No. 795,468. PATENTED JULY 25, 1905.

J. WINDRIDGE.

SIGHT FOR FIREARMS.

APPLICATION FILED MAR. 27, 1905.

Fig. 1

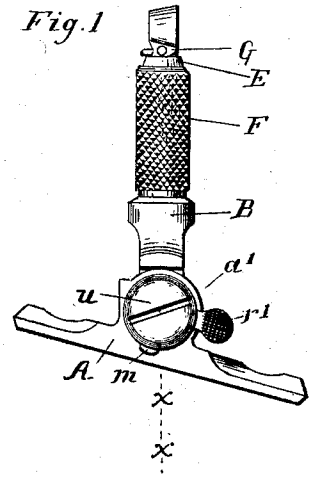


Fig. 2

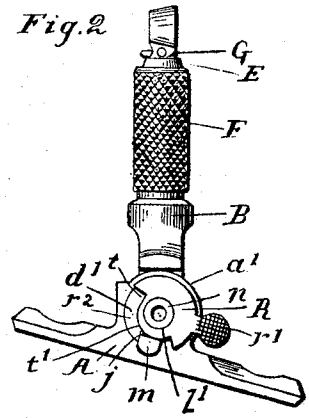


Fig. 3

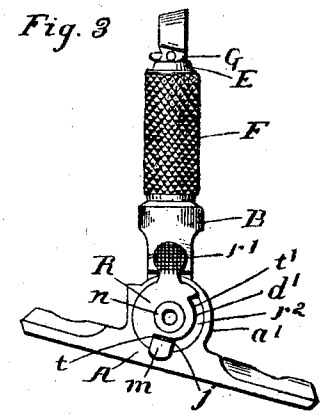


Fig. 4

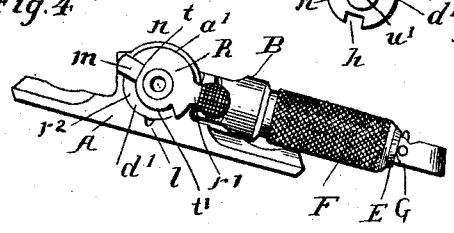


Fig. 12

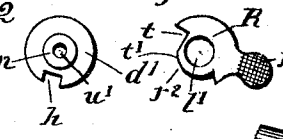


Fig. 13

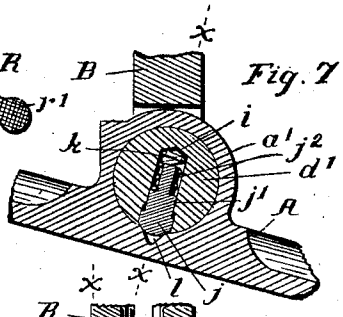


Fig. 5

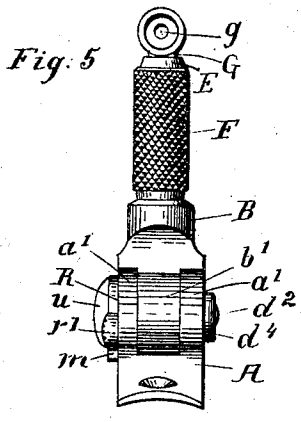


Fig. 6

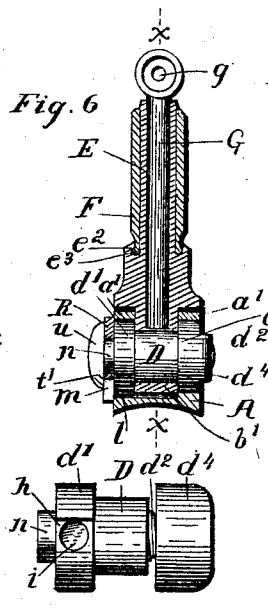


Fig. 7

Fig. 8

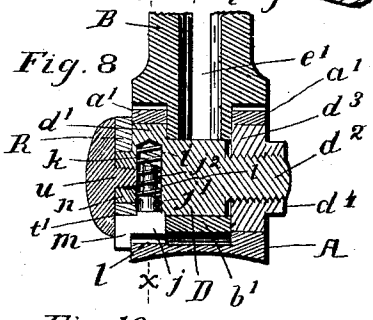


Fig. 9

Fig. 10

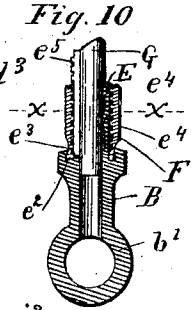


Fig. 11

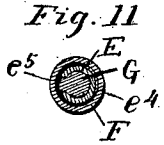
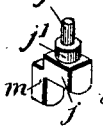


Fig. 14



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Attorney

UNITED STATES PATENT OFFICE.

JAMES WINDRIDGE, OF MIDDLEFIELD, CONNECTICUT, ASSIGNOR TO THE LYMAN GUN SIGHT CORPORATION, OF MIDDLEFIELD, CONNECTICUT, A CORPORATION OF CONNECTICUT.

SIGHT FOR FIREARMS.

No. 795,468. Specification of Letters Patent. Patented July 25, 1905.

Application filed March 27, 1905. Serial No. 252,408.

To all whom it may concern:

Be it known that I, JAMES WINDRIDGE, a citizen of the United States, and a resident of 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 full, clear, and exact specification.

My invention relates to an improvement in folding rear sights for firearms or that class in which the sight is hinged to the base and yieldingly held in the elevated or sighting position by means of a spring-actuated holding tooth or detent.

The invention has for its object to provide means for locking the sight in the elevated or sighting position secure against displacement by contact with twigs or by jarring in carrying or handling the gun.

The invention consists in the novel arrangement and combination, with the spring-actuated holding-detent, of a rotary locking-key and operating-lever and in the construction of parts, as hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a side view of my improved sight, shown in the elevated or normal sighting position with the "joint" or folding part immovably secured with reference to the base by means of the locking-key. Fig. 2 is a similar elevation with the cap-screw u removed to show the locking mechanism. Fig. 3 is a similar elevation to Fig. 2, but showing the locking mechanism released. Fig. 4 is a view similar to Fig. 3, but showing the joint or sighting member folded down rearwardly upon the base. Fig. 5 is a rear elevation of the sight in the sighting position and as presented to the eye in aiming. Fig. 6 is a vertical transverse section on the central line $x\ x$ of Fig. 1. Fig. 7 is a sectional view on the line $x\ x$, Fig. 8, enlarged. Fig. 8 is a sectional view on the line $x\ x$, Fig. 7, enlarged. Fig. 9 is a plan of the hinge-bolt, viewed from below, enlarged. Fig. 10 is a vertical section through the joint on the line $x\ x$ of Fig. 6. Fig. 11 is a horizontal cross-section on the line $x\ x$ of Fig. 10. Fig. 12 is an end view of the hinge-bolt. Fig. 13 is a view of the rotary key. Fig. 14 is a perspective view of the detent enlarged.

The form of sight in which my improvements are herein embodied comprise a base having a pair of upright ears and a folding part provided with a tongue or joint fitted between the ears and having trunnions journaled therein, the trunnions consisting of a detachable pivotal part or hinge-bolt fitted through the tongue and held by a nut which forms one of the trunnions.

Referring to the drawings, A designates the base of the sight, adapted for being mounted on the firearm rearwardly of the barrel. It is provided with the vertical transversely-perforated hinge bearings or ears a', between which the hinge-eye b' of the joint B is fitted, with its perforation concentric with those of the bearings, but of somewhat smaller diameter. Through these parts is passed a bolt D, fitting the hinge-eye b', and having a cylindrical head d' journaled in one of the hinge-bearings and a screw-threaded portion d^2, whereon is screwed a cylindrical nut d^3, journaled in the other hinge-bearing. The nut projects slightly outside of the bearing, and such projecting portion is milled away to provide the parallel-sided part d^4 for the application of a wrench to screw the nut to place. When the nut is tightly screwed against the hinge-eye b', thus correspondingly clamping the head d' against the opposite surface of the hinge-eye, the bolt-head and nut are rigidly held with reference to the joint and comprise trunnions on which the latter is swung in the hinge-bearings of the base, enabling the sight to be folded down rearwardly from the vertical or sighting position (shown in Fig. 1) flat upon the base and out of the way when not in use. The upper part of the joint comprises a vertical cylindrical shell E, having a retangular key-way e' milled throughout its length and extending down to the perforation of the hinge-eye. An annular seat e^2 is milled in the joint around the base of this shell to receive the lower end of a sleeve F, having a slight head or shoulder e^3, over which the metal of the joint is swaged to hold the sleeve in place vertically, but not so tightly as to prevent the free rotation of the sleeve in the seat thus formed. Said sleeve is screw-threaded internally, and the threads e^4 of the screw are engaged with the teeth e^5 of a rack formed on one side of a sight-post G, fitted in the key-way e', as shown in Fig. 10, the teeth of the rack being projected exterior to the circum-

ference of the shell E, as shown in said figure, comprising a portion of the thread of a screw of which the toothed side of the sight-post is a segment. The upper end of the sight-post is provided with the circular peep-sight orifice g, which may be adjusted at different heights by turning the sleeve F, and thereby elevating or depressing the sight-post G and its rack. These parts are old and well-known and here require no further description, the novel features of my improvement being as follows:

In the cylindrical head d' of the hinge-bolt D a radial keyway h is provided, and in line therewith is a radial cylindrical cavity i of somewhat less diameter than the width of the keyway. A detent j is fitted in the keyway h, provided with a cylindrical bearing j', fitting the cavity i, and a stem j^2 of lesser diameter which is entered in a coiled spring k, received in the cavity and adapted to press upon the shoulder formed by the difference of diameter between the stem and the bearing j' to thrust the detent outwardly. The outer end of the detent is slightly rounded in the direction of the circumference of the bolt-head and adapted to yieldingly engage a notch l in the base on the lower side of the bearing therein. The rounded or inclined surface aforesaid, while forming a sufficient shoulder to normally retain the hinge-bolt stationary in the base, serves to cam the detent out of engagement with the edge of the notch when a certain amount of pressure is applied to turn the joint B in the bearing. The detent is provided with an offset part m, projecting laterally beyond the plane of the end face of the hinge-bolt and extended radially somewhat beyond the rounded outer end of the detent proper to cover and conceal the notch l of the base and provide additional bearing-surface for guiding the detent in its seat. Projecting from the end face of the head d' of the hinge-bolt is a central circular hub n of the same width or axial length as the detent j. On the hub is journaled a rotary key R, which substantially comprises a disk formed with the projecting handle r', and a central perforation l', fitting the hub n and cut away on one side, as shown, to provide a segmental space r^2, adapted to receive the offset part m of the detent and permit a certain amount of rotary movement of the key on its journal, in the present instance comprising about one-third of a complete revolution. The position of the space r^2 with reference to the handle r' is such that the offset part m is at the forward end thereof when the handle is in the vertical position shown in Fig. 3, permitting the handle to be turned rearwardly and down from said position to the position shown in Figs. 1 and 2 when the sight is in the vertical position. At its forward end the space r^2 is proportioned to form a seat t of sufficient size to receive the offset part m of the detent when the latter is disengaged from the notch of the base, as shown in Fig. 4, which configuration will provide a clearance-space between the offset part and key when the detent is engaged with the notch of the base, as shown in Fig. 3. The remaining portion of the space r^2 is proportioned to just receive the offset part m when the detent is engaged with the notch of the base—that is, the curved surface t' of the key bears upon or contacts with the offset part m through said remaining portion of the space when the detent is engaged with the notch l. Thus in operation with the detent engaged with the notch l if the key be rotated rearwardly to the position shown in Figs. 1 and 2 the key will bear upon the offset part m and lock the detent in said notch. This effect will be insured if the surface t' be made concentric with the center of said rotary movement; but it is preferable to proportion said surface t' slightly eccentric to the center of the hub m, so that the surface will bind on the offset part m as the key approaches the position shown in said Figs. 1 and 2. The amount of such eccentricity, however, need not be great, and preferably should be very small, as the amount of movement of the key R from the vertical position necessary to lock the detent will in such case also be correspondingly small. The rotary key R is held in place on the hub n by a cap-screw u, screwed into a central screw-threaded perforation u' in the hub and having its head of sufficient size to fully cover and protect the key, as shown in Fig. 1.

In operation the hinge-bolt D is adjusted in the joint B with reference to the angle which the base assumes with reference to the line of sight for the particular firearm upon which it is mounted. This is easily accomplished by setting the sight in the vertical position—that is, at a right angle to the axis of the gun-barrel. Then after turning the hinge-bolt until the detent j engages the notch l of the base the nut may be screwed up to rigidly clamp the bolt to the joint. The sight may then be positively locked in said position by turning the rotary key to swing its handle d^3 down from the vertical position, as shown in Fig. 2. To fold the sight down from the sighting position, it is only necessary to first swing the key R up to the vertical position, as shown in Fig. 3, which provides a clearance-space above the offset part of the detent to permit the latter to be lifted from engagement with the notch, as hereinbefore described. The outer side of the handle d^3 should be knurled or roughened to facilitate its operation by thumb-pressure thereon.

I claim and desire to secure by Letters Patent—

1. In a folding sight for firearms, the combination of a base having a locking-notch, a folding-sight member hinged to the base and provided with a locking-detent, and a movable key adapted to engage the detent to lock it in

engagement with the base, substantially as and for the purpose specified.

2. In a folding sight for firearms, the combination of a base having a locking-notch, a folding-sight member hinged to the base and provided with a locking-detent, and a rotary key hinged to the sight member and adapted to engage the detent to lock it in engagement with the base, substantially as and for the purpose specified.

3. In folding sights for firearms, the combination of a base provided with hinge ears or bearings and having a locking-notch in one of the bearings, a folding part or joint fitted between the bearings of the base and provided with cylindrical trunnions journaled in the bearings, a locking-detent carried by one of the trunnions adapted to engage the notch of the base, and a locking-key adapted to lock the detent in engagement with the notch of the base, substantially as and for the purpose specified.

4. In a folding sight for firearms, the combination of a base provided with hinge ears or bearings, and having a locking-notch in one of the bearings, a folding part or joint fitted between the bearings of the base and provided with cylindrical trunnions journaled in the bearings, a radially-acting spring-pressed locking-detent seated in one of the trunnions of the joint, and a rotary key journaled on the trunnion and adapted to abut or bear upon the detent to hold it outwardly and in engagement with the notch of the base, and having a recess for permitting the withdrawal of the detent from the locking-notch, substantially in the manner and for the purpose specified.

5. In folding sights for firearms, the combination of a base provided with hinge ears or bearings and having a detent-notch in one of the bearings, a folding part or joint provided with a hinge-eye fitted between the bearings, a bolt fitted through the hinge-eye of the joint provided with a cylindrical head journaled on one of the hinge-bearings of the base, a radially-acting spring-pressed detent seated in said head, and a rotary key journaled on said head and abutting upon the key to hold it engaged with the detent-notch of the base and provided with a recess for permitting the withdrawal of the detent from the detent-notch, whereby the key may be adjusted to lock the detent in or relieve it from engagement with the notch of the base, substantially in the manner and for the purpose specified.

6. In a folding sight for firearms, the combination of a base provided with hinge ears or bearings, a folding part or joint provided with a hinge-eye fitted between the bearings, a bolt fitted through the hinge-eye of the joint provided with a cylindrical head journaled in one of the bearings of the base and having a radial guiding way or cavity, a detent seated and guided in said way or cavity and provided with an offset part projecting beyond the head, a spring arranged to act upon the detent to press it outwardly, and a rotary key journaled upon the head and engaging the offset of the detent to lock the detent in the notch of the base, and provided with a recess for the reception of the offset in the withdrawal of the detent from the notch of the base, substantially in the manner and for the purpose specified.

7. In a folding sight for firearms, the combination of a base having a locking-notch, a folding-sight member hinged to the base, a radially-movable detent seated in the sight member and provided with an offset part or bearing, a spring acting to press the detent outwardly, the rotary key hinged to the sight member having a recess for the reception of the offset part of the detent as the detent is removed from the notch, and a curved surface bearing upon the offset when the detent is engaged with the notch, and a cap for securing the rotary key upon its journal or bearing, substantially as and for the purposes specified.

8. In a folding sight for firearms, the combination of the base, A, having the ears, a', and locking-notch, l, the folding-sight member, b', fitted between the ears of the base, the hinge-bolt, D, clamped to the folding-sight member and having a head journaled in one of the ears of the base, and a cylindrical hub, n, projecting axially from said head, the radially-movable detent, j, seated in said head and provided with an offset part projecting in the plane of the said hub, a spring for actuating the detent radially outward from the axis of the bolt to engage the notch of the base, a rotary key journaled on said hub having a recess to receive the offset of the detent as the detent is withdrawn from the notch, and a curved part, t', fitting and filling the space between the hub and offset when the detent is engaged with the notch, and provided with a lever or handle, d^3, and a cap, u, screwed to the head of the hinge-bolt to hold the key in place, substantially in the manner and for the purpose specified.

Signed by me at Middlefield, Connecticut, this 23d day of March, 1905.

JAMES WINDRIDGE.

Witnesses:

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LYMAN A. MILLS.