

(No Model.)

2 Sheets—Sheet 2.

A. SILL, Dec'd.
E. M., A. H. & C. SILL, Executors.
BREECH LOADING FIREARM.

No. 569,244.

Patented Oct. 13, 1896.

Fig. 4.

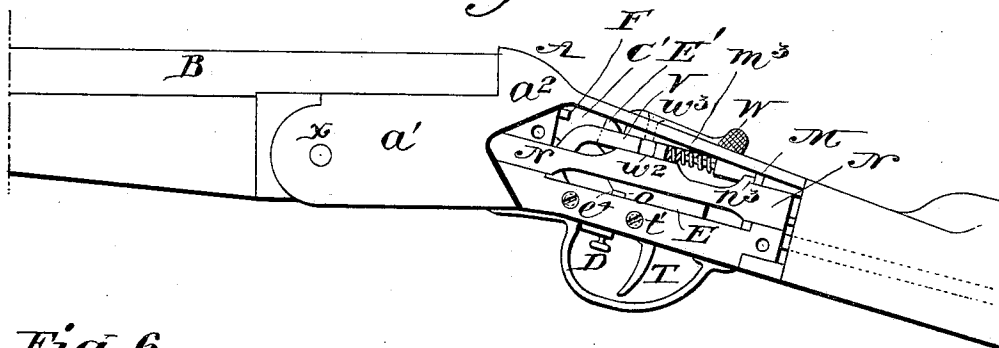


Fig. 6.

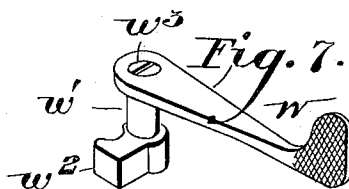
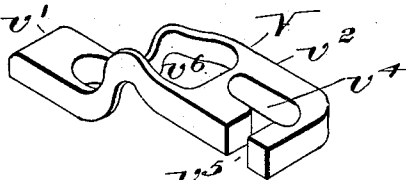


Fig. 7.

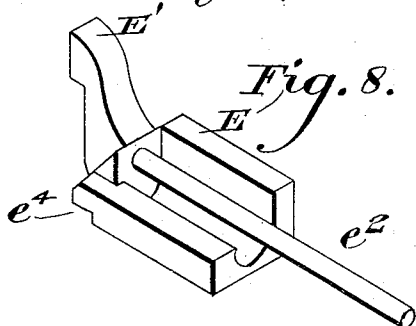


Fig. 8.

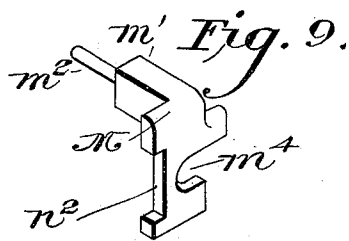


Fig. 9.

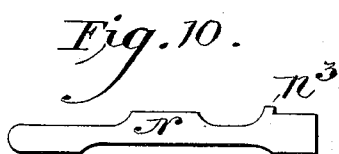


Fig. 10.

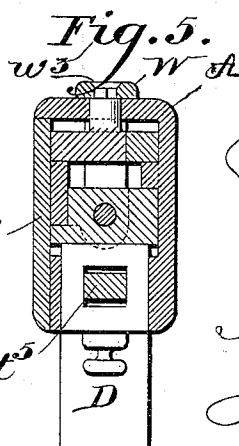


Fig. 5.

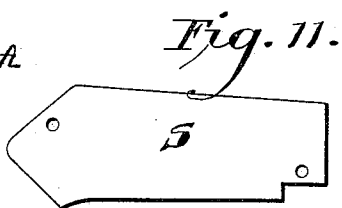


Fig. 11.

Witnesses:

Jesse B. Heller.

H. Alford Boggess

Inventor:
Alfred Sill,
per
Joshua Pusey,
attorney

UNITED STATES PATENT OFFICE.

ALFRED SILL, OF PHILADELPHIA, PENNSYLVANIA; EDWIN M. SILL, ALFRED H. SILL, AND CLARENCE SILL EXECUTORS OF SAID ALFRED SILL, DECEASED.

BREECH-LOADING FIREARM.

SPECIFICATION forming part of Letters Patent No. 569,244, dated October 13, 1896.

Application filed March 30, 1893. Serial No. 468,278. (No model.)

To all whom it may concern:

Be it known that I, ALFRED SILL, a citizen of the United States, residing at the city and county of Philadelphia, and State of Pennsylvania, have invented certain new and useful Improvements in Breech-Loading Firearms, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, of which—

Figure 1, Sheet 1, is a side elevation in position for firing, the side plate of the breech-frame being removed. Fig. 2 is a similar view showing the position of the parts after firing. Fig. 3 is a vertical longitudinal section in position for loading. Fig. 4, Sheet 2, is a side elevation similar to Fig. 1, with the retaining-plate in place. Fig. 5 is a section on line *xx*, Fig. 1. Figs. 6, 7, 8, 9, 10, and 11 are certain details, enlarged, of the mechanism detached.

This invention relates to that class of breech-loading firearms wherein the barrel is pivoted near its rear end on the breech-frame or an extension thereof and is "broken" or depressed on its pivot in order to insert the cartridge.

The object of the invention is to simplify and improve the construction and operation of arms of this class, with the special view of providing a simple and efficient mechanism for cocking the gun by the act of depressing the barrel on its pivot in position for loading; also a construction whereby the several parts of the mechanism may be readily taken apart and replaced by unskilled persons with ordinary appliances.

The invention also embraces certain details of construction which will be hereinafter duly pointed out.

Referring to the accompanying drawings, which represent that which I believe to be the best construction of the invention, B is the barrel, which is pivoted in the usual manner on a pin *x* in a forward extension *a'* of the breech-frame A.

F is the firing-pin, which is adapted to play longitudinally in an aperture in the transverse head *a*² of the breech-frame, its rear end projecting normally a short distance into the chamber C of the frame A, as shown.

This pin is retained in place and its play limited by means of a screw-pin in the side of the breech-frame, the inner end of which pin enters a longitudinal slot in the side of said firing-pin. As this construction is usual and well known I have not deemed it necessary to show the same in the drawings.

E is a bolt, hereinafter termed the "firing-bolt," which is preferably of the form shown more clearly in Fig. 8 and carries a fixed cylindrical rod *e*². Its front end is a block or head *E'*, and the bolt is arranged to slide within the chamber C. It is, as hereinafter explained, controlled by a normally open spiral spring *e*³, encircling the rod, the rear end of said spring having a bearing against the front side of an angular piece M, Fig. 9, and its forward end against the bolt-head *E'*. In the under side of this bolt-head is a transverse notch or cut-away portion *e*⁴.

O is a sear, which is adapted to slide about vertically in an aperture in the under side of the breech-frame.

T is the trigger, pivoted on a pin *t'* and controlled by a flat spring *t*², the rear end of which is held firmly by a set-screw *t*³, and its free end bears upon a ledge or offset *t*⁴ of the trigger. The end of the forwardly-projecting or short arm *t*⁵ of the trigger engages a notch *o'* in the side of the sear.

D is a dog pivoted at one end on a screw *d'* on the under side of the breech-frame in front of the lock-pin. This dog is adapted to be swung around so that its free end may come beneath the lock-pin when desired to prevent the trigger from being drawn back, as hereinafter described.

P is a crank-arm pivoted on a screw-pin *p'* in the lower part of the breech-frame, the free end of which arm projects up through a slot into the chamber C in front of the bolt-head *E'*.

H is a bar or lever, the forward end of which is pivoted on a pin *h'* in a downwardly-extending lug *h*² on the under side of the barrel, or rather a projection *b'* thereon. This lever lies in a space or chamber *r* between the end of the barrel or its projection *b'* and the extension *a'* of the breech-frame, while its rear or free end passes through an opening

r' in the front wall of the breech-frame, leading into the chamber C, and is arranged to bear against an offset p^2 of the crank-arm P.

V is a bent plate or bar adapted to slide within the chamber C, and is slotted or bifurcated for some distance about midway, as seen in Fig. 6, the bifurcations passing on the side, respectively, of the firing-bolt head E' . The lower part or limb v' of this bar passes through an aperture in the front wall of the breech-frame, its end projecting normally a short distance beyond the latter and registering with a socket v^3 in the end of the projection b' of the barrel. The upper limb v^2 of the bar which extends above and to the rear of the bolt-head E' has an aperture v^4 , into which opens a lateral slot v^5 , as fully seen in Fig. 6.

W is a thumb-lever, to the under side of which is fixed a stud w' , which has at its free lower end a lateral projection w^2 . The stud is entered into the aperture v^4 of the locking-plate, and the lug or projection w^2 occupies the slot v^5 of said plate. The stud and thumb-lever are held together when the parts are in position by means of a screw w^3 , which passes through the forward end of the lever and extends through an aperture in the top of the breech-frame. (See Fig. 7.)

M is an angular or somewhat L-shaped piece (seen detached in Fig. 9) which is adapted to set in the rear of the frame, and has at the front end of its upper or horizontal limb m' a rod m^2 , which, when the piece is in position, projects toward the rear end of the upper limb of the barrel-locking plate V. Upon the rod is a spiral spring m^3 whose forward end presses against and controls said locking-plate.

Having now described the construction, I shall proceed to explain the operation of the mechanism of my invention.

Assuming that the parts occupy the positions shown in Fig. 2 and it is desired to load the gun, the barrel-locking bar V is first retracted out of engagement with the barrel-socket v^3 by pressing aside the end of the thumb-piece W, said bar being forced back against the stress of the spring m^3 by the leverage of the projection w^2 against the side of the slot v^5 . Thereupon the barrel will turn upon its pivot by its gravity or by pressure of the hand, and it and the mechanism actuated by its movement will assume the positions shown in Fig. 3, as follows: The firing-pin F will be forced back and its rear end project into the chamber C by the end of the lower side of the barrel as it rises in turning on its pivot, impinging against the projecting rounded extremity of the pin. At the same time the lever H will be forced back and its free end in contact with the crank-arm P causes the latter to push back the bolt E against the stress of the spring e^3 . The sear O, then actuated by the force of the trigger-spring t^2 , through the connection hereinbefore described, slides up and its end en-

ters the notch or offset e^4 in the under side of the bolt-head E' . The cartridge having been inserted, the barrel is returned to the normal or horizontal position, as in Fig. 1, it being maintained in that position by the locking-bar V, the end of which has entered the socket of the lug b' . If now the trigger be drawn back, the sear O will be disengaged from the notch e^4 , the firing-bolt head, impelled by the spring e^3 , will strike forcibly against the firing-pin, and the cartridge be thereby discharged, and the parts will then occupy the positions represented in Fig. 2.

When it is desired to carry the gun cocked, in order to avoid danger of discharge by accidental retraction of the trigger, the safety-dog D is rotated so that its free end will cover the lower end of the sear O, that is to say, the dog is shifted from the position shown in Fig. 2 to that seen in Figs. 1, 3, and 4.

As it is desirable that the several parts of a firearm should be capable of being readily and quickly removed and replaced for cleaning or removal in case of wear or breakage, I have to this end devoted special efforts toward devising a simple construction, whereby any one, however unskilled, with no tool other than a suitable knife or screw-driver may so remove and replace the parts. This construction I shall proceed to particularly explain.

The barrel-locking plate V, with its slot v^5 directed outwardly, that is, as in the position of Fig. 6, is inserted within the breech-chamber, a laterally open slot a^3 in the front wall of the breech-frame receiving the end portion of said plate, as seen in Figs. 1 and 2. The stud w' is now passed up through the aperture v^4 , its arm w^2 being entered into the slot v^5 . The thumb-piece and the stud are secured together by the screw w^3 . The firing-bolt with the spiral spring previously placed on its rod e^2 is then inserted, the upper part of its head being passed through the opening v^6 , formed by the bifurcations of the locking-plate. The spring m^3 is now placed on the rod of the angle-piece M, and the latter is inserted laterally in and at the rear of the frame. A slot m^4 in the vertical limb of said piece allows the passage of the end of the rod e^2 of the firing-bolt. At the same time the spring e^3 on said rod e^2 is compressed so that its rear end bears against the inner face of the angle-piece. These parts are held in place laterally without interfering with their action by means of a plate N, Fig. 4, seen detached in Fig. 10, and which I term the "retaining-plate." The forward end of the plate rests in offsets n' , Figs. 1 and 2, at the edge of the laterally open slot a^3 , which receives the end portion of the barrel-locking plate, while its rear end rests in an offset n^2 in the side edge of the angle-piece, Fig. 9. The lower edge of the offset middle part of this plate N bears against the upper edge of that side of the firing-bolt. A projection n^3 , Figs. 4 and 10, near the rear

end of the plate bears against the edge of the angle-piece, as seen in Fig. 4. The side plate S, Fig. 11, is now screwed on.

If desired, the retaining-plate and the side plate may be an integral piece.

It will thus be seen that the several pieces of the mechanism may be readily taken out when necessary, as for cleaning or replacing a broken part, the only tool required being a screw-driver or knife. For example, in case of a broken or defective spring it requires but a moment to replace it.

I do not limit myself to the precise construction shown and described, as the same may be modified to a considerable extent without departing from the essential construction or principle of the invention. For example, by a slight change the intervening pivoted crank-arm P may be dispensed with and the end of the lever H bear directly against the firing-bolt. The sliding pin O may also be omitted, and the short arm of the trigger be provided with a finger adapted to engage directly with a suitable notch in the firing-bolt in order to lock the latter when retracted.

I do not broadly claim as new in breech-loading firearms a combination of mechanism whereby the hammer or firing-pin is automatically locked by the depression of the barrel.

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

1. In a breech-loading firearm, the combination of the firing-bolt having the raised head, and the rearwardly-extended rod, the bent lock-plate bifurcated or slotted to receive the said head, the vertical angle-piece M having a forwardly-extended rod at the upper

end, said piece having its vertical limb slotted at one edge to receive the rod of the firing-bolt, a spring seated upon the said rod and bearing against the angle-piece, and a second spring seated upon the rod of said angle-piece and bearing against the said locking-plate, together with means for retracting said bolt and plate against the action of the said spring, and for holding said bolt retracted and subject to the action of the trigger, substantially as specified.

2. In a breech-loading firearm, the combination with the breech-frame open at the side, the pivoted barrel, the detachable firing-bolt, its spring, the barrel-locking plate, the angle-piece carrying a spring for said locking-plate and forming an abutment for the spring of the firing-bolt, and the side retaining-bar, of the bar H pivoted to the under side of the barrel and arranged at its rear end to act upon said bolt to retract it as the barrel is depressed, together with means for holding said bolt retracted, subject to the action of the trigger, substantially as specified.

3. In a breech-loading firearm the combination of the breech-frame open at the side, the detachable firing-bolt carrying the spring, the barrel-locking plate, the angle-piece carrying the spring, which operates the said locking-plate and the side retaining-bar, all constructed and arranged substantially as and for the purpose specified.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

ALFRED SILL.

Witnesses:

JOHN R. NOLAN,

H. ALFORD BOGGS.