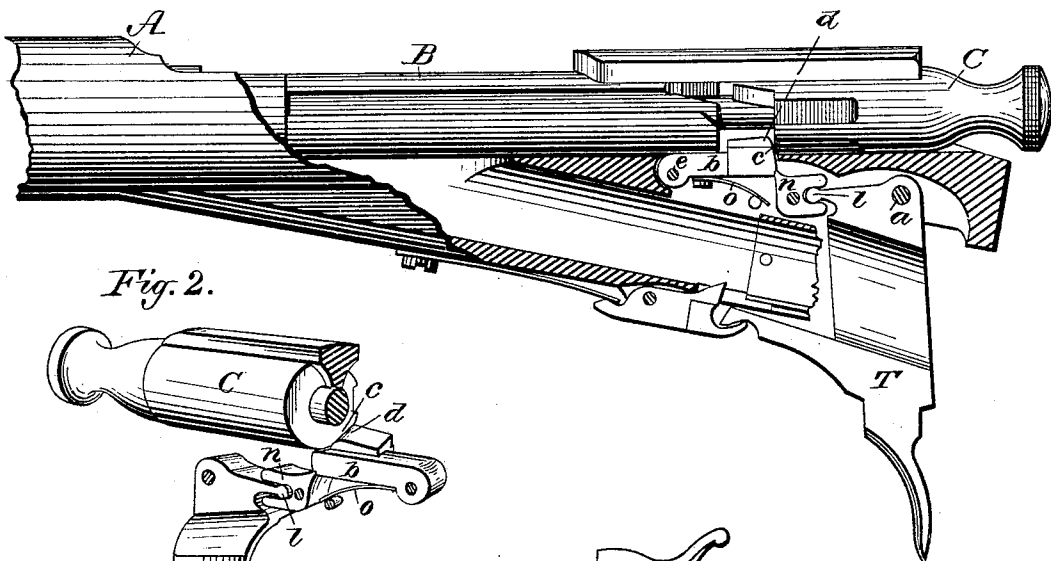


W. W. WETMORE.  
Lock for Fire-Arms.

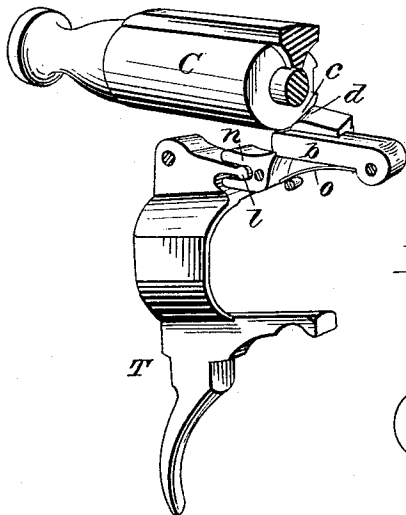
No. 223,662.

Patented Jan. 20, 1880.

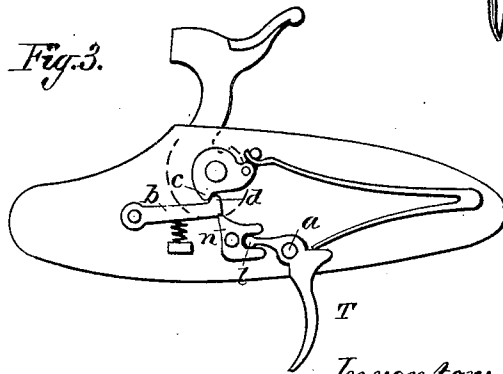
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses:  
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S. P. Hollingsworth

Inventor:  
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by Dodge & Son.  
Atty.

# UNITED STATES PATENT OFFICE.

WILLIAM W. WETMORE, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE  
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## LOCK FOR FIRE-ARMS.

SPECIFICATION forming part of Letters Patent No. 223,662, dated January 20, 1880.

Application filed December 9, 1879.

To all whom it may concern :

Be it known that I, W. W. WETMORE, of New Haven, in the county of New Haven and State of Connecticut, have invented certain  
5 Improvements in Gun-Locks, of which the following is a specification.

My invention relates to gun-locks, and more particularly to the locks used in that class of fire-arms known as "bolt-guns;" and the in-  
10 vention consists in a novel construction of the lock, whereby the pull on the trigger required to fire the charge is made much lighter than usual in guns of this character, and whereby the arm is better adapted for use both as a  
15 sporting and a military arm, all as hereinafter more fully set forth.

Figure 1 is a side elevation, partly in section, of the breech portion of a gun containing my improvements. Fig. 2 is a perspective  
20 view of lock portion or devices, shown detached from the gun, but occupying their relative positions, ready for action; and Fig. 3 represents the invention applied to the old style of gun-locks, or those using a swinging  
25 hammer.

In the accompanying drawings I have represented my invention as applied to the arm known as the "Hotchkiss" gun, which is a  
30 magazine bolt-gun; but as my present invention relates solely to the lock, and as it is equally applicable to other styles of guns, I shall describe only so much of the arm as is necessary to a clear understanding of the invention.

In bolt-guns the hammer which strikes the  
35 fulminate or primer is usually a bolt or firing-pin, instead of the swinging hammer ordinarily used in the old style of arms, and is forced forward in a straight line by means of a spiral spring; and the firing-bolt or hammer is generally held in a cocked position by having the  
40 trigger, or a lever or sear operated by the trigger direct, engaging against the front face of a shoulder on the firing-bolt; and as this shoulder cannot safely be made at less than a right  
45 angle, and as the whole force of the mainspring is exerted in pressing this shoulder against a corresponding right-angled face of the trigger or other holding device, it follows that a very strong pull is required to fire the arm, thereby  
50 rendering it unsuitable for fine or accurate

shooting, especially when fired off-hand or without a rest.

The object of my present invention is to remedy or overcome this difficulty or objection, which I do as follows:

In the drawings, A represents the receiver or breech-frame; B, the sliding breech-bolt, and C the hammer or firing-bolt, which, as usual, has its front portion reduced in size, so as to fit and slide within the bolt B, and within which the  
60 spiral or propelling spring is located, as usual. At the point where this firing-bolt C projects in rear of the breech-bolt B it is enlarged to the full diameter of the breech-bolt, thereby forming the projecting or locking shoulder *c*,  
65 with which the trigger or locking device ordinarily engages; but instead of leaving this shoulder square, I slightly bevel or round it off on its lower edge, at the point where the trigger usually engages with it, as indicated  
70 at *c*, Figs. 1 and 2. I then provide a pawl, *b*, which may be termed the "sear," and pivot it at *e* in a recess directly in front of the shoulder *c*, it being provided with a light spring, *o*,  
75 of sufficient strength to throw its rear end up in front of the shoulder *c*, as represented in Fig. 1. The rear end of this sear *b* is also beveled or rounded off where it bears against the shoulder *c*, and the parts are so adjusted  
80 or arranged that if the sear *b* is not held up by some means other than the spring *o* the force of the mainspring will cause the shoulder *c* to depress the sear and drive the firing-bolt forward and ignite the charge. To hold  
85 this sear up, and thus hold the firing-bolt securely when cocked, I provide a tumbler or elbow-lever, *n*, which is pivoted in such a position that its point will stand vertical, or nearly so, and engage under the extreme rear  
90 end of the sear *b*, as shown in Figs. 1 and 2. This intermediate locking-piece *n* is connected to an arm, *l*, of the trigger T, which is pivoted at *a* in such a manner that by pulling on the trigger the point of *n* will be thrown back from  
95 under the end of sear *b*, when the firing-bolt C will immediately fly forward, the beveled edges of the sear and of the locking-shoulder *c*, together with the mainspring, acting to force the sear down out of the way, and thereby  
100 release the firing-bolt. By this arrangement

it will be seen that the lock can be made to operate as easily as desired, and yet have the firing-bolt held with absolute safety when cocked.

5 It is, of course, obvious that the proportion of the parts may be varied at will, and also that the trigger may be connected to the locking device *n* in any convenient manner, so as to operate it as described, the construction  
10 here shown being simply designed to illustrate a very simple method of applying my improvement to this particular arm. So, too, it is obvious that this improvement may be applied to that style of gun-locks in which a swinging  
15 hammer is used, by merely reversing the position of the sear *b*, or by providing its upper surface with a projection and making the inclined shoulder at the front instead of the rear end of said projection, as shown in Fig.  
20 3, so it will be in the proper position to engage with the locking-shoulder on the tumbler or hammer in case the tumbler and hammer are made in one piece, as is often done.

It will readily be seen by those skilled in  
25 the art that by so constructing and pivoting the intermediate locking-piece *n* as to have its locking-point more or less nearly in line directly over its pivot, it may be made to operate with more or less ease, the only requisite being that  
30 care be taken not to have the point back of the pivot, as in that case there would be danger that it might accidentally be thrown from under the sear by a shock or rough handling of the arm, and which would cause a premature

discharge of the arm. When, however, the  
35 piece *n* is so connected to the trigger that it cannot move without moving the trigger, as in the present instance, and when the trigger is held forward by a spring, as is universally  
40 the case, such an accident can hardly occur, even if the point of the piece *n* should be set directly over or even a trifle back of the line of its pivot.

It is obvious that instead of beveling or rounding off the corners of both the sear *b*  
45 and the shoulder *c*, against which it engages, it will operate the same if one only of said parts be so beveled or rounded, provided it be done to a sufficient extent; but in practice it is better to construct both in that manner  
50 or less, because they will operate more smoothly, and because, also, if one of them be left with a sharp corner or angle, it will cause more wear of the parts, and will, in time, wear away as it is used.

Having thus described my invention, what  
55 I claim is—

The combination of the locking-shoulder *c* and sear *b*, one or both being beveled or rounded off at their point of contact with the  
60 locking-lever *n* and trigger *T*, all combined and arranged to operate substantially as and for the purpose set forth.

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Witnesses:

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