(No Model.)

W. LYMAN.

FOLDING SIGHT FOR FIRE ARMS.

No. 396,043. Patented Jan. 8, 1889.

Fig. 1

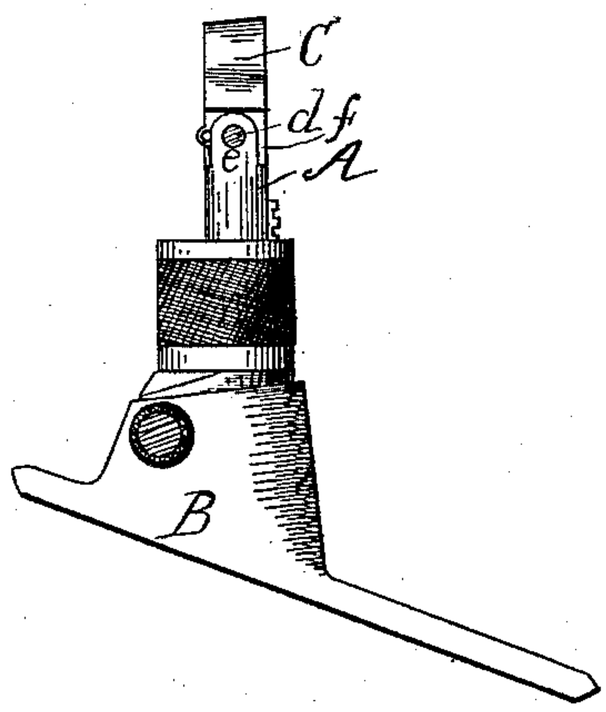


Fig. 2

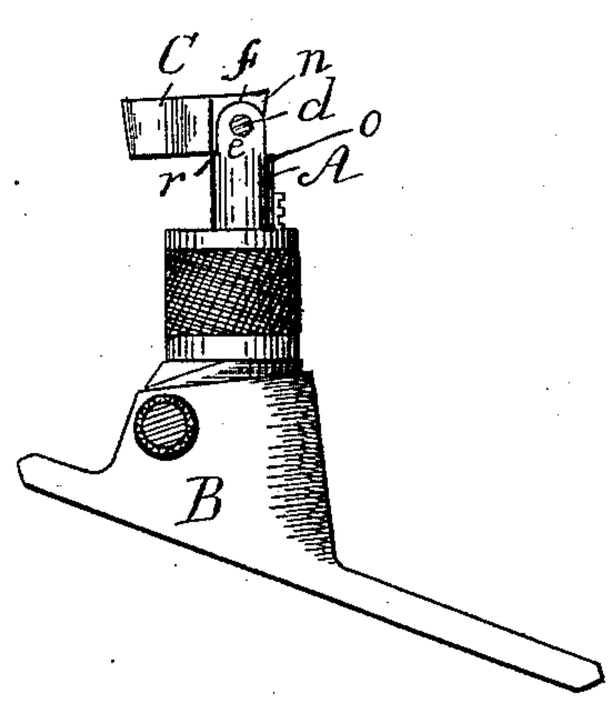


Fig. 3

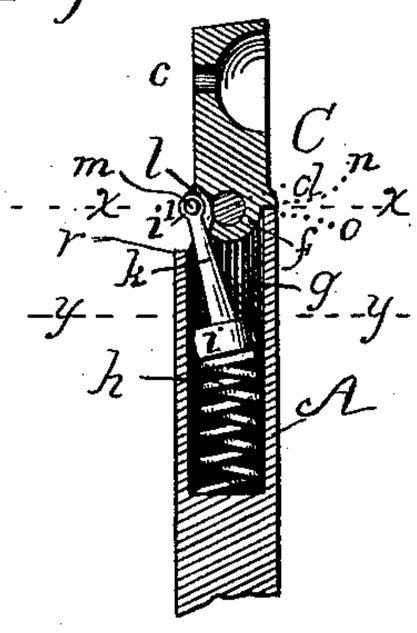


Fig. 4

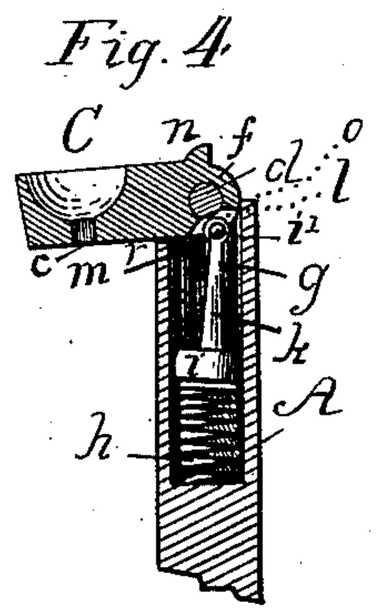


Fig. 5

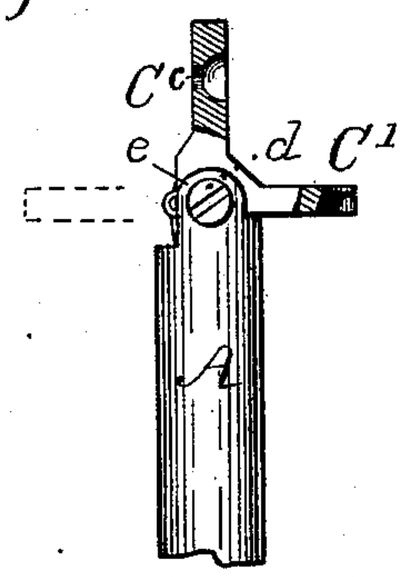


Fig. 6

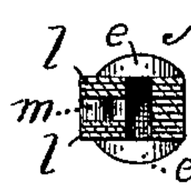


Fig. 7

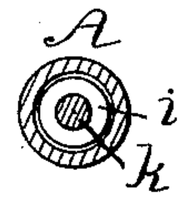


Fig. 8

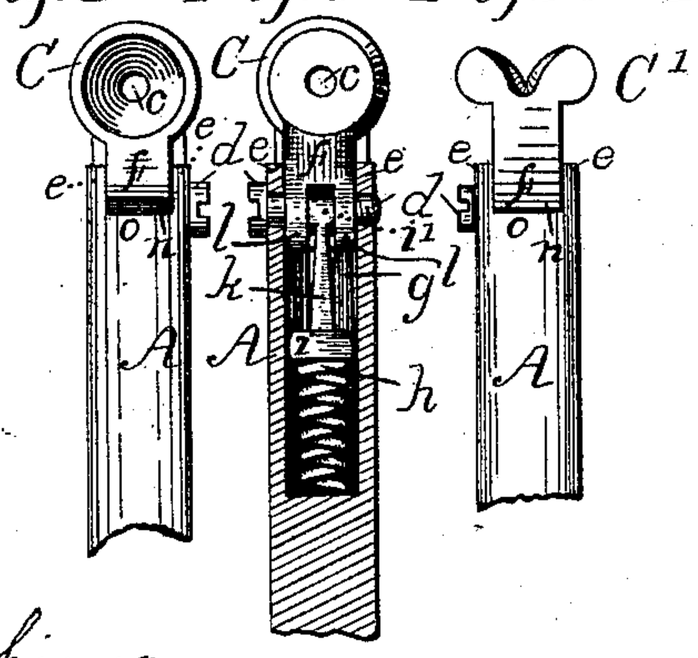
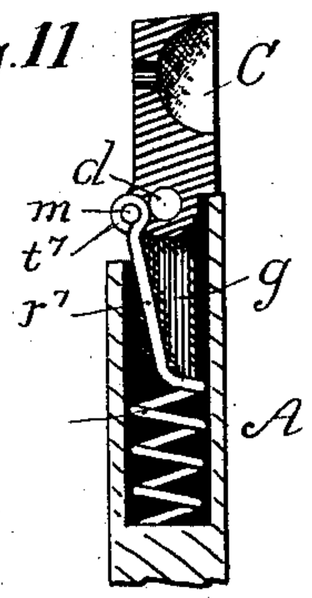


Fig. 9

Fig. 10

Fig. 11



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UNITED STATES PATENT OFFICE.

WILLIAM LYMAN, OF MIDDLEFIELD, CONNECTICUT.

FOLDING SIGHT FOR FIRE-ARMS.

SPECIFICATION forming part of Letters Patent No. 396,043, dated January 8, 1889.

Application filed July 10, 1888. Serial No. 279,517. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM LYMAN, of the town of Middlefield, in the State of Connecticut, have invented certain new and useful Improvements in Folding Sights for Fire-Arms, of which the following is a specification.

My invention relates to a folding sight for fire-arms, and has for its object to provide spring mechanism for holding a folding sight in its respective raised and depressed positions, and adapting the same to be readily thrown into or out of use or turned to present different sight-apertures or ranges firmly held in each position, but permitting instant change.

The invention consists of the novel combination, with the folding and fixed parts of the sight, of a crank, pitman, and spring, all suitably arranged to direct the pressure of the spring upon the folding part of the sight to hold it in place at either extremity of its throw, as hereinafter more particularly described and claimed.

The invention is particularly adapted and intended for use in that class of rear sights which are shown and described in United States Letters Patent Nos. 211,753, 298,305, and 368,598, respectively granted to me January 28, 1879, May 6, 1884, and August 23, 1887.

In the accompanying drawings, forming a part of this specification, Figure 1 represents a rear or tang wind-gage sight, such as is shown in the latter patent above referred to, provided with my improved spring mechanism for securing the folding part of the sight, which is shown in position for taking aim. Fig. 2 is a similar view showing the sight-piece folded down. Fig. 3 is an enlarged vertical section through the upper part of the sight, lengthwise to the barrel, with the sight-piece raised for aiming; and Fig. 4 is a similar view with the sight-piece folded down. Fig. 5 is an enlarged elevation of the upper part of a sight having two different sight-pieces or "eye-openings," either of which is folded down as the other is brought into aiming position. Fig. 6 is a cross-section through the sight-post in the plane of the folding hinge designated by the line $x\ x$, Fig. 3. Fig. 7 is a cross-section through the sight-post and pitman on the line $y\ y$, Fig. 3. Fig. 8 is a front view of Fig. 3; and Fig. 9 is a rear view of the same, partly in section. Fig. 10 is a front view of Fig. 5, showing the sight-piece in what corresponds to the folded-down positions of the other figures. Fig. 11 is a vertical section through the sight-post, showing a modification of the spring and pitman formed integral.

Referring to the drawings, A designates the sight-post, which in various modifications may be seen in each of the several patents before referred to. It is shown mounted in a suitable base, B, and provided with mechanism for effecting its elevation, all of which is set forth in Patent No. 368,598, and need not be here further described.

The sight-piece proper, C, or part having the sight-aperture *c*, is hinged to the sight-post by means of a screw or pivot, *d*, which passes through suitable ears, *e*, on the post and a tongue, *f*, on the sight, which is fitted between the ears of the post in a nice but free joint, thus permitting the sight-piece to fold forward from its vertical position to a horizontal plane.

The sight-post is made hollow from the top down as far as may be required to form a vertical circular recess or chamber, *g*. A spiral spring, *h*, is inserted in the chamber, resting upon the bottom thereof, as shown in Figs. 3, 4, and 9. In the chamber above the spring is a sort of plunger or piston, *i*, which fits loosely in the chamber, resting upon the spring, and has a neck, *k*, or connecting rod, which projects upward to the sight-piece C. The upper end of the connecting-rod is formed with an eye, *i'*, and, fitted between two perforated ears, *l*, on the forward side of the sight-piece, pivoted thereto by a pivot, *m*, thus forming a sort of pitman. The position of the pivot *m* in the ears is slightly below a horizontal plane through the hinge of the sight-piece when the sight-piece is vertical, and the spring *h* is made of the proper length to press up against the piston *i*, and thus hold the sight-piece in its vertical position.

In operation, as the sight-piece is folded down to, or, preferably, somewhat below, the horizontal position, the spring *h* will be compressed, and the pivot *m* and upper end of the pitman will be carried past the "dead-center" or vertical plane centrally through

the spring-chamber and the hinge *d* of the sight-piece, as shown in Fig. 4, thus occupying a position to the rearward of such plane, so that the spring presses upward on the rear end of the sight-piece, and thus holds the sight-piece folded down.

The position of the pitman-pivot in the ears *l* may be varied somewhat from that shown in the drawings, it only being necessary that the pivot shall pass the dead-center as the sight-piece is turned, so that the spring will hold the sight-piece secure at both extremities of its swing. As it is most important to hold the sight rigidly in the aiming position, and as it is more liable to be knocked forward than backward, I prefer to arrange the pivot so that the spring will press on the sight-piece to the best advantage when the sight-piece is in a vertical position. The arrangement shown is very effective, as it holds the sight sufficiently secure and readily permits the folding of the sight-piece in either direction.

It is often desirable to place an extra sight on a fire-arm, so that one may be thrown into use as the other is folded down, or vice versa. This may be required for the purpose of presenting two different classes of sights, two different ranges or sight-apertures, or sights, respectively, of different range and aperture. Such construction is shown in Figs. 5 and 10, where the regular sight C is a peep-sight—that is, a small circular aperture for the eye—and the extra sight C′ is an "open sight" or simple notch, which is used extensively in military practice. The open sight-piece C′ is formed integral with the main peep-sight piece C, but projecting at right angles to the main piece on its rearward side. As the main sight-piece is folded down to the position shown by the dotted lines in Fig. 5, the open sight is thrown up into aiming position, as shown in Fig. 10. With this construction it is best to pivot the pitman to the sight-piece, so that its pivot will swing nearly an equal distance each side of the dead-center, and thus hold each sight-piece equally secure in the position for aiming.

The sight-piece is provided with a stop, *n*, which strikes against a shoulder, *o*, on the rear side of the sight-post as the spring *h* forces the sight into the position for aiming, so that the sight is always brought firmly up to the same place and not allowed to pass by such point.

When folded down, the front side of the sight-piece comes in contact with a shoulder, *r*, on the front side of the post A, which prevents the sight-piece from being carried too far down by the action of the spring when folded down. I have shown the sight-piece folded somewhat below or past a horizontal plane; but its swing may be varied, as desired, by suitable arrangement of the said stop-shoulders.

In the class of sights here shown and described the sight-piece is hinged above the elevating mechanism; but my improvement is applicable to sights not of this character as well. For instance, if a sight-piece is hinged to the base of the sight, a vertical chamber may be formed in the base to receive the spring and pitman, instead of in the sight-post. In such case the sight-post would be pivoted to the base the same as the sight-piece is now pivoted to the post; but the nature of my invention would not be changed by such construction. The form of the spring may be also varied when it is arranged in the base—as, for instance, a loop or V-shaped spring might be employed with one end held or guided suitably in the base and the other attached to or bearing against the pitman. It will be seen, also, that if the upper end of the spiral spring be left straight and formed to project upward from the coiled part of the spring such straight portion of the wire could be made to serve as the pitman or connecting-rod by having an eye, t^7, bent upon its end and received upon the pivot *m*, as is shown in Fig. 11. As the pivot is swung in its arc, the coils of the spiral part would compress on one side and expand on the other sufficiently to readily permit the straight part r^7 of the wire to swing as easily as if such straight portion were pivoted to the coiled part or simply rested upon the spring, as shown in the other figures, which this construction is the equivalent of.

I therefore claim—

1. In folding sights for fire-arms, the combination of a base, post, or supporting part for the folding sight-piece, having a seat or guide for receiving or holding a spring, the folding sight-piece hinged or pivoted to the supporting part and adapted to swing down from the vertical or aiming position, stops on the fixed and folding parts for limiting the swing of the sight-piece, a spring contained or guided in the supporting part, and a connecting-piece between the spring and the folding sight-piece in position to swing to each side of the central plane through the sight-hinge and spring as the sight is folded up or down, and thus direct the pressure of the spring upon the sight-piece to hold it securely in place at each extremity of its throw.

2. In folding sights for fire-arms, the combination of a base or supporting part for the sight-piece, having a seat or guide for receiving or holding a spring, the folding sight-piece hinged to the supporting part and adapted to swing down from the vertical or aiming position, a spring contained or guided in the supporting part, a pitman or connecting-piece resting upon and guided subject to the expansion of the spring at the lower end and pivoted or hinged to the folding sight-piece at its upper end in position to adapt the spring to hold the sight-piece securely at either extremity of its swing, and suitable stop-shoulders on the sight-piece and supporting part to limit the folding movement of the sight-piece, for the purpose described.

3. In folding sights for fire-arms, the com-

bination, with the sight-post having a barrel chamber or recess to receive a spring, of the folding sight-piece hinged to the sight-post above the spring-chamber, a spiral spring received in the chamber or recess of the sight-post, and a pitman or connecting-piece attached to or bearing upon the spring at one end and attached or pivoted to the folding sight-piece at the opposite end at a point forward of a central line through the hinge thereof and the spring when the sight-piece is elevated and sufficiently near such line to swing by to the opposite side thereof as the sight-piece is depressed, whereby the spring is adapted to hold the sight-piece either in the aiming or in the depressed position, as specified.

4. In folding sights for fire-arms, the combination, with the sight-post A, having a barrel chamber or recess, *g*, the folding sight-piece C, hinged to the sight-post, a spiral spring, *h*, received in the chamber or recess of the sight-post, and a pitman or connecting part fitted in the barrel of the sight-post at its lower end, resting upon the spring, and pivoted at its upper end to the folding sight-piece forward of its hinge and in such position that the thrust of the spring is brought against the sight-piece to hold it in a vertical position, and when the sight-piece is folded down to press against the same on the opposite side of its hinge and hold the sight depressed, substantially in the manner described.

WILLIAM LYMAN.

Witnesses:
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ISADELL L. COOK.