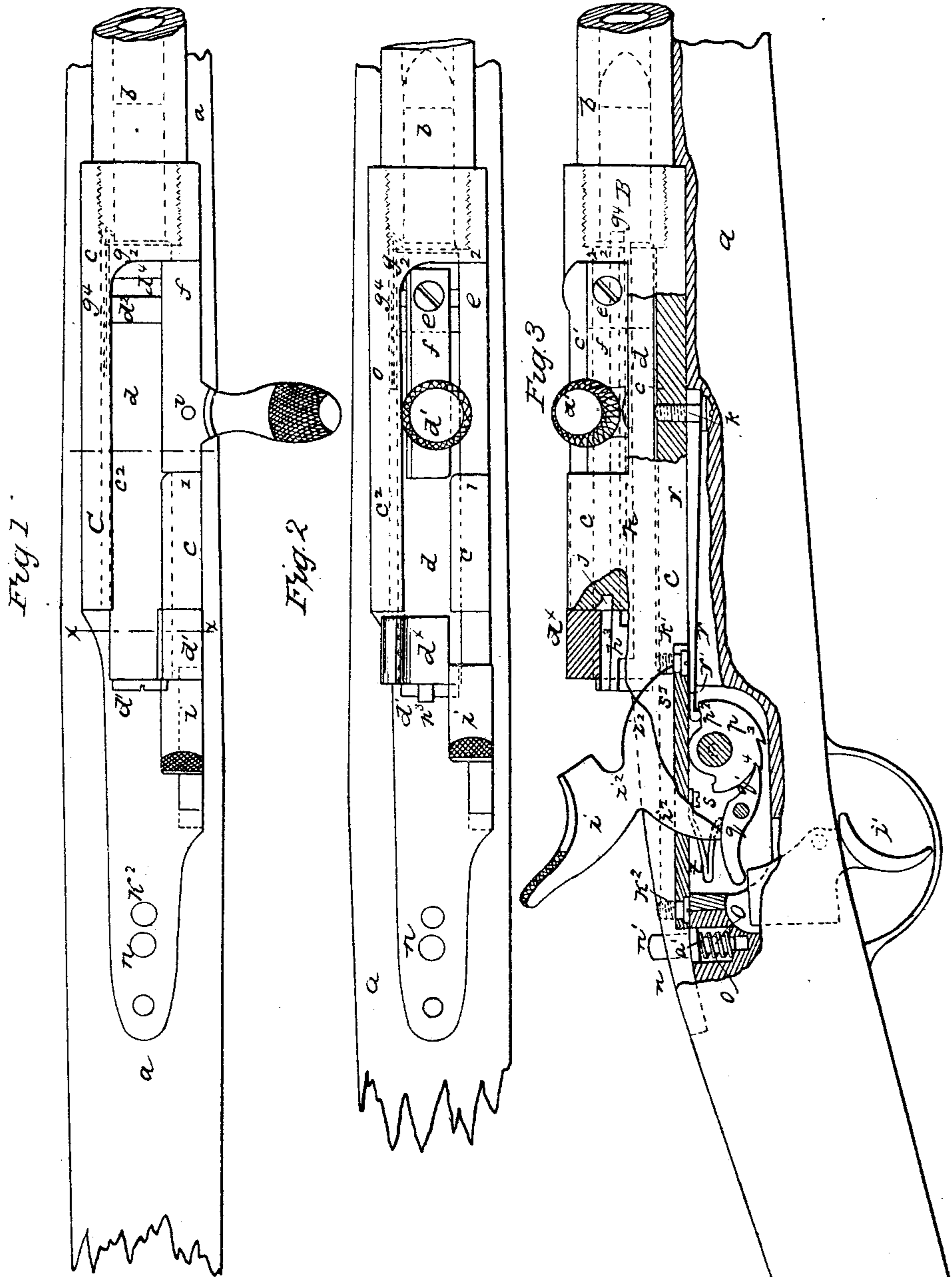


S. REMINGTON.

Breech Loader.

No. 86,690.

Patented Feb. 9, 1869.



Witnesses
William Smith
Attk. Plousser.

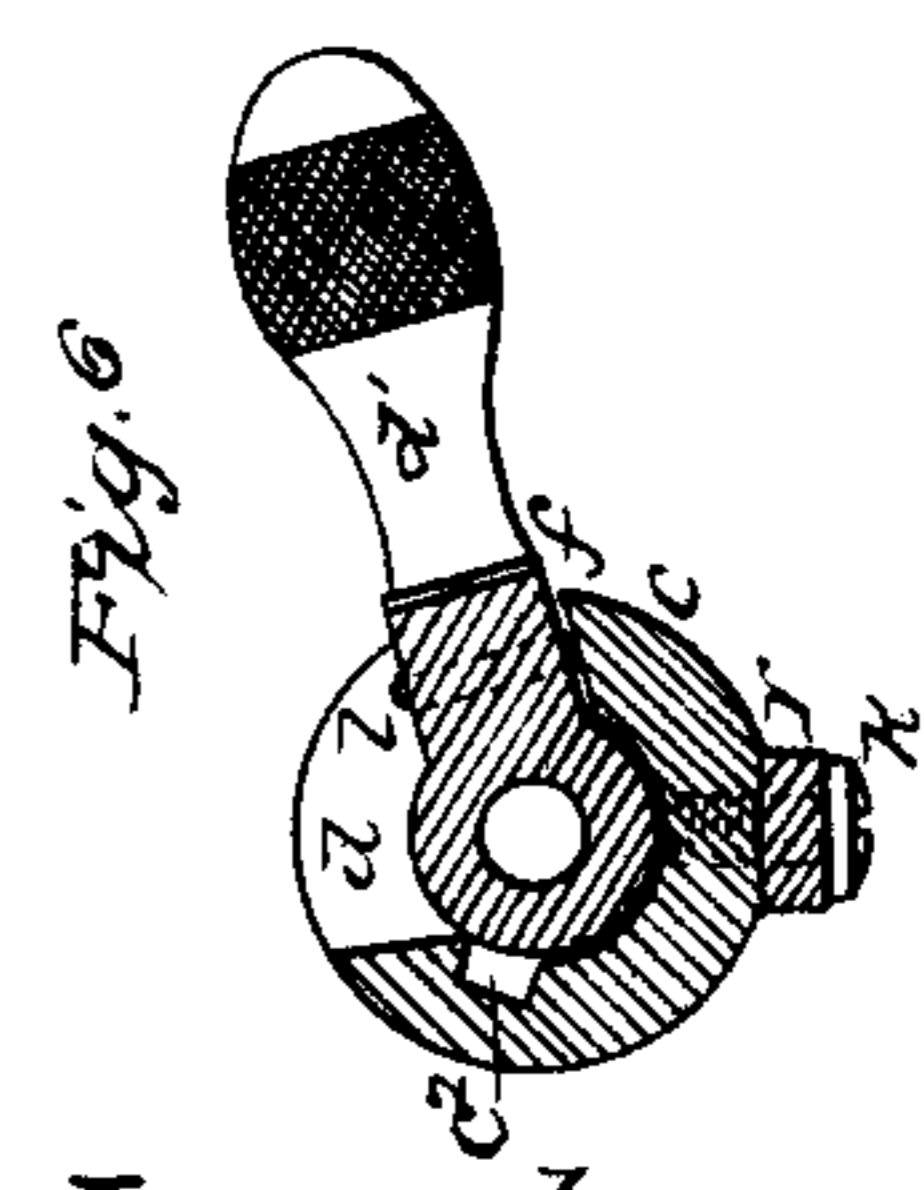
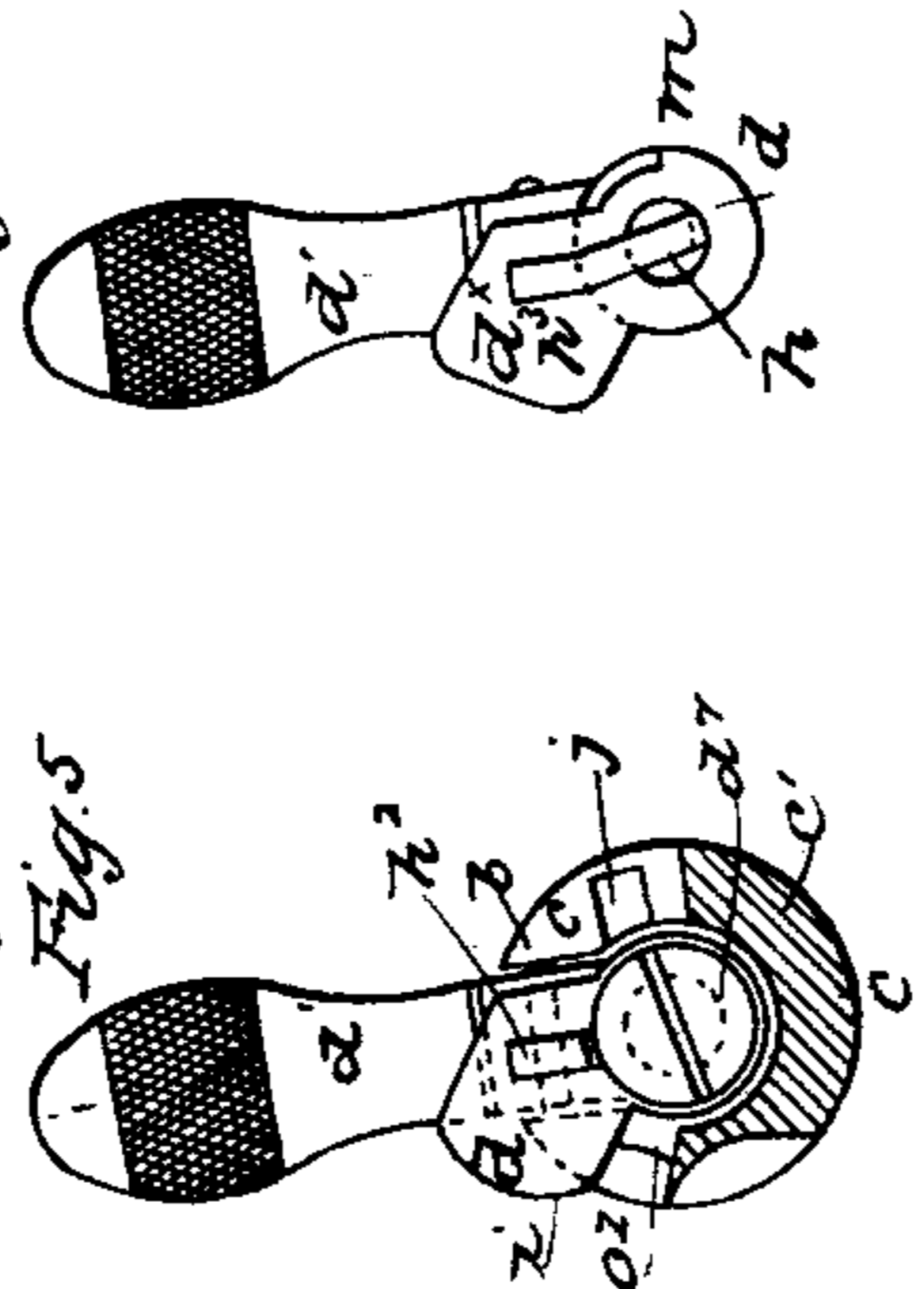
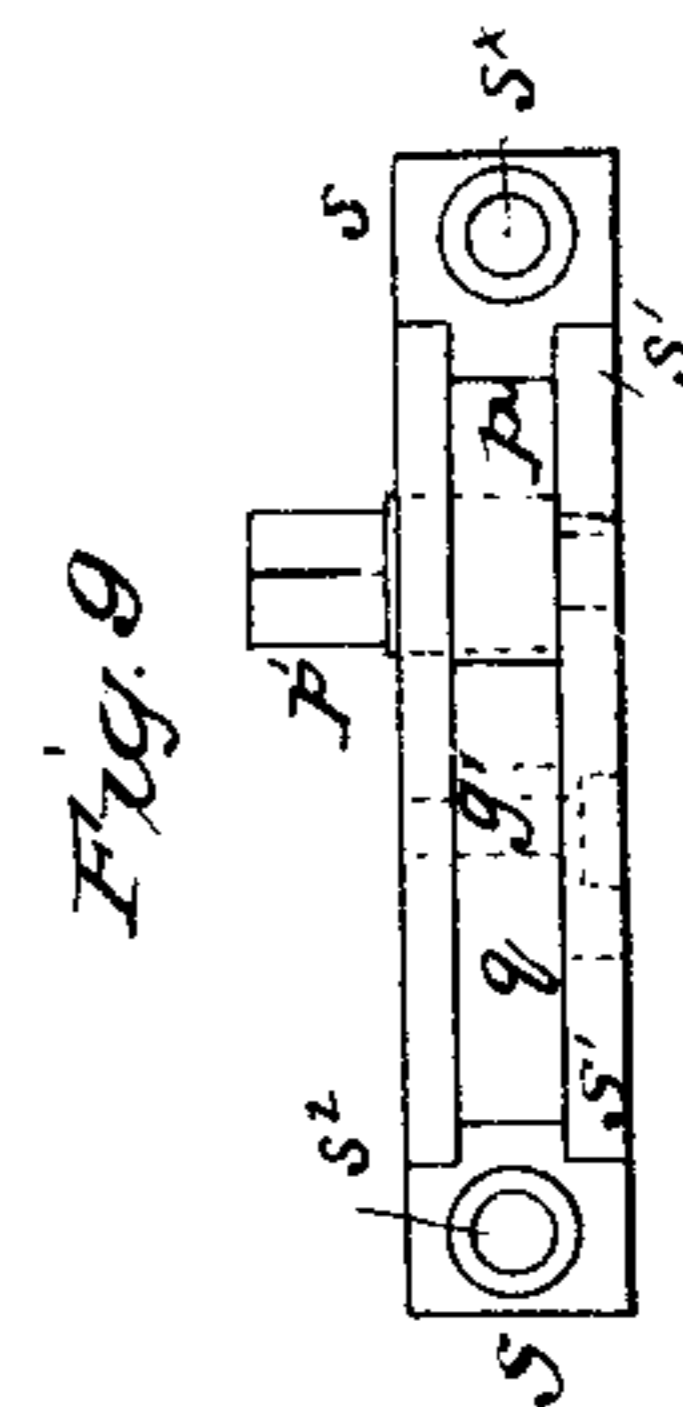
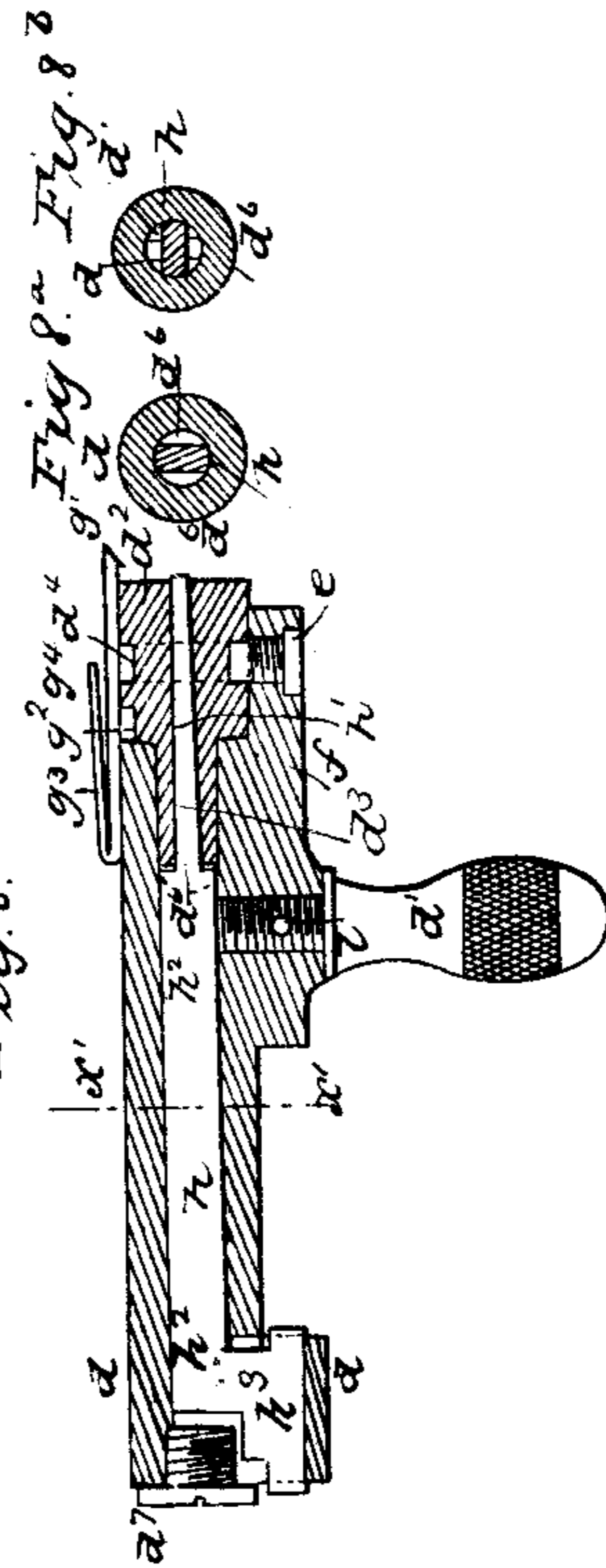
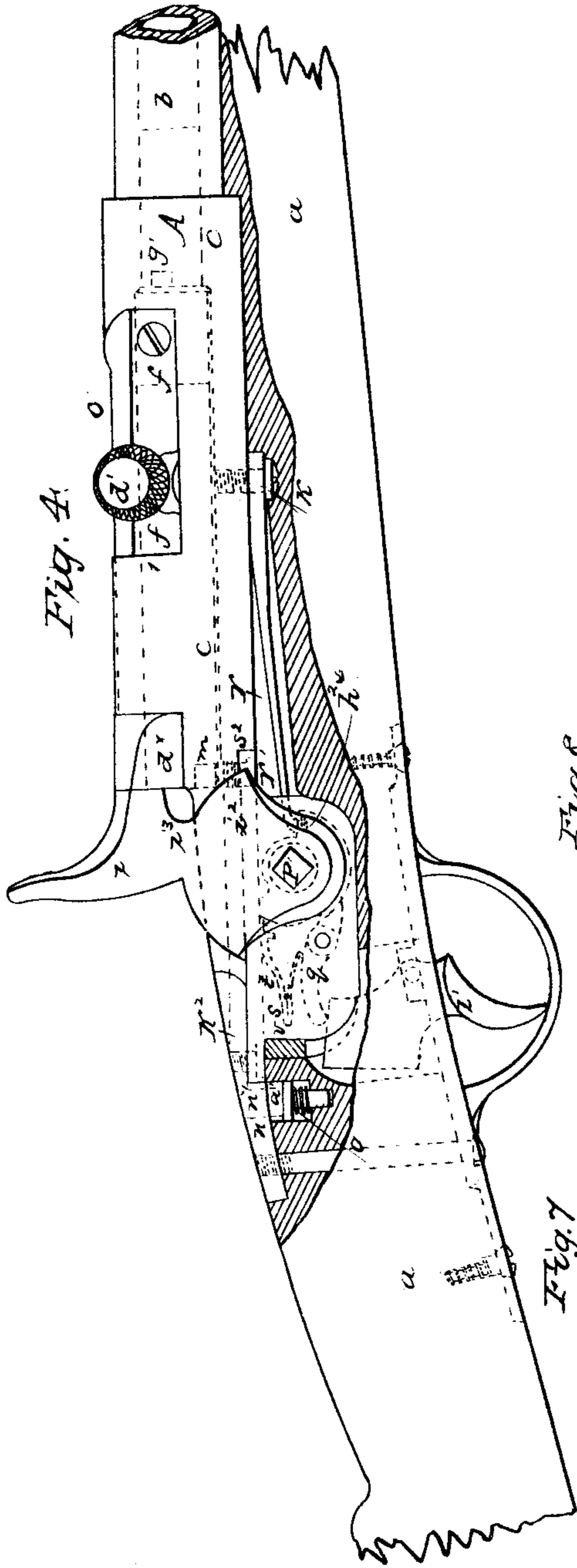
Inventor
Samuel Remington

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 William Smith
 Wm. H. H. H. H.

Inventor
 Samuel Remington

United States Patent Office.

SAMUEL REMINGTON, OF ILION, NEW YORK.

Letters Patent No. 86,690, dated February 9, 1869.

IMPROVEMENT IN BREECH-LOADING FIRE-ARMS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, SAMUEL REMINGTON, of Ilion, in the State of New York, have invented certain new and useful "Improvements in Breech-Loading Fire-Arms, parts of which improvements are applicable to other fire-arms;" and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification.

The said improvements relate to breech-loading fire-arms in which the breech-aperture is closed by a cylindrical bolt, fitted to turn and slide in a suitable chamber in line with the barrel, and in which the cartridges are exploded by means of a pin or rod carried by the said bolt, and actuated by the cock, or hammer, of a lock, secured to the under side of the breech-shoe, or fixed in the stock, in the ordinary manner.

The said improvements consist chiefly in the novel construction of the firing-pin, and in the peculiar arrangement of the same, in combination with the bolt and breech-shoe, whereby the danger of accidentally exploding the cartridge, either by pulling the trigger, or otherwise striking the firing-pin, is entirely prevented.

The said improvements also consist in the novel mode of preventing the binding or sticking of the bolt in its chamber, in the devices for holding the said bolt in any position in which it may be adjusted, and preventing its slipping accidentally from such position, in whatever way the arm may be carried; also, in the peculiar construction of a stop, which prevents the accidental removal or escape of the bolt from its chamber, and, at the same time, allows it to be readily removed, when required, for cleaning or other purposes.

The said improvements also consists in the novel arrangement of the parts of an ordinary gun-lock, for increasing the strength and durability of the same, and adapting such locks more perfectly to the purposes of my invention.

The said improvements consist, lastly, in the combination of these novel devices, or parts of the same, with each other, and with the other parts of the arm to which they are applied.

Description of the Drawings.

Figure 1 is a plan of part of a rifle, with my improvements applied thereto, showing the breech closed.

Figure 2 is a plan of the same, showing the position of the parts when adjusted to allow the arm to be carried without danger of disarranging the bolt or cartridge.

Figure 3 is a side view, partly in section, showing the parts in position for discharging the said rifle.

Figure 4 is a side view of the same, showing the parts in the position in which they are thrown by discharging the rifle.

Figure 5 is a transverse section on the line *x x*, fig. 1, with parts adjusted for drawing back the bolt.

Figure 6 is a transverse section on the line *y y*, fig. 1.

Figure 7 is an end view of the bolt detached.

Figure 8 is a longitudinal section of the bolt.

Figures 8^a and 8^b are sections of the said bolt on the line *x' x'*, fig. 8.

Figure 9 is an edge view of my improved lock detached.

Like letters indicate the same parts in all of the figures.

The stock *a* and barrel *b* may be constructed in any ordinary manner, and the barrel may be secured to the breech-shoe *c* by a screw-thread, or by other suitable means.

The bolt *d* is fitted to slide and turn freely in the chamber *c* of the said shoe, and is provided with a handle, *d*¹, whereby it can be readily and conveniently manipulated.

The bolt *d* is provided with a loose piece or head, *d*², which is secured to the bolt in such a manner as to slide endwise with the said bolt, but not to turn with it.

I prefer to connect the said loose piece to the bolt in the manner shown in the drawings, and more clearly illustrated in the sectional view, fig. 8.

The piece *d*² is provided with a shank, or extension, *d*³, which fits so as to turn freely in the bore, or central perforation, of the bolt.

The point of the screw *e*, which projects through the piece *f*, is fitted into the circular groove, or channel, *d*⁴, in the piece *d*², and prevents its removal from the bolt, while it permits the latter to turn freely, independently of the piece *d*².

The latter is kept from rotating with the bolt, as the same is turned in its chamber, by means of the extractor *g*, which is attached to the loose piece *d*², and slides in the longitudinal groove, or channel, *c*², as the bolt moves endwise in the chamber *c*¹.

The piece *f* forms a stop and guide for the bolt *d*, as in other arms of this class.

The said piece, when the bolt is adjusted as in fig. 1, fills the space between the shoulders 1 and 2 of the shoe *c*, and prevents the recoil of the bolt at the time of firing.

I prefer to curve the shoulder 2 at the left-hand corner of the shoe, to prevent the striking of the cartridges with the end of the bolt in closing the breech, and to form a cam, or wedge, to start the shells, in extracting them from the chamber *A*.

The striking or firing-pin *h* extends through the centre of the bolt *d* and piece *d*², its rear end being arranged in the proper position to be struck by the hammer *i*, when the trigger *i*¹ is pulled.

The said firing-pin is preferably formed of a flat piece of steel, its forward end, *h*¹, being reduced into a circular form, to fit the perforation in the piece *d*².

The web or flat part *h*² is fitted to work easily in the bore of the bolt *d*, and, at its rear end, is provided with a lateral pin or arm, *h*³, fitted to slide through the projecting piece, *d*⁴, at the side of the bolt *d*.

This arm or pin h^3 receives the blow of the hammer, and is so formed and arranged, in relation to the recess, j , at the rear of the shoe c , as to prevent any possibility of exploding the cartridge by prematurely pulling the trigger.

When the breech is properly closed, and the bolt d is secured by turning the handle d^1 into the position shown in fig. 1, the pin h^3 lies opposite the recess j , and, if the trigger is then pulled, the pin h will be driven forward, and the cartridge will be exploded; but, if the trigger should be pulled, and the hammer i thereby released before the bolt is properly adjusted, the pin h^3 , resting against the solid part of the rear surface of the shoe, will be stopped, and the firing-pin will not be driven forward.

The upper side of the recess j is curved or inclined, so as to act as a wedge, or cam, and force the firing-pin back, when the bolt is turned to the left hand.

By the peculiar construction and arrangement of the pin h and piece d^2 , I also prevent all danger of exploding the cartridge by accidentally striking the end of the firing-pin by any object or body, when the said pin is turned away from the hammer, as in figs. 2 and 5, in which position the pin is more exposed to the chance of being so struck.

This purpose is effected by fitting the shoulder h^* of the pin h between the two jaws, d^3 , on the end of the shank d^3 , the said jaws being formed in such a manner that they act as a cam upon the said shoulder as the bolt is turned in its chamber.

When the said bolt is adjusted into the position shown in fig. 1, the recess between the jaws lies parallel with the shoulder h^* , as shown in fig. 8^a, and allows the pin to move forward; but, when the bolt is in the position shown in fig. 5, the said recess and shoulder cross each other, as shown in fig. 8^b, the shoulder resting against the top of the jaws d^3 .

If the pin h should now be struck, the force of the blow will be expended upon the piece d^2 , the pin being thereby stopped, and the explosion of the cartridge prevented.

In order that the arm may be carried without danger of disarranging the bolt, or allowing the cartridge to fall out of the charge-chamber, I provide the means for locking the bolt securely in the position illustrated in fig. 2.

For this purpose, I form the notch m in the end of the bolt d , to receive the nose of the cock, or hammer, which is let down into the said notch.

The bolt is then securely held, and cannot be turned, or drawn back in its chamber, till the hammer has been set to full or half cock.

The pin h may be readily removed from the bolt d , by taking out the screw d^4 .

By referring to fig. 8, it will be seen that the extractor g is provided with a hook, or claw, g^1 , which is formed in such a manner as to slip easily over the flange, or rim, of a cartridge-shell lying in the charge-chamber Λ , and to take a firm hold upon the same, and bring it from the said chamber, when the bolt is drawn back.

I prefer to secure this extractor to the piece d^2 by the dovetail-piece g^2 , which fits a corresponding recess in the piece d^2 .

This mode of attachment allows the extractor to be conveniently removed and replaced when necessary.

The spring or bar g^3 of the extractor is lengthened, and turned over, to form another spring, g^4 , which bears against the surface of the longitudinal groove, or channel, e^2 , and, without diminishing its facility of manipulation, causes just sufficient friction to keep the bolt d in any position in which it may be adjusted, and prevent its sliding accidentally endwise in its chamber in handling the arm.

Instead of forming this friction-spring on the end of the extractor, I may, if desired, place it on any other convenient part of the bolt or chamber.

To prevent the contact of the entire surfaces of the bolt d and chamber c^1 with each other, and the liability, which would thereby be incurred, of the sticking or binding of the bolt in its chamber, and to cause the said bolt, at all times, to work with great ease and freedom in the said chamber, I fit the bolt to bear upon the projecting ends of the screws $k^1 k^2$, which extend through the bottom of the shoe c .

I also prevent contact, and diminish the friction between the stop-piece f and the sides of the shoe c , by means of studs, or projections, on the said piece, or on the sides of the shoe.

The pin l , which secures the handle d^1 , may be conveniently extended at each end for this purpose, as shown in figs. 5 and 6.

To prevent the accidental sliding or slipping of the bolt d from its chamber, I prefer to employ the spring-stop n .

While this stop is in the position shown in fig. 3, its head, n^1 , projects above the tail of the shoe, and prevents the escape of the bolt, the stop being kept in this position by the spring o in the recess a^1 in the stock.

When it is desired to remove the bolt from its chamber, this stop may easily be depressed, as shown in fig. 4, in which position it allows the bolt d to slide over its head.

If desired, instead of this spring-stop, the screw k^2 may be lengthened, to serve a like purpose.

My improved lock is provided with a notched tumbler, p , and sere, q , which operate, in combination with a main-spring, r , as in ordinary gun-locks.

The arrangement of these parts is, however, peculiar, and enables me to obtain several advantages which I could not otherwise obtain.

The parts of this improved lock are enclosed in the box s , whose side, s^1 , is made removable.

The axle, or fulcrum-pin, p^1 , of the tumbler p , and also the centre-pin, q^1 , of the sere, are supported in bearings in both sides of the box s .

The sere-spring t is secured to the under side of the plate s^2 , instead of to the side of the lock-plate, in the ordinary manner.

By this method of construction, I am enabled to place the lock in the centre of the stock a , and secure the same to the under side of the shoe c .

Its attachment to the said shoe is effected by the screws $k^1 k^2$, which pass through the holes s^* , and whose ends, as already described, form anti-friction studs, for the bolt d to work upon.

The main-spring r is a flat piece of steel, nearly straight, and is secured, by the screw k , to the under side of the shoe c , with its free end, r^1 , resting upon the shoulder p^2 of the tumbler p .

This tumbler is formed with the ordinary notches, 3 and 4, to receive the nose of the sere q , and hold the hammer at half or full cock.

My improved lock is much cheaper of construction, and stronger, than an ordinary lock, and, being placed in the centre of the stock, is more effectually protected from injury or derangement than if it were arranged at the side.

The main-spring is cheaper and more durable than those bent or doubled in the ordinary form, and secured to the side of the lock-plate.

The back of the box s lies in contact with the recoil-plate r , which is fixed in the stock, and thereby forms a substitute for the stud ordinarily employed to prevent the recoil.

The hammer i is formed with its outer surface plane or flat.

The curved portion or segment i^2 turns in the curved recess formed in the side of the shoe, and does not project laterally beyond the surface of the shoe.

This curved portion fills up the space which would otherwise be left at the sides of the neck i^3 .

The hammer is firmly secured upon the end of the pin p^1 , which may be either square, as shown, or otherwise conveniently formed for the purpose.

If desired, an ordinary side lock may be used with the other parts of my improvements, instead of the improved lock above described.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. Constructing a firing-pin, h , with a side arm or pin, h^3 , passing through the projection, d^* , on the rear end of the bolt d , and so arranging it, in combination with the hammer i , and with the solid part of the rear of the shoe c , and with the recess, j , therein, and in combination with the jaws, d^b , on the shank of the loose piece d^2 , that the firing-pin h can only be driven forward, to explode the cartridge, when the breech is properly closed and secured, substantially as set forth.

2. Preventing immediate contact between the bolt d and the surfaces of the shoe c , by means of studs, or

projections, upon the bolt or shoe, substantially as set forth.

3. Preventing the accidental slipping or disarrangement of the bolt d in its chamber, by means of the spring g^1 , or other spring, substantially as set forth.

4. The notch m , in the end of the bolt d , arranged upon the said bolt, and in relation to the hammer, in such a manner that, when the latter is let down into the said notch, the arm may be carried in any position without disarranging the bolt or cartridge.

5. The adjustable spring-stop n , constructed, arranged, and operating, in combination with the bolt d , substantially as set forth.

6. In a breech-loading fire-arm whose breech is closed by a sliding bolt, the combination of the devices which allow the said arm to be readily discharged when properly adjusted, but which otherwise prevent its being discharged, with the means for reducing the friction of the bolt, and preventing the displacement of the same, and of the cartridges, substantially as set forth.

SAMUEL REMINGTON. [L. S.]

Witnesses:

WILLIAM SMITH,
WILH. MAUSER.