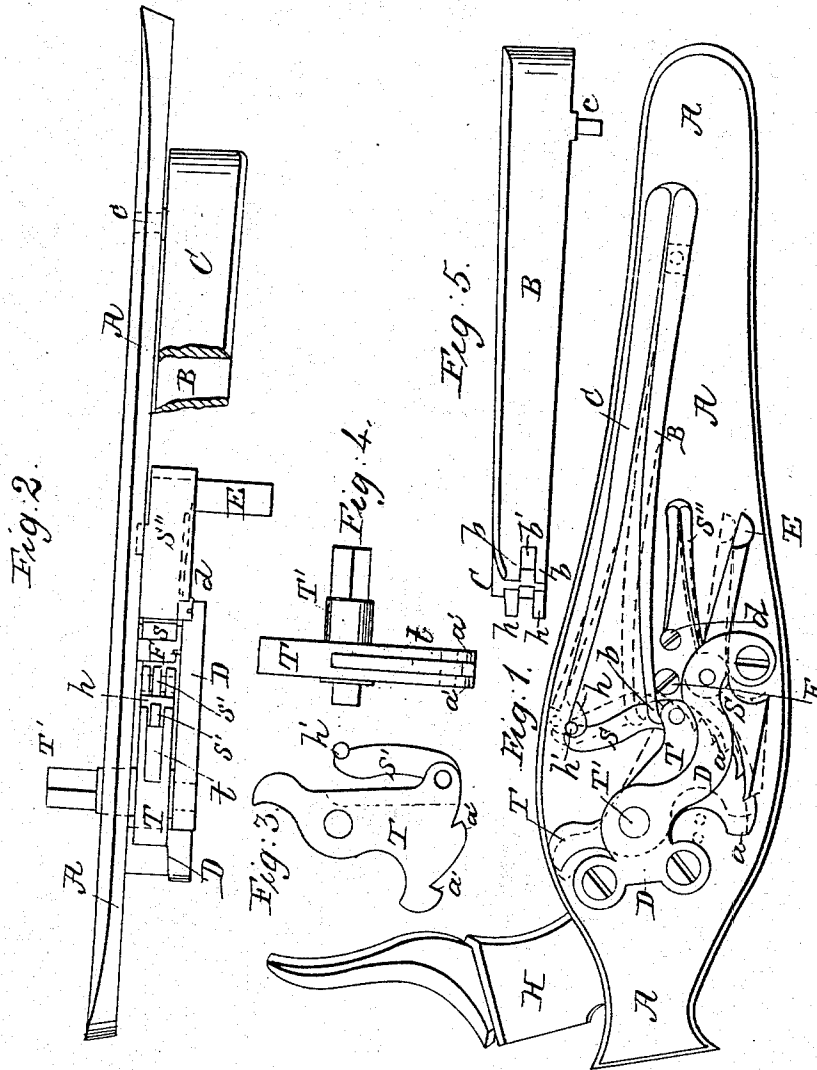


J. STOKES.
Gun Lock.

No. 84,314.

Patented Nov 24, 1868.



Witnesses.
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JOHN STOKES, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR TO WESSON FIRE ARMS COMPANY, OF SAME PLACE.

IMPROVEMENT IN GUN-LOCKS.

Specification forming part of Letters Patent No. 84,314, dated November 24, 1868.

To all whom it may concern:

Be it known that I, JOHN STOKES, of Springfield, in the county of Hampden and Commonwealth of Massachusetts, have invented a certain new and useful Improvement in Locks for Fire-Arms; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is an elevation of said lock as detached from the stock of the gun. Fig. 2 is a plan view of the same, the hammer being removed and a portion of the mainspring shown as broken away. Fig. 3 is an end elevation of the tumbler and stirrup, and Fig. 4 is a plan view of the same. Fig. 5 is a plan view of the mainspring.

All the drawings are made of double size, to show the parts more clearly.

My invention consists in a certain construction and arrangement of the mainspring of a gun-lock relatively to the tumbler, whereby the hammer, after striking its blow, is caused to return to the position of half-cock, or to move back a certain distance, so as to retreat from or relieve the nipple, firing-pin, or cartridge, and to remain stationary at the point to which it has moved back. The position of the hammer, therefore, in my invention, when at rest, is at the half-cock, the rear nose taking into the half-cock notch; or the hammer may be made to rest at quarter-cock, or at any other point in the arc which its end traverses short of full-cock. The most useful adjustment of the parts will, however, be probably found to be such as to make the hammer return to the position of half-cock, and such an adjustment is shown in the accompanying drawings. When the hammer of a lock thus adjusted is drawn back to full-cock, and then released by the trigger, it will move forward beyond its natural position of half-cock, and deliver its blow upon the cap, cartridge, or firing-pin by the direct action of the mainspring, and then return to the half-cock, as I will hereafter explain. The sear-nose engages with the notch in the tumbler after the reaction of the hammer, so that the latter cannot be made to deliver a second blow unless it

is again drawn back to the full-cock and released by the trigger, in the usual manner.

In my invention the long arm of the mainspring is attached to the tumbler by the stirrup, in the usual manner; but the end of the short arm, instead of resting in a fixed position against a rigid support, is elongated, so that it bears upon the edge of the tumbler during a part of the rotation of the latter, and, in the lock shown, it only bears after the hammer reaches half-cock in going down. Consequently, while the hammer is going down from full-cock to half-cock the long arm only acts upon the tumbler, and the short arm bears against a rigid rest set in the plate of the lock. The mainspring, therefore, during this time, works precisely as the mainspring in ordinary gun-locks to rotate the tumbler by means of the long arm drawing on the stirrup; but from the time the hammer has passed the half-cock notch in going down until it has returned to that point the ends of both arms of the mainspring are acting upon the tumbler, the long arm acting by means of the stirrup, as usual, and the other or shorter arm by the direct pressure of its end upon the upper edge of the tumbler.

With such a construction, therefore, if the hammer be brought up to full-cock and then released, the force of the long arm of the mainspring is exerted upon the tumbler without any counter-force to oppose it until the hammer comes down to the half-cock, and then the end of the short arm begins to bear upon the tumbler; but in throwing the hammer down to half-cock without any resistance, sufficient force has been acquired to carry it on farther, to deliver its blow, and then, the forward movement being checked, the effect of both arms acting on the tumbler at once is seen in bringing the hammer back to half-cock. The end of the short arm is rounded, so as to make a curved projection, which bears upon the tumbler, and the edge of the latter, in the line of contact with this end of the spring, is also curved in such a manner that it lets the end of the short arm down a little more when it is in the half-cock position than when the hammer is down upon the nipple. In other words, the arms of the mainspring are so adjusted

and attached to the tumbler that they can spring apart a little more when the tumbler is at the half-cock than when the hammer is down, and this tendency of the arms to spring apart is made to rock the tumbler back, so as to bring the hammer to the half-cock as its standing position.

The movement of the hammer past the half-cock and back again is so quickly performed as to be hardly discernible by the eye; but if the construction and arrangement of the co-acting parts are correct, the hammer will be found to have delivered a powerful blow before returning to the half-cock.

As it is necessary, in many kinds of breech-loaders, to raise the hammer before throwing the barrels into the loading position, as well as for other reasons familiar to the makers of such arms, my invention will be found especially useful in the locks of such breech-loading fire-arms, but may be applied with equal facility to the locks of fire-arms which are not breech-loading.

It will be seen that my invention, as herein set forth, is described in connection with that class of gun-lock known as "back-action" locks; but it can be applied, without any change of principle or result, to the bar-lock, and various other classes of locks in which the mainspring can be made to co-operate with the tumbler to produce the effect before described.

The construction of my invention is as follows: The main parts of the lock, except the mainspring, do not differ materially in construction and operation from the corresponding parts of ordinary gun-locks of the same kind, and consist of the supporting-plate A, bridle D, sear S, stirrup S', sear-spring S'', tumbler T, and its journal T', with the hammer H rigidly attached to it.

The half-cock notch *a* and full-cock notch *a'* in the edge of the tumbler are arranged to engage with the sear-nose, and hold the hammer in one or the other position, and the tang E of the sear engages with the trigger-plate for releasing the hammer.

The mainspring is formed of the two arms B and C, in the shorter arm, B, of which is the pin *c*, which enters a hole in the plate A, and acts as a fulcrum, as well as to secure the spring in place.

The hooks *h h* upon the end of the longer arm, C, take hold of the cross-bar *h'* at the upper end of the stirrup, and thus transmit the force of the longer arm to the tumbler. The stirrup is pivoted to the tumbler, so as to give it the proper revolution about its journal.

The foregoing is the usual operation of the several parts mentioned, as used in ordinary gun-locks.

The short arm, B, instead of having its end set firmly at a fixed point in the lock, is elongated, so that the end rests upon the upper edge of the tumbler. A slot, *b'*, is formed in the end of B, to allow the ends *b b* of the spring to pass the edge of the stirrup, S' and

rest upon the tumbler, the edge of which, at the line of contact with the end of the spring, is curved in such a manner that when the tumbler is turned into the position shown by the red lines, (*i. e.*, when the hammer is down to the striking-point,) the end of the arm B will be brought nearer to the end of A than when it is in the position shown by the black lines, (when the hammer is at half-cock.) The ends *b b*, which bear upon the tumbler, are in the form of rounded cam-like projections, and the curved edge of the tumbler, which they press upon, acts as a cam in putting more strain upon the spring when the hammer is down than when it is at half-cock.

The screw F is inserted in the plate in such a position that when the hammer is drawn back past the half-cock the end of the short arm, B, rests upon the screw, and exerts no more pressure upon the tumbler until the latter is turned back, so that the sear-nose again approaches the half-cock notch.

By thus relieving the tumbler of the pressure of the short arm until the hammer has come down to the half-cock, and allowing the long arm to act meanwhile with full force, the hammer is driven down to the striking-point, and past its proper point of rest. Having struck its blow, the tumbler is rocked back by the joint action of the two arms of the mainspring.

In the drawings, the red lines show the position of the tumbler, mainspring, &c., when the hammer has moved down to the cap, cartridge, or firing-pin, the black lines showing the position of the several parts when the hammer is at half-cock or at rest.

In the foregoing description of my invention the short arm of the mainspring only is spoken of as bearing directly upon the edge of the tumbler; but it is obvious that by a proper arrangement of the parts, that arm which is the longer of the two, as measured from the bend, may be made to bear upon the edge of the tumbler, while the stirrup would then be attached to the shorter arm.

The line of curve upon the edge of the tumbler and upon the ends *b b* of the arm B is to be such as to produce the necessary cramping or closing effect upon the spring when the hammer goes down past the point of rest, and this eccentric curve upon one of the bearing-surfaces will be formed and shaped relatively to the curve upon the other, the two surfaces coacting to bring the hammer back to the point of rest, wherever that may be located, at half-cock, quarter-cock, &c., as my invention refers to such an arrangement of the tumbler and mainspring as will not only bring the hammer back to half-cock, if that point be chosen as the point of rest, but will also bring it to any other point of rest which will relieve the nipple, firing-pin, or cartridge, such point, however, not being located so far back as to prevent the hammer from delivering the proper blow when released.

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

The construction and arrangement relatively to each other of the mainspring and the tumbler in the locks of fire-arms, whereby the hammer, after delivering its blow, is made, by the action of the mainspring, to

rise or return sufficiently to relieve the nipple, firing-pin, or cartridge, substantially as and for the purpose set forth.

JOHN STOKES.

Witnesses:

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