

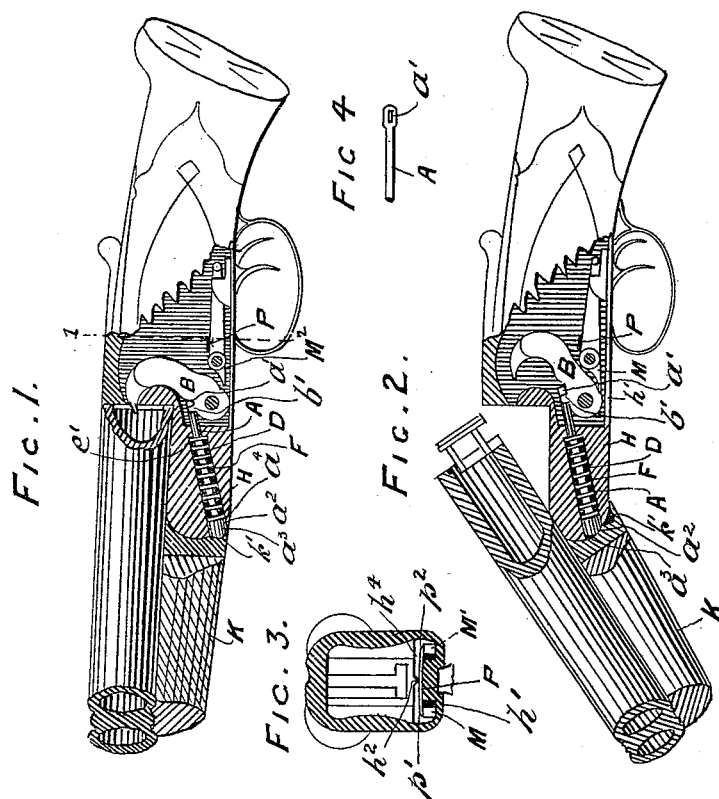
(No Model.)

2 Sheets—Sheet 1.

H. GREENER.  
BREECH LOADING BREAKDOWN GUN.

No. 489,947.

Patented Jan. 17, 1893.



Witnesses  
W. Harry Muzzey  
Charles A. Muzzey

Inventor  
Harry Greener  
by W. H. Babcock  
Atty.

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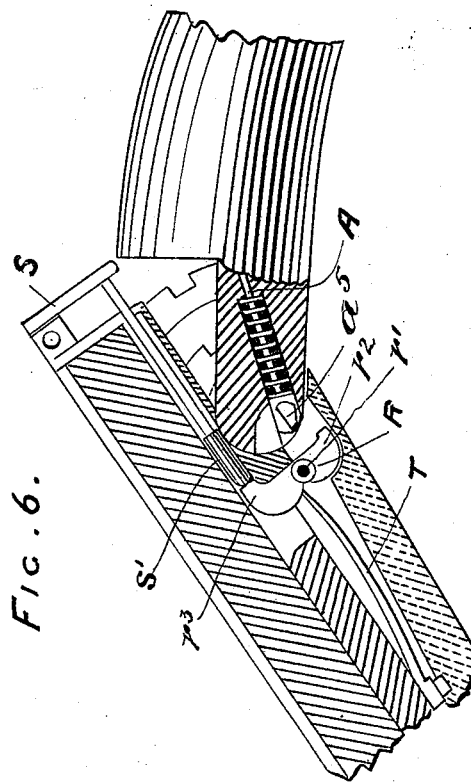
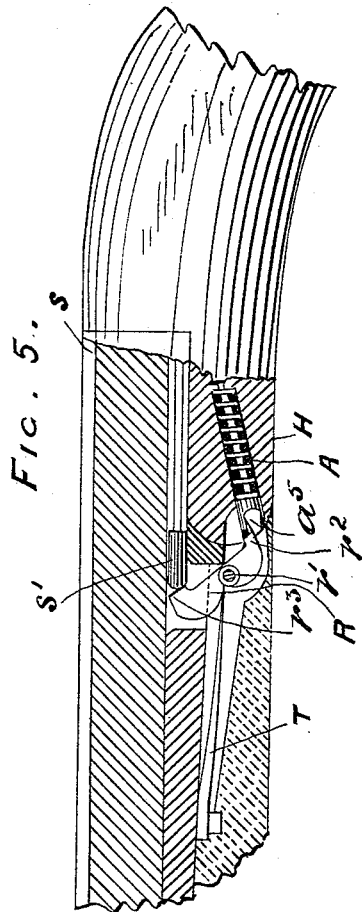
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# UNITED STATES PATENT OFFICE.

HARRY GREENER, OF BIRMINGHAM, ENGLAND.

## BREECH-LOADING BREAKDOWN GUN.

SPECIFICATION forming part of Letters Patent No. 489,947, dated January 17, 1893.

Application filed February 29, 1892. Serial No. 423,318. (No model.) Patented in England February 14, 1891, No. 2,697.

*To all whom it may concern:*

Be it known that I, HARRY GREENER, gun manufacturer, of the firm of W. W. Greener, of Prize Gun Works, St. Mary's Square, Birmingham, in the county of Warwick, England, a subject of the Queen of Great Britain, have invented certain new and useful Improvements in Breech-Loading Small-Arms, of which the following is a specification.

10 This invention has been patented in England No. 2,697 dated February 14, 1891.

My invention relates to breech-loading fire arms of the break-down kind, and consists partly in the peculiar construction and combination of the devices for cocking the same; 15 partly in the peculiar construction of the sear spring and its combination with the hammers and proximate parts; and finally in the means for extracting the shells after firing and in certain additional details, all 20 substantially as hereinafter more particularly set forth and claimed.

Figure 1., is a broken-off part-longitudinal section of my gun the lock itself being in 25 sectional elevation so as to show the internal mechanism more plainly. In this figure the breech is closed and the mechanism as it would be after firing. Fig. 2., is a similar longitudinal sectional elevation to that of Fig. 30 1, with this difference that the breech of the gun is open and the mechanism in the position it would occupy when all the parts are in full bent. Fig. 3., is a cross section through the breech case on the line 1. 2, Fig. 1 looking toward the breech so as to show clearly 35 the sear spring P. Fig. 4., is a view of the end  $a'$  of the rod A showing a modification in which an eye is provided instead of a notch for attachment to the tongue  $b'$  on the tumbler B. Fig. 5., is a longitudinal section 40 through the center of the gun showing the extracting mechanism with the breech closed. Fig. 6., is a similar section to Fig. 5 but with the breech open.

45 One part of my invention consists in the novel mode of operating the tumblers in striking the cartridges which I effect as follows:— I drill two diagonal or other holes F one for each tumbler on each side the breech through 50 the body H of the breech action in which I mount the spring sliding rods A which are capable of a reciprocating sliding action.

The tumbler ends  $a'$  of these rods are slotted to hook on to corresponding projecting tongues  $b'$  upon the tumblers B so as to be capable 55 of moving them in either direction. The lower end of the sliding rod A has an enlarged head  $a^2$  which forms an internal shoulder  $a^4$  corresponding with the shoulder  $e'$  formed near the top of the hole F thus leaving a recess in which I mount the coiled spring D 60 which encompasses the sliding rod A. These springs D are mounted upon their rods A in their relation to the tumblers B so that they have a constant tendency to bring them forward by the hook of the sliding rods upon the 65 tumblers and they thus act as the main springs of the gun in bringing the tumblers forward to strike the cartridges in firing the springs being specially arranged for this purpose. 70 The sliding rod A is so mounted in the hole or chamber F that the head  $a^2$  projects from the body H of the breech action a short distance into a suitably prepared recess or hollow  $h'$  of the fore end K. This projecting head  $a^2$  of the sliding rod A is formed at 75 the head with inclined face and rounded nose  $a^2$  so that when the breech is opened the lower portion of the fore end K by its special formation presses against the head  $a^2$  and moves 80 the sliding rods A upward against the tumblers B carrying them back against the pressure of the springs D sufficiently for the sear M to secure them in full bent as shown by Fig. 2. The closing of the breech then leaves 85 the tumblers B cocked and with the main springs D in full action upon them tending to bring them forward. It will thus be evident that by the release of the tumblers upon the triggers being pulled that they are brought 90 forcibly forward by the main springs D and the gun is fired thus leaving the rods A in the positions as seen in Fig. 1 again ready for the operation of recocking when the breech is again opened as before described. 95

The sear spring P as seen more clearly at Fig. 3 is so formed as a single spring operating upon both sear that its effective length for elastic and effective action upon each is about equivalent to two springs the full 100 length. It will be seen that the ends  $p'$  and  $p^2$  bear one upon each of the two sears M and M' and are kept in action by the center projecting nose piece  $h^2$  which is formed for

the top of the aperture  $h^4$  in the body of the breech action and they may thus be mounted conveniently with very little trouble.

For the ejection of the cartridge the stud  $a^5$  is formed upon the side of the head  $a^4$  of the sliding rod A and the cam R is pivoted in the fore end K at  $r'$  so that when the gun has been fired the stud  $a^5$  engages with the nose  $r^2$  of the cam so that as the breech is opened the nose  $r^2$  is carried up thereby carrying back the hammer end  $r^3$  of the cam until the nose  $r^2$  is clear of the stud  $a^5$  which then allows the hammer end  $r^3$  to strike the extraction rod  $s'$  of the extractor S the force being caused by the spring T which bears upon the said hammer and thus ejects the cartridge. In the case of the breech being opened without having been fired the cartridges are not ejected inasmuch as the rod A is not released and the stud  $a^5$  cannot operate the cam R which then simply pushes the rod  $s'$  out as the breech is opened and thus only extracts the cartridge. By this arrangement the necessity for a sear in connection with the ejector is obviated and the parts required are thereby reduced in number.

It will be noticed that the bottom  $h'$  of the body or casing of the breech action is in one piece with the sides thereof as shown by Fig. 3 which enables me to secure greater strength and stability with lightness and of course with less shake or vibration of the parts of the mechanism. It will however be obvious that the other improvements can be carried out without this being the case.

What I claim then is:—

1. In combination with a hammer and its sear, a rod connected to the said hammer, a protruding head on said rod a spring bearing against the said rod to operate the said hammer, the casing in which the said rod is guided and the fore end arranged to act on the protruding head of the said rod substantially as set forth.

2. In combination with a hammer and its sear, a rod connected to the said hammer, a

spring bearing against the said rod to operate the said hammer, a casing in which the said rod is guided, and a fore end arranged to press against the beveled protruding head of the said rod to force the latter in for cocking the said hammer substantially as set forth.

3. In combination with a pair of hammers and their main springs and sears, a breech-action casing or body having a nose-piece  $h^2$  formed therewith, and a sear spring which is held in place by this nose piece and bears at its ends on the said sears substantially as set forth.

4. In a breech-loading fire-arm, the combination of a hammer, a spring-actuated rod attached thereto for cocking it and having a stud  $a^5$  on its protruding end, an ejector hammer arranged in the fore-end to be tilted by the extractor when the gun is closed a spring bearing against the said ejector hammer and put under tension by this tilting and a cartridge-extractor actuated by the said ejector hammer and spring when the fire arm is broken down thereafter substantially as set forth.

5. In combination with the hammer of a fire-arm and an extractor, attached respectively to the main part of the breech and to the fore end a spring actuated pivoted piece bearing against the said extractor and a spring-actuated rod attached to the said hammer and constructed to engage the said pivoted piece by means of a stud on its protruding head when the breech is in its normal position and the hammer is uncocked, the said head and stud being forced out of position for such engagement when the hammer is cocked substantially as set forth.

In testimony that I claim the foregoing as my own I affix my name in the presence of two witnesses.

HARRY GREENER.

Witnesses:

WILLIAM SMITH,  
GEORGE PRICE.