

(No Model.)

2 Sheets—Sheet 1.

W. S. TEALL.

BREECH LOADING FIRE ARM.

No. 308,216.

Patented Nov. 18, 1884.

Fig. 1.

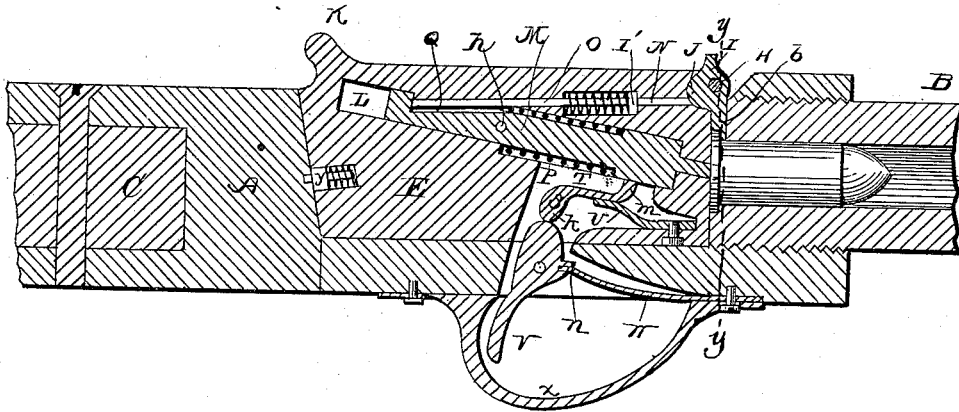
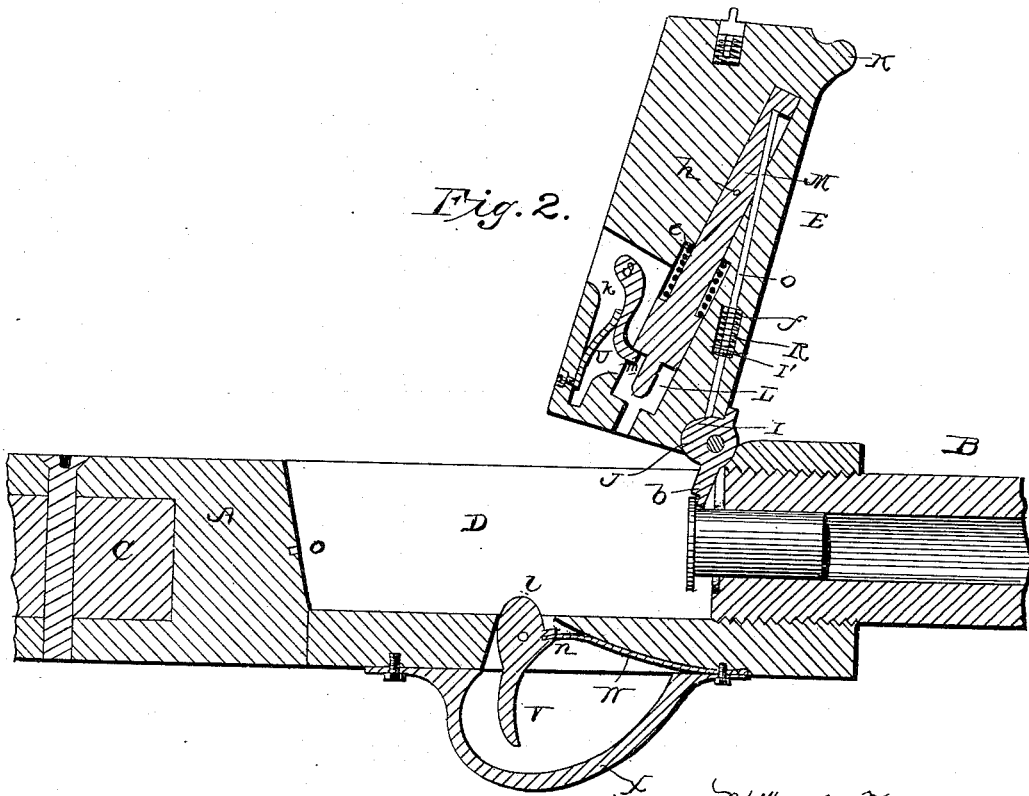


Fig. 2.



WITNESSES

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Fig. 3.

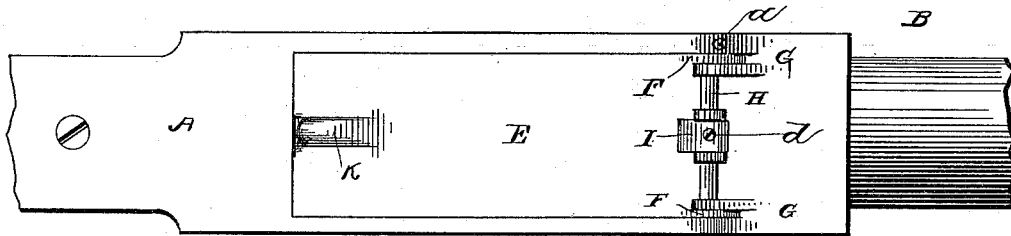


Fig. 4.

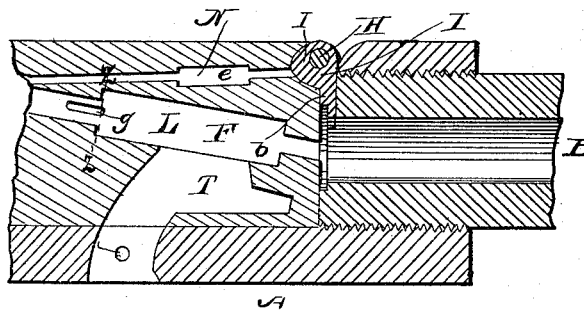


Fig. 5.

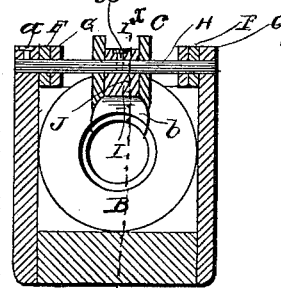


Fig. 6.

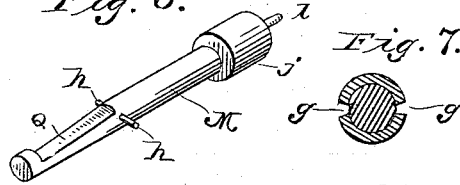


Fig. 7.



Fig. 8.

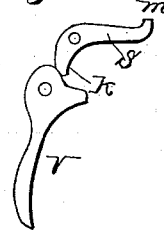
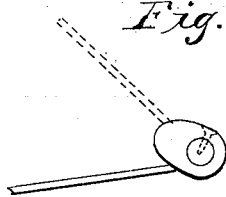


Fig. 9.



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UNITED STATES PATENT OFFICE.

WILLIAM S. TEALL, OF LITTLE FALLS, NEW YORK.

BREECH-LOADING FIRE-ARM.

SPECIFICATION forming part of Letters Patent No. 308,216, dated November 18, 1884.

Application filed August 16, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. TEALL, a citizen of the United States, residing at Little Falls, in the county of Herkimer and State of New York, have invented a new and useful Improvement in Hammerless Guns, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to what are termed "hammerless guns," or that class of breech-loaders which employ a firing-pin to explode the cartridge in place of the usual hammer; and it has for its object to provide improved means which will be simple in construction, inexpensive to manufacture, and efficient in operation.

A further object of the invention is to provide a gun of this class in which the operation of loading, firing, and extracting the cartridge can be easily performed without detracting from the accuracy of the aim, which will be light and convenient in every respect, and in which the motions of the hand necessary to manipulate the gun will be fewer and less complex than those required with breech-loading guns of this class.

With these and other objects in view the said invention consists in certain details of construction and combination of parts, as hereinafter set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of a portion of a breech-loading gun embodying my improvements, the stock and barrel being broken off and the breech-block closed. Fig. 2 is a similar view, the breech-block being thrown up to set the firing-pin, extract the cartridge, and load the barrel. Fig. 3 is a plan view of Fig. 1, the breech-block being closed. Fig. 4 is a vertical section on the line *x x*, Fig. 5, the firing-pin and its actuating-lever being removed from their respective chambers. Fig. 5 is a transverse section on the line *y y*, Fig. 1. Fig. 6 is a detail perspective view of the firing-pin. Fig. 7 is a transverse section on the line *z z*, Fig. 4. Fig. 8 is a detail side view of the trigger and its lever. Fig. 9 is a side view of the eccentric or cam and the firing-pin lever, illustrating the manner in which the cam acts to force the lever backward to set the firing-pin.

Like letters refer to corresponding parts in the several figures.

Referring to the drawings, A designates the frame or breech-piece, having the stock C at one end and the barrel B at the other end, and recessed at D to receive the breech-block E. The latter has lugs F projecting upwardly from its upper face at the forward end, as shown in Fig. 3, and fitting over the breech-piece against lugs G, which project from the same, the said lugs F G having their perforations registering with each other, to allow the passage of the breech-pin H, which serves to pivot the breech-block and allow vertical movement thereof. The breech-pin passes through the breech-piece, as seen in Fig. 5, and is provided with a set-screw, *a*, which engages with one end thereof, so as to hold said pin from turning when the breech-block is thrown back. Upon the breech-pin H is mounted the extractor I, having its lower end notched to form a finger, *b*, which engages with the cartridge, as seen clearly in Figs. 1 and 2, said extractor turning on the pin, and having its upper portion bifurcated or slotted at *c*, an eccentric or cam, J, being rigidly held on the breech-pin by a set-screw, *d*, in the slot *c* of the extractor. (See Fig. 5.)

The breech-block is provided at its rear end with a knob or thumb-piece, K, and is interiorly recessed from the front end at the point where it comes in contact with the cartridge rearwardly, and in an upwardly-inclined direction, nearly to the thumb-knob, forming a chamber, L, for the reception of the firing-pin M, and is further recessed from the point where it comes in contact with the eccentric rearwardly, on a slight downward inclination, until it joins with the chamber M to form a chamber, N, which provides room for the firing-pin lever O. These chambers L N are each enlarged at *e f*, respectively, and are shown more clearly in Fig. 4, the chamber L having elongated slots *g g* in its opposite side walls to receive corresponding pins, *h h*, projecting outwardly from the sides of the firing-pin, the latter being thereby guided in its movements and held from turning around. The said firing-pin M (seen in detail in Fig. 6) is round, so as to fit the chamber L, its front end, *i*, coming in contact with the cap of the cartridge, and having an enlargement, *j*, in

rear of said end, fitting within the enlarged portion *e* of the chamber, a coiled spring, P, encircling the central portion of the firing-pin, one end of said spring bearing against the rear portion of the enlargement *j*, and the other end against the rear wall of the enlarged recess *e* of the chamber L. The upper face of the firing-pin at the rear end is formed with a downwardly-inclined slot, Q, into which the rear end of the firing-pin lever O fits, said lever working in the chamber N, and having a collar, I', thereon, a coiled spring, R, encircling the lever, and having one end bearing against the collar, and the other end against the rear wall of the enlarged recess *f* of the chamber N. As seen, this collar I' works in the said recess *f* to compress the spring, the latter serving to keep the front end of the lever always in contact with the eccentric or cam J.

S designates the trigger-lever, pivoted in a recess, T, of the breech-block, and having its forward end provided with an upwardly-extending lug or projection, *m*, arranged to catch the firing-pin at the front end of the enlargement *j*, as seen in Fig. 2, a spring, U, being secured to the breech-block, and having its free end bearing against the lever, so as to hold it in engagement. A trigger, V, is pivoted in a recess of the breech-piece, and is formed with a projection, *n*, against which a spring, W, bears, said trigger having its upper end cam-shaped, as at *l*, to engage with the pointed cam-shaped end *k* of the trigger-lever S, so that by the operation of the trigger the lever is disengaged or withdrawn from the firing-pin, to allow the latter to work forward under the action of its spring. A trigger-guard, X, is attached to the piece in the usual manner and for the purpose well known. A spring-pressed pin or catch, Y, is fitted in the rear end of the breech-block, to engage with an indentation, *o*, in the adjacent face of the breech-piece, said catch acting automatically to engage and disengage itself with the said indentation.

The operation of my invention will be readily understood from the foregoing description, taken in connection with the annexed drawings. Supposing the parts to be in the position shown in Fig. 1, the cartridge having been exploded, the successive actions are as follows: Press the thumb piece or knob K upward until the spring-catch *y* is released from the indentation, allowing the breech-block to move upward in a forward direction, as seen in Fig. 2, the portion of the breech-block which comes in contact with the extractor I causing the latter to turn on the breech-pin, (see Fig. 2,) the finger *b* at the lower end engaging with the cap of the cartridge, and moving rearwardly to expel the latter in a rearward direction from the barrel. By reason of the hinging of the breech-block at its upper forward portion immediately in rear of the barrel to the breech-piece by a stud or breech-pin on which the extractor is mounted the

said breech-block will always be in position to turn the extractor and effect the desired end. Now, as the breech-block is being carried forward and upward from slot in breech-piece at the same time that the extractor is operated, the firing-pin lever O, Figs. 1, 2, and 9, bears against the eccentric or cam J, and is forced rearwardly by reason of the peculiar shape of said cam. When the limit of movement seen in Fig. 2 is reached, the firing-pin lever has forced the firing-pin back through its chamber L to the extreme end, the trigger-lever S catching around the front end of the enlargement *j*, thereby setting the firing-pin. The cartridge is then placed in the barrel and the breech-block closed down, the spring-catch Y acting automatically to yield inward, and then press outward to engage with the indentation *o* and hold the breech-block down in position. The trigger V bears at its cam-shaped end *l* against the pointed cam-shaped end *k* of the trigger-lever, so that by operating said trigger the front end of the lever is withdrawn from the firing-pin, causing the latter to act under the pressure of its spring P until its front end, *i*, comes in contact with the head or cap of the cartridge to explode the same in the usual manner, the parts being now in the position shown in Fig. 1.

It will be seen that the spring encircling the firing-pin lever O causes its outer or forward end to be always held against the eccentric or cam, so that when the breech-block is thrown up this contact of the lever with the eccentric or cam causes the gradual backward movement of the firing-pin until it is set. The pressure of the spring against the trigger-lever causes it to act automatically to retain the firing-pin set until released by the trigger. The spring catch or pin Y engages automatically with the indentation *o* in the breech-piece, and by reason of the spring-pressure applied to the same said catch will be overcome by the pressing of the breech-block upward. Since the breech-pin does not turn, the extractor should be mounted loosely on the same, so as to turn by the action of the breech-block pressing against the same. By reason of the firing-pin lever O being always held in contact with the eccentric or cam J, the said lever will not be forced forward when the firing-pin is released to discharge the cartridge.

All parts of the mechanism are concealed within the breech-block, so as to be free from accumulations of matter and protected from injury. The mechanism is simple in its construction, inexpensive to manufacture, efficient in operation, and will form a light and compact gun, which may be quickly loaded and fired, and is manipulated with ease.

Having described my invention, I claim—

1. In a hammerless gun, the combination with the breech-piece, of the hinged breech-block, a spring-pressed firing-pin working in the latter, an actuating-lever arranged within the breech-block and held in engagement with

the rear portion of the firing-pin, means, substantially as described, for forcing the actuating-lever backward, said means operating the lever automatically by the raising of the

5 breech-block, and a trigger-lever to catch around the front end of the firing-pin when the latter is forced backward, as set forth.

2. In a hammerless gun, the combination, with the breech-piece, of the hinged breech-
10 block, a spring-pressed firing-pin working in the latter, a spring-pressed actuating-lever to set said pin, a cam or eccentric against which the end of the lever bears, and the trigger for releasing the firing-pin, as set forth.

15 3. In a hammerless gun, the combination, with the breech-piece, of the hinged breech-block, the breech-pin hinging the breech-block to the breech-piece, an extractor fitted loosely to turn on said pin, a cam or eccentric rigidly
20 held on the pin, a spring-pressed firing-pin working in the breech-block, a spring-pressed lever arranged to set said pin and bearing at one end against the cam or eccentric, and the trigger for releasing the firing-pin, as set forth.

25 4. In a hammerless gun, the combination, with the breech-piece, of the hinged breech-block, a spring-pressed firing-pin working in the latter, a notch or slot at the inner end of the pin, a spring-pressed actuating-lever having its inner end fitting within the slot or
30 notch of the pin, a cam or eccentric for operating the actuating-lever, and a trigger for releasing the firing-pin, as set forth.

5. In a hammerless gun, the combination,
35 with the breech-piece, of the hinged breech-block, an inclined chamber formed in the latter, slots in the walls of the chamber, a spring-pressed firing-pin working in the chamber and having pins or studs projecting outwardly and fitting in the slots, an actuating-lever engaging
40 with the inner end of the firing-pin, and a cam or eccentric for operating the lever, and a trigger for releasing the firing-pin, as set forth.

6. In a hammerless gun, the combination,

with the breech-piece, of the hinged breech- 45 block, a spring-pressed firing-pin working in the latter, a spring-pressed actuating-lever for setting the pin, means for operating the lever, a spring-pressed trigger-lever for retaining the firing-pin in its set position, and a spring-
50 pressed trigger having its upper end engaging with the end of the lever, to release the pin and allow the exploding of the cartridge, as set forth.

7. In a hammerless gun, the combination, 55 with the breech-piece, of the hinged breech-block, chambers L N, formed therein, and enlarged at *e f*, respectively, a spring-pressed firing-pin working in the chamber L, and having an enlargement, *j*, an actuating-lever work-
60 ing in the chamber N, and having its inner end engaging with the inner end of the firing-pin, a collar on said lever, a spring encircling the lever and bearing against said collar, means for operating the lever to set the firing-pin, 65 and a trigger for retaining and releasing the said pin, as set forth.

8. In a hammerless gun, the combination, with the breech-piece, of the breech-block, the
70 breech-pin hinging the latter at its upper forward end to the breech-piece, an extractor mounted loosely on the breech-pin and having its upper end slotted, a cam or eccentric held rigidly on the pin within the slot, a spring-
75 pressed firing-pin working in the breech-block and having its inner end slotted, an actuating-lever fitting at its inner end within said slot and operated by the eccentric or cam, and a
80 trigger for retaining and releasing the firing-pin, as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

WILLIAM S. TEALL.

Witnesses:

WILLIAM G. MILLIGAN,
SYLVANUS J. WATERS, Jr.