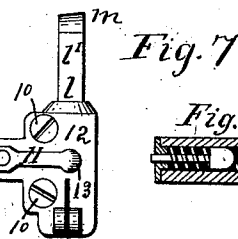
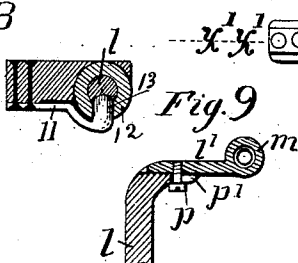
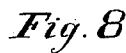
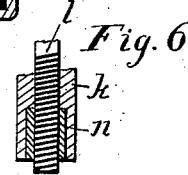
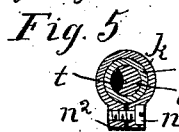
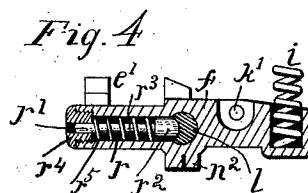
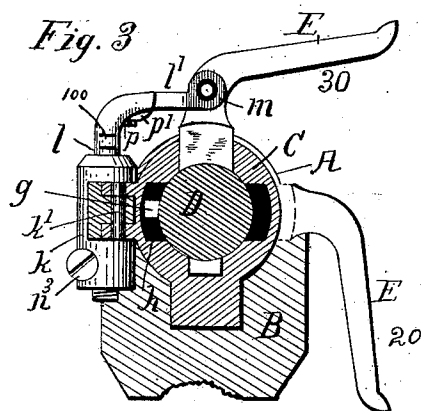
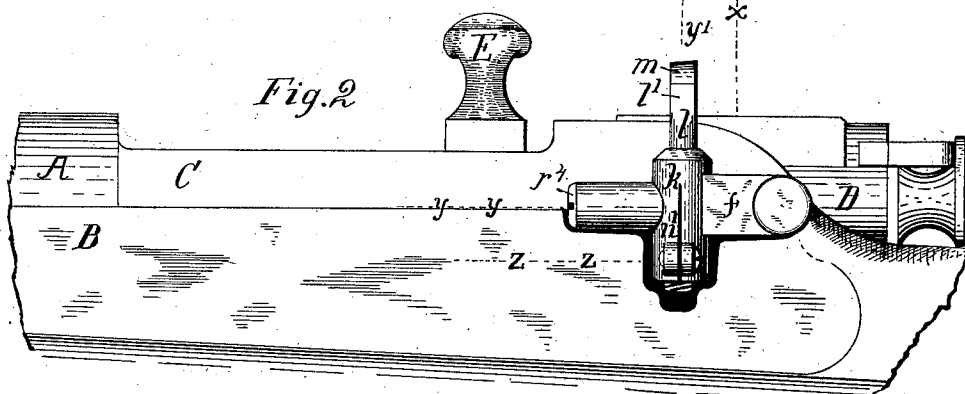
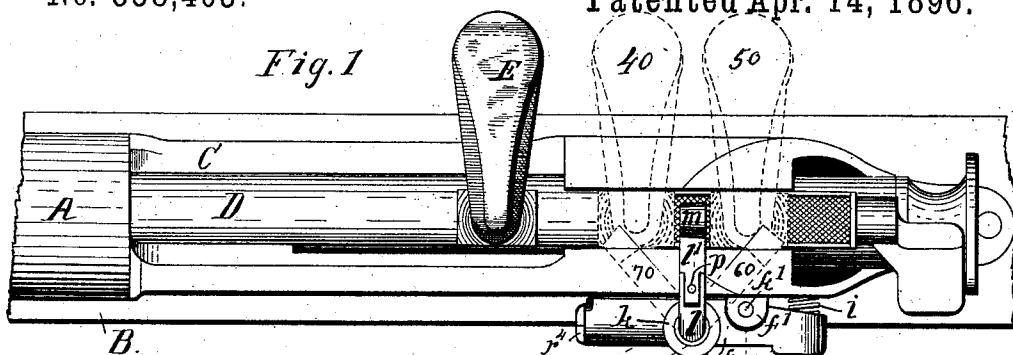


(No Model.)

W. LYMAN.
SIGHT FOR FIREARMS.

No. 558,403.

Patented Apr. 14, 1896.



Witnesses
Linus Barnes
Chas Barnes

Inventor
William Lyman
By George L Barnes
Attorney

UNITED STATES PATENT OFFICE.

WILLIAM LYMAN, OF MIDDLEFIELD, CONNECTICUT.

SIGHT FOR FIREARMS.

SPECIFICATION forming part of Letters Patent No. 558,403, dated April 14, 1896.

Application filed September 17, 1895. Serial No. 562,755. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM LYMAN, a citizen of the United States, residing at Middlefield, in the county of Middlesex and State of Connecticut, have invented certain new and useful Improvements in Sights for Firearms, of which the following is a specification.

My invention relates to a sight for firearms, the object being to provide a sight especially adapted for use in connection with firearms of the bolt-gun type, one type of which has been adapted as a sporting-arm. This type of firearm, as is well known, has a bolt-action, the bolt being swiveled in its bearings and also moved lengthwise therein by means of a lever or handle attached rigidly to the bolt about midway of the length thereof and turning and sliding therewith. This peculiar action of the bolt prevents the use of a sight in the usual position at the breech of the barrel, for the bolt in its rearward travel in the normal action of the mechanism slides past the point ordinarily occupied by sights, and if placed forward of the bolt the sight will be too far away from the eye. Therefore, in order to place the sight in the proper position intermediate of said points, I have devised a novel swivel sight journaled to swing in a horizontal plane above the bolt normally held in its central sighting position by means of a spring and adapted to swing each way therefrom by engagement with and to permit the passage of the operating handle or lever of the bolt.

To this end the invention consists of the novel construction, arrangement, and combination of parts, as hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a plan view of the breech or action of a firearm of the bolt-gun type, dotted lines being drawn to show various positions of the sight and operating-lever, as hereinafter described. Fig. 2 is a side view of Fig. 1. Fig. 3 is a vertical cross-section on the line X X of Figs. 1 and 2. Fig. 4 is a horizontal section on line y y of Fig. 2, showing details of the sight proper. Fig. 5 is a similar horizontal section on line Z Z of Fig. 2. Fig. 6 is a central vertical section through the lower part of the sight. Fig. 7 is an elevation of a modification. Fig. 8 is

a horizontal cross-section on line X' X' of Fig. 7. Fig. 9 is a central section lengthwise of the upper swinging arm of the sight on the line y' y', Fig. 1. Fig. 10 is a section similar to Fig. 4, showing the parts in the position farthest removed from the normal.

Referring to the drawings, A designates the barrel proper of the firearm, mounted in the stock or frame B. The part C, projecting rearward from the barrel, forms a bearing for the bolt D, and is of such shape that it will permit the operating-handle E of the bolt to be swung in a spiral course from the pendent position shown at 20 in Fig. 3 to the horizontal position shown at 30 in the same figure, and then moved rearward in a straight line through and past the positions shown by the dotted lines in Fig. 1, and returned, as required in the ordinary manipulation of the mechanism, here requiring no further description. To provide for the removal of the bolt from its seat, the stop-pin e', which limits its rearward travel, is carried upon a lever f, pivoted to ears f' on the side of the part C and normally held in the plane of a suitable stop projection g on the bolt, adapted to slide in the lengthwise groove h in said part C, forward of the pin. The forward end of the lever is automatically pressed inward by means of a spring i, acting between its rear end and the part C, and by pressing upon said rear end the stop-pin e' may be thrown out clear of the projection g on the bolt, and the bolt then withdrawn from its bearings. This mechanism is not new, but a brief description of it has been here necessarily introduced to explain the construction and operation of the sight which constitutes my invention, as follows:

Mounted in a vertical cylindrical bearing k in the lever f, forward of its fulcrum k', is a sight-post l, having a horizontal arm l', adapted to overhang the axis of the barrel and terminating in a perforated head m, forming the sight, which is thus adapted for horizontal rotation. The lower part of said bearing is enlarged to receive a cylindrical internally-threaded nut n, and the bearing is slit through over a portion of its length from the bottom upward, as shown at n' in Fig. 2, suitable lugs or ears n² being formed on the bearing, which receive a screw n³ for clamping the

parts of the bearing together to hold the aforesaid nut *n* securely in place. The sight-post *l* is threaded to fit the nut, and by being revolved therein may be raised or lowered to adjust the sight to any required elevation. The nut *n* provides for the adjustment of the sight at point blank, either by elevating or lowering the nut or turning it in its bearings, the screw *n*² being loosened for that purpose and afterward securely tightened when the proper adjustment of the sight-post is secured. The sight *m* is rendered slightly adjustable laterally for initially setting the sight, by having the arm *l'* made separate from the post *l*, and secured thereto by a screw *P*, passing through a slot in the projecting part *P'* of the sight-post and screwed into the arm *l'*, the engaging surfaces of both parts being serrated and adapted to interlock securely, as shown in Fig. 9.

In the forward part of the lever *f* is a barrel or cavity *r*, reaching through to the bearing of the sight and containing a plunger *r'*, having a head *r*² and a stem *r*³, which is guided in a cap-nut *r*⁴, which is screwed into the end of and closes the barrel. A spiral spring *r*⁵ is received in the barrel, acting between the cap and the head of the plunger and adapted to press the plunger toward and into engagement with the sight-post. The sight-post is formed with a groove *t* on its forward side, and the plunger-head is rounded off to fit the groove and lock the sight-post in place. This locking action of the plunger is not positive, but permits the sight to be turned in its bearings by the yielding of the spring and forward thrust of the lever by the camming action of the sides of the groove upon it as the sight is turned either way from its normal position. (Shown in Fig. 1.) By suitably proportioning the groove and the plunger the spring will actuate the sight-post and swing the arm thereof through a considerable arc, even of forty-five degrees from the normal position, if required, the relation of the parts in such extreme position being shown in Fig. 10. If the sight-post be turned beyond this position, it will remain in such position, which enables the sight to be readily thrown into disuse at any time when it is desired to take sight openly and without the intervention of an accurate rear sight, as shown by dotted lines 80 in Fig. 1.

The operation of the sight is as follows: In the normal action of the firing mechanism the operating-handle *E* is first moved from the position 20 in Fig. 3 to the position 30 in the same figure, and then moved rearwardly in a straight line, the bolt *D* first turning on its axis and then moving bodily lengthwise. In such movement the handle as it reaches the position 40 (shown by dotted lines in Fig. 1) is brought into contact with the sight *m* in its normal position, (shown by the full lines in said figure;) but owing to the peculiar construction hereinbefore set forth the arm *l'*, being mounted for horizontal rotation, is en-

abled to swing rearwardly and to one side as the handle *E* advances, entirely clearing the handle and disengaging from it when the parts reach the position denoted by the numbers 50 and 60, respectively applied to the dotted lines in said figure representing the handle and arm. The sight-arm, by action of its spring *r*⁵ and plunger *r*², is at once returned to the normal position; but upon the return travel of the bolt *D* forward in a straight line, the sight-arm *l'* will be engaged by the handle *E* when the latter reaches the position 50, and thus pushed forward before it to the position represented by the dotted lines numbered 40 and 70 and respectively designating the handle and the sight-arm. At this point the sight will clear and disengage from the handle and by action of its spring and plunger will be thrown back to the normal position in readiness for sighting as soon as the bolt completes the cycle of operations by being returned forward to the position shown by the handle *E* in Figs. 1 and 3 and then turned or swiveled on its axis until the handle *E* assumes the position 20. (Shown in Fig. 3.) Thus the sight is always in position for use and in no way interferes with the firing action of the firearm. This construction also permits the sight-post to be revolved in its bearing for vertical adjustment of the sight, and it may be suitably graduated, as at 100, to measure the range or elevation of the sight from the point-blank position.

While it is a manifest advantage to fit this improved sight to the locking device or lever *f*, inasmuch as such devices may be manufactured with the sight applied thereto and then readily attached to all existing firearms of this class in use by simply substituting a new lever provided with the sight for the old lever with which the gun was originally furnished, still it will be seen that the sight may be attached to the firearm in any suitable or special manner. For instance, a mounting may be made having the bearing for the sight-post and attached directly to the firearm by screws 10, as shown in Figs. 7 and 8. The form of the spring and locking-plunger may also be modified, as shown in said figures, in which the spring 11 is a simple flat piece of elastic metal riveted to the base or mounting 12 and having the plunger-head 13 formed upon its free end, as shown. Such modification will fall within the scope of my invention, the swinging arm *l'*, spring-actuated to normal position, as set forth, constituting a novel feature of the invention.

I claim as my invention—

1. In sights for firearms, the combination of a sight-post mounted and journaled at the side of the breech or barrel and provided with an arm or post overhanging the axis of the barrel and carrying a sight mounted for horizontal rotation, and spring mechanism adapted to yieldingly hold the sight-arm normally in sighting position transversely to the axis of the barrel, but allow it to swing in either

direction horizontally therefrom to permit the passage of a part or device traveling lengthwise of the axis of the barrel, substantially as and for the purpose specified.

2. In sights for firearms, the combination of a sight-post mounted and journaled at the side of the breech or barrel and provided with an arm or part overhanging the axis of the barrel and carrying a sight mounted for horizontal rotation, the sight-post and its bearing being screw-threaded to provide for vertical adjustment of the sight by rotation in its bearing and spring mechanism adapted to yieldingly hold the sight-arm transverse to the axis of the barrel but permit its rotation in either direction horizontally therefrom for purposes of vertical adjustment or admitting the passage of a lengthwise-reciprocating part or device of the spring action, substantially as and for the purpose specified.

3. In sights for firearms, the combination of a threaded sight-post mounted and journaled in a threaded bearing at the side of the breech or barrel and provided with a sight-arm and adapted for horizontal rotation overhanging the axis of the barrel, the post being grooved longitudinally on one side thereof, a plunger pointed to fit said groove, and a spring for forcing and holding the plunger in the groove, whereby the sight will be normally held with the plunger seated in said groove, but permit the sight-post to be swung in either direction horizontally therefrom and automatically returned through a limited arc to the normal position, for vertical adjustment of the sight or to provide for the passage of a lengthwise-reciprocating part or device of the firing mechanism, substantially as and for the purpose specified.

4. In sights for firearms the combination of a threaded sight-post mounted and journaled at the side of the breech, and provided with an arm or part overhanging the axis of the barrel and carrying a sight mounted for horizontal rotation, a cylindrical nut fitting the threaded sight-post, and adjustably mounted at the side of the breech concentric with the sight-post, and spring mechanism adapted to yieldingly hold the sight-arm transverse to the axis of the barrel but permit its rotation in either direction horizontally therefrom for purposes of vertical adjustment or to allow the passage of a lengthwise-reciprocating part or device of the firing mechanism, substantially as and for the purpose specified.

5. In a sight mechanism for firearms, the combination of a mounting or attachment secured to the side of the breech, a nut clamped or adjustably secured therein, a vertical sight-post fitted therein, having a lengthwise groove and provided with a sight-carrying arm or part overhanging the axis of the barrel and adapted for horizontal rotation, a camming-plunger fitting the groove, and guided in said mounting, and a spring for engaging the

plunger with the groove to hold the sight-carrying arm in normal sighting position and to return it through a limited amount of vibration to said normal position while permitting it to be rotated for vertical adjustment, or to allow the passage of a lengthwise-reciprocating part or device of the firing mechanism, substantially as and for the purpose specified.

6. In sight mechanism for firearms of the class described, or bolt-gun type, the combination of a mounting or attachment secured to the side of the breech and having a vertical bearing or socket, an adjusting-nut received in said bearing, clamping means for holding the nut securely and adjustably in the socket, a sight-post fitting the bearing and said nut, having a lengthwise groove and provided with a sight-carrying arm overhanging the axis of the barrel and adapted for horizontal rotation, a camming-plunger guided in the mounting and adapted to engage the groove of the sight-post, and a spring for actuating the plunger into such engagement with the sight-post whereby by the action of the spring and plunger, the sight-post and its sight-arm will be rotatively cammed into normal position, while at the same time being adapted for rotation in its seat to effect adjustment for elevation, or vibrated horizontally in either direction to permit the normal reciprocatory action of the bolt in said type of firearms, substantially in the manner and for the purpose specified.

7. In a sight mechanism for firearms of the class described, or bolt-gun type, the combination of a mounting or lever attachment hinged or pivoted to the side of the breech or barrel, carrying the locking projection for securing the bolt in place, and having a vertical bearing or socket, an adjusting-nut received in said bearing, clamping means for holding the nut securely in the socket, a sight-post fitting the bearing and said nut, having a lengthwise groove and provided with an arm overhanging the axis of the barrel and carrying the sight mounted for horizontal rotation, a camming plunger guided in a socket in the lever and adapted to engage the groove of the sight-post, and a spring for actuating the plunger into such engagement with the sight-post, whereby by the action of the spring and plunger the sight-post and its sight-arm will be rotatively cammed into normal position, while at the same time being adapted for rotation in its seat to effect the vertical adjustment of the sight, and a limited vibration in either direction to permit the normal reciprocatory action of the bolt in said type of firearms, substantially as and for the purpose specified.

WILLIAM LYMAN.

Witnesses:

LYMAN A. MILLS,
ISADELL L. COOK.