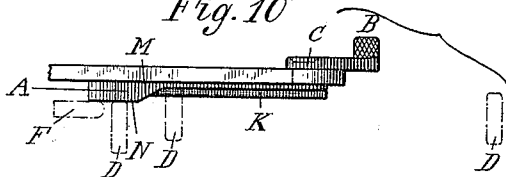
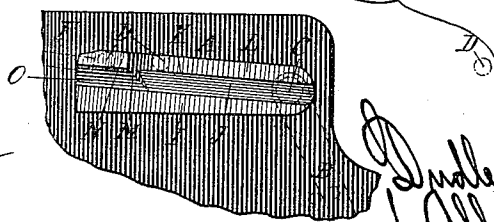


Fig. 11



Witnesses:

Wm. A. Hall
Wm. A. Hall

Inventor:

D. S. Seymour
by Albert E. Walker

UNITED STATES PATENT OFFICE.

DUDLEY S. SEYMOUR, OF HARTFORD, CONNECTICUT, ASSIGNOR OF ONE-HALF TO JOHN JOHNSTON, OF SAME PLACE.

SHIFTABLE FIRING-PIN AND EXTRACTOR FOR FIREARMS.

SPECIFICATION forming part of Letters Patent No. 530,967, dated December 18, 1894.

Application filed May 2, 1894. Serial No. 509,782. (No model.)

To all whom it may concern:

Be it known that I, DUDLEY S. SEYMOUR, of Hartford, Connecticut, have invented a new and useful Improvement in Firearms, of which the following description and claims constitute the specification, and which is illustrated by the accompanying two sheets of drawings.

This invention is a double barrel breech loading fire-arm, which has a magazine loading shot gun barrel, and a hand loaded breech loading rifle barrel on one stock, independently discharged by one lock; and the object of the invention is to combine a rifle and a shot gun, without unnecessary duplication of parts.

Figure 1, of the drawings, is a side view of the receiver, containing the breech block and breech block mechanism; a portion of the front wall of the receiver being broken away, to show a central vertical longitudinal section of the upper part of the breech block, with an upper or secondary firing pin, therein, but turned out of its firing position. Fig. 2, is a plan view, on the horizontal sectional line *a a*, of Fig. 1. Fig. 3, is a vertical section on the line *b b*, of Fig. 2. Fig. 4, is like Fig. 2; except that it shows the upper firing pin and its adjuncts, in the firing position. Fig. 5, is a vertical section on the line *c c*, of Fig. 4. Fig. 6, is like Fig. 4; except that it shows the breech block and its appurtenances carried back to the midway position, instead of being in its closed position. Fig. 7, is a view of a portion of the inside of that wall of the receiver, which is farthest from the eye, in Fig. 1, and shows also the inside of the switch A, when in the position shown in the plan view of Fig. 2. Fig. 8, is like Fig. 7; except that it shows the switch A, when in its position shown in the plan view of Fig. 4. Fig. 9, is an end projection of the parts shown in Fig. 8. Fig. 10, is a plan view of the switch A, and of the portion of the wall of the receiver through which its rock pivot turns; and that figure also shows different positions of other parts, relatively to that switch. Fig. 11, is like Fig. 7; except that it shows one different position of the slide D, relatively thereto.

The firearm indicated in the drawings, is mainly like that which is more elaborately delineated in the drawings and fully described in the specification of application, Serial No. 509,781, for Letters Patent of the United States, filed by me May 2, 1894; and therefore only the distinguishing characteristics of this firearm, as compared with that, need be particularly described in this specification.

The letter A indicates a switch, which is rocked by the arm B, through the rock pivot C. The pivot turns in a horizontal bearing, cut through the side wall of the receiver near its rear end; and the arm is fixed to the pivot, on the outside of that wall; while the rear end of the switch is fixed to the pivot, on the inner side of that wall. The switch has the vertical surfaces I and L, in one vertical plane; and the inwardly inclined plane J, which forms an obtuse angle with the vertical surface I; and the horizontal ledge K, which extends outwardly from the upper edge of the inclined plane J, to the lower edge of the vertical surface L; and the vertical surface N, in a more inwardly vertical plane, than that of the surfaces I and L; and the inclined plane O, which extends from the vertical surface I, inward to the vertical surface N; and the inclined plane M, which extends from the vertical surface L, inward to the vertical surface N, and also extends from the inclined plane J, inward to the inclined plane O.

The slide D has an enlargement on its inner end, as shown in Figs. 3 and 5; and it reciprocates in a transverse seat in the breech block, between the switch A, and one side of the downwardly extending fin 43, of the upper firing pin 44.

The letter E indicates a spring, the fixed end of which is attached to the breech block, and the free end of which presses against the opposite side of the fin 43, so as to carry the upper firing pin into its firing position, whenever the switch allows it to do so.

The letter F, indicates the upper cartridge shell extractor, which is pivoted to the breech block.

The letter G, indicates a spring, between that cartridge shell extractor and some rigid part of the breech block, or its appurtenances.

That spring forces that cartridge shell extractor into engagement with the upper cartridge shell; except when the switch A, forces that cartridge shell extractor out of that engagement, against the resistance of that spring, at the same time that it forces the upper firing pin out of its firing position, against the resistance of the spring E.

The letter H, indicates a rearward face of the breech block 10, for sometimes stopping the backward movement of the breech block, by contact with the forward end of the switch A.

The other devices shown in the drawings are indicated by numerals instead of by letters; and they are the same devices, which are indicated by the same numerals, and are elaborately shown and fully described, in my said application, Serial No. 509,781, and do not form any part of this application.

The mode of operation of this invention is as follows: The upper firing pin 44, is manually turned into alignment with the lower firing pin 23, when the breech block is closed, by turning the arm B, from the position shown in Figs. 1 and 2, to that shown in Fig. 4; for that turning carries the switch A, from the position shown in Fig. 3, to that shown in Fig. 5, and thus permits the spring E, to force the fin 43, of the upper firing pin, from its oblique position shown in Figs. 1, 2, and 3, to its downward position shown in Figs. 4 and 5, and thus into alignment with the fin 42, of the lower firing pin, so that when the latter is shot or driven forward, the forward face of its fin 42, strikes the rearward face of the fin 43, and forces the point of the upper firing pin 44, into the base of the rifle cartridge; and the upper firing pin is manually turned out of alignment with the lower firing pin again, if desired, by turning the arm B, from the position shown in Fig. 4, to that shown in Figs. 1 and 2; for that turning carries the switch A, from the position shown in Fig. 5, to that shown in Fig. 3, and thus forces the fin 43, from its downward position, shown in Figs. 4 and 5, against the resistance of the spring E, to its oblique position shown in Figs. 1, 2 and 3. The upper firing pin 44, is automatically turned out of alignment with the lower firing pin 23, by the switch A, whenever the breech block 10, is moved forward from its midway position in Fig. 6, or from a position more open than that, to its closed position in Fig. 4. In that midway position, the switch A, occupies the position shown in Figs. 6 and 8, with its forward end stopping the breech block 10, from further backward movement, by its contact with the face H, of the breech block; but if, when the breech block is carried backward, the switch A, is in the position shown in Fig. 7, that part of the breech block passes backward over it, to a more open position than that shown in Fig. 6. If the switch A, is in the position shown in Fig. 8, when the breech block is moved forward to its closed position, that movement

carries the slide D, forward from its right hand position in Fig. 8, to and along the vertical surface L, of the switch A, and moves that switch downward from its position shown in Fig. 8, to that shown in Fig. 7; because the outer end of the slide D, is in engagement with the ledge K, of the switch A. In the course of that forward movement of the slide D, its outer end reaches the inclined plane M, of the switch A, at the place of the midway location, of the slide D, in Fig. 7, and then rides up that inclined plane, to the vertical surface N, of that switch, at the place of the left hand location of the slide D, in Fig. 7. Thus the inclined plane M, forces the slide D, into the position shown in Figs. 2 and 3; and that slide turns the fin 43, of the upper firing pin 44, against the resistance of the spring E, out of alignment with the fin 42, of the lower firing pin.

If the switch A, is in the position shown in Figs. 7 and 11, when the breech block is moved forward to its closed position, from its most open position; that movement carries the slide D, forward from its right hand position, in Fig. 11, to and along the vertical surface L, of the switch A, to the place of the midway location of the slide D, in Fig. 11, and then the outer end of that slide rides up the inclined plane M, to the vertical surface N, of that switch, at the place of the left hand location of the slide D, in that figure. Thus the inclined plane M, of the switch A, automatically turns the upper firing pin out of alignment with the lower firing pin, as before; but the slide D, does not, in this case, move the switch A, downward from its position shown in Fig. 8, to that shown in Fig. 7; because that switch was already in the latter position, before the forward movement of the breech block began.

The cartridge shell extractor F, is taken out of engagement with the rim of the cartridge shell, by the inclined plane O, of the switch A; whenever that switch is turned from its position in Fig. 8, to its position in Fig. 7, either by the hand of the gunner, turning the arm B, or by means of the slide D, acting upon the ledge K, of the switch A, as above described.

If the switch A, is in the position shown in Fig. 11, when the breech block is moved backward from its closed position; the outer end of the slide D, passes from its left hand location in Fig. 11, on the vertical surface N, down the inclined plane M, to its midway location, in that figure, on the vertical surface L, and thence backward along that surface, and afterward away from the switch, to its right hand location in Fig. 11; but if the switch A, is in the position shown in Fig. 8, when the breech block is moved backward from its closed position, that movement carries the outer end of the slide D, from its left hand position in Fig. 8, upon the vertical surface L, diagonally across the inclined plane J, of the switch A, and over the ledge

K, thereof, to its midway position on the vertical surface L, and still farther, to the right hand position of that slide, which is shown in Fig. 8.

5 In the drawings, the switch A, is shown as adjusted to manually turn the upper firing pin out of alignment with the lower firing pin, and to manually put the cartridge shell extractor out of engagement with the cartridge
10 shell; while the springs E, and G, reverse those operations respectively; but the switch A, may be adjusted to manually turn the upper firing pin into alignment with the lower firing pin, and to manually put the cartridge
15 shell extractor into engagement with the cartridge shell, while the springs E, and G, reverse those operations respectively, and, in either case, the functions of the springs E, and G, may be performed by one spring, ad-
20 justed to do the work of both.

That function of the switch A, which consists in manually turning the upper firing pin 44, into or out of alignment with the lower firing pin; and in manually putting
25 the cartridge shell extractor F, into or out of engagement with the cartridge shell, is performed by the inclined plane O, of that switch; and therefore other features of that switch are not essential to claim one; and in respect
30 to that claim, that inclined plane may be appurtenant to a reciprocating slide, instead of to a rocking arm, like the switch A.

The vertical surfaces I and L, of the switch A, are not essential to the performance of any
35 of its functions; for the outward motion of the slide D, is limited by the enlargement of its inner end, so that its outer end cannot be forced farther outward than the plane of those vertical surfaces, even if they are ab-
40 sent; and the enlargement of the slide D, may also be absent, and its function be performed by some other obvious mechanical device.

The switch A is available not only for moving a firing pin upon its axis, into and out of
45 its firing position; but is likewise available for moving a firing pin, into and out of a firing position, laterally; and, in either case, the firing pin thus moved, may be moved into and

out of alignment with another firing pin, or 50 into and out of alignment with a hammer.

I claim as my invention—

1. The combination of a firing pin, which is movable into and out of a firing position; and a cartridge shell extractor, adjacent to
55 the firing pin, and which is movable into and out of engagement with the adjacent cartridge shell; and a cam or inclined plane, adjacent to that firing pin and that cartridge shell ex-
60 tractor, and which moves them into or out of such position and engagement respectively, by acting on each separately and not through the other; and one or more springs oppositely
65 located, and which move the firing pin and cartridge shell extractor in the opposite direction; all substantially as described, in that be- half.

2. In a gun mechanism, adjacent to a firing pin; the switch A; combined with the arm B; and the rock pivot C; and having the plane
70 J, inclined crosswise of the switch; and having the ledge K, extending outward from the most inner boundary of the inclined plane J; and having the plane N, situated more in-
75 wardly than the outer boundary of the ledge K; and having the plane M, inclined inwardly, from a line more outward than the inner boundary of the ledge K, to the plane N; and having the plane O, inclined inwardly
80 from a line as outward as the most outward boundary of the inclined plane J, to the plane N; all substantially as described.

3. The combination of a firing pin, which is movable into and out of a firing position; with a rocking switch, having the inclined
85 plane J, the ledge K, the plane N, and the inclined plane M, and the inclined plane O, for moving that firing pin; and with the arm B, and the pivot C, for rocking the switch; and
90 with the slide D, between the firing pin and the switch, for transmitting motion from the switch to the firing pin; all substantially as described, in that behalf.

DUDLEY S. SEYMOUR.

Witnesses:

ALBERT H. WALKER,
WILLARD EDDY.