No. 860,429. PATENTED JULY 16, 1907.

J. WINDRIDGE & G. S. WILCOX.

SIGHT FOR FIREARMS.

APPLICATION FILED JULY 2, 1906.

Fig. 1

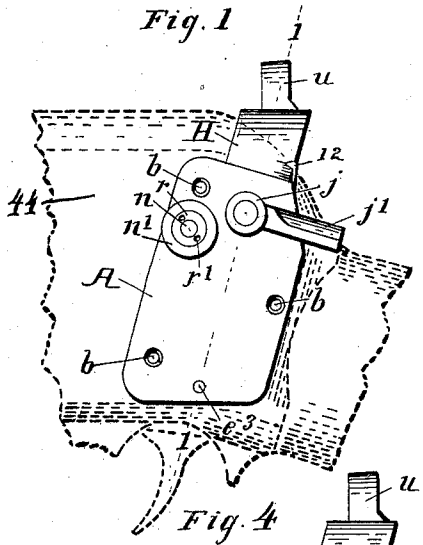


Fig. 2

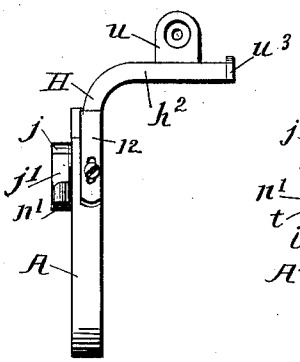


Fig. 3

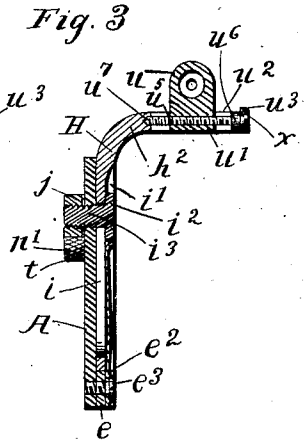


Fig. 4

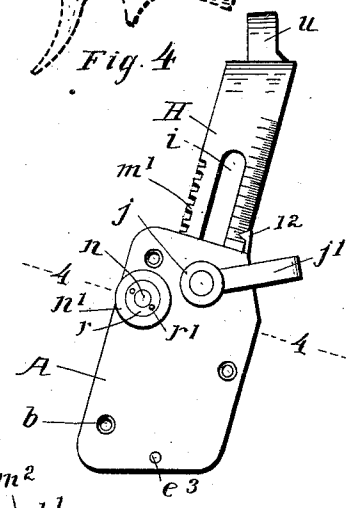


Fig. 5

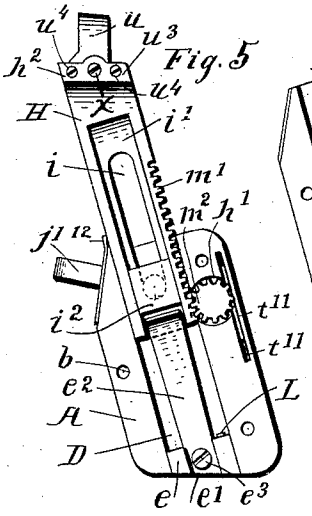


Fig. 6

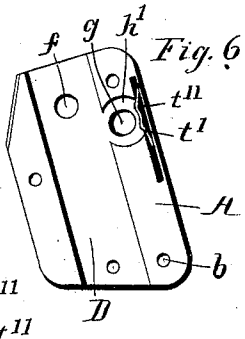


Fig. 10

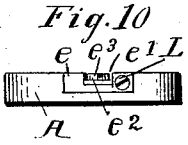


Fig. 7

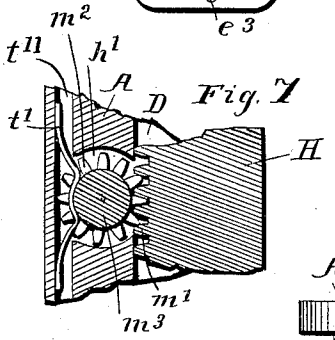


Fig. 8

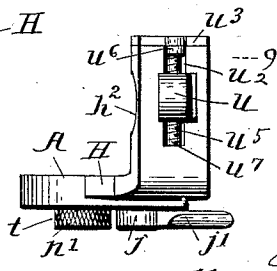


Fig. 9

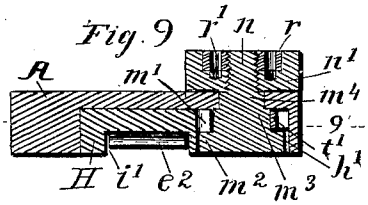
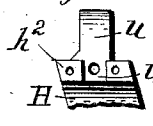


Fig. 11



Witnesses:

J. L. Lawlor.

G. M. Coffenbaver.

Inventors:

James Windridge, and

George S. Wilcox. By

George L. Barnes, Atty.

UNITED STATES PATENT OFFICE.

JAMES WINDRIDGE AND GEORGE S. WILCOX, OF MIDDLEFIELD, CONNECTICUT, ASSIGNORS TO THE LYMAN GUN SIGHT CORPORATION, OF MIDDLEFIELD, CONNECTICUT, A CORPORATION OF CONNECTICUT.

SIGHT FOR FIREARMS.

No. 860,429. Specification of Letters Patent. Patented July 16, 1907.

Application filed July 2, 1906. Serial No. 324,478.

To all whom it may concern:

Be it known that we, JAMES WINDRIDGE and GEORGE S. WILCOX, citizens 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.

Our invention relates to a rear sight for firearms, of the class in which the base plate or stationary part of the mechanism is secured to the side of the arm at the rear end of the frame with the sight limb guided vertically therein and having a horizontal sight carrying part overhanging the axis of the barrel.

The object of the improvement is to provide means for effecting the adjustment of the sight quickly and with facility, and to render the mechanism more simple, reliable and efficient, and easy of application to the arm.

The invention consists in the novel mechanism for guiding, elevating and securing the sight limb, and means for effecting the lateral adjustment of the sight, and in the 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 side elevation of our improved sight considered in respect to its combination with and position upon a firearm. Fig. 2 is a rear end view, considered in its relation to the arm. Fig. 3 is a rear end view of a vertical cross section on the line 1, 1, Fig. 1. Fig. 4 is a view similar to Fig. 1 but showing the sight limb elevated. Fig. 5 is a reversed view of Fig. 4, showing the inner side of the device. Fig. 6 is a similar view of the base plate with the other parts removed. Fig. 7 is a vertical lengthwise section on the line 9, 9, Fig. 9. Fig. 8 is a plan view of the sight as shown in Figs. 1 and 2. Fig. 9 is a horizontal cross section on the line 4, 4, Fig. 4. Fig. 10 is a view of the lower end of the sight. Fig. 11 is an end view of the sight carrying part with the cap u^3 and screw arbor u^5 removed.

Referring to the drawings, A designates the base plate of our improved sight, which is designed for attachment to the vertical flat side of the frame of the firearm at the rear end thereof, as indicated by the dotted lines in Fig. 1, by means of suitable holding screws inserted through the perforations b provided for that purpose. As the rear edge or limit of said flat area 44 of the frame is usually squared with the neck of the stock, the base plate may be set correspondingly oblique to the axis of the barrel, thus tilting the sight backward from the vertical, as shown and bringing it as far rearward as possible.

The base plate is formed with an upright groove or guide way D on its inner side, which is preferably milled throughout its length and afterward closed at the lower end by a block e fitted therein. In the center line of said guideway near its upper end is a circular perforation f, and adjacent to the guideway on the forward side thereof is a perforation g having a concentric seat h^1 around it counterbored in to the depth of the guideway and slightly cutting into or overlapping upon it as shown in Fig. 6.

Freely fitting in the guide way D of the base plate is the sight limb H provided with the horizontal sight carrying part h^2 overhanging the axis of the gun barrel. Said sight limb is formed with a central longitudinal slot i of the width of and coinciding with the perforation f of the base plate, and corresponding in length to the movement or travel of the sight limb in its guideway. A longitudinal recess or channel i^1 is formed on the inner side of the sight limb, of somewhat greater width than the slot i, and extending from the lower end of the limb to a point above the upper end of the slot. Said channel receives the rectangular head i^2 of a bolt i^3 which is passed through the slot i of the sight limb H and the perforation f of the base plate. The outer projecting end of the bolt is screw threaded to receive a nut j provided with a lever or thumb piece j^1 in the form of a bar or arm for turning the nut and thus in operation clamping the sight limb stationary in its guiding way. A slight movement of the lever is sufficient to clamp the sight limb rigid or release it for adjustment as required, the degree of said movement being shown by the clamped and unclamped positions of the lever, respectively shown in Figs. 1 and 4. In said movement the bolt is held from turning by the engagement of its rectangular head with the sides of the channel i^1.

The block e has a central vertical groove e^1 which receives the lower end of a flat spring e^2 which is secured in place by a screw e^3 passed through both the spring and block and screwed into the base plate to hold both of said parts in place. The upper end of the said spring is received in the channel i^1 of the sight limb and serving as a friction device bears resiliently upon the limb to hold it in adjustment independently of the clamping mechanism, the limb traveling over the spring as it is moved in its guideway. The depth of the groove e^1 is nearly that of the channel i^1 and provides space for the reception of the spring and screw head, wholly below the inner surface of the base plate. The sight limb and head i^2 of the bolt i^3 should also lie slightly below said surface, and out of contact with the surface to which the base plate is attached. A screw

L is fitted vertically through the block e to provide an adjustable stop upon which the sight limb may bottom at the lowest or point blank position. The outer rear surface of the sight limb is graduated, which in connection with an indicator 12 secured to the rear edge of the base plate enables the sight limb to be set at any designated elevation.

The sight limb is furnished with a rack m^1 on its forward edge, the teeth of which are intermeshed with a suitable pinion m^2 received in the seat h^1 of the base plate. The teeth of the pinion are about half the depth of the seat, and a hub m^3 is provided in the remaining space for the purpose hereinafter specified. A journal part m^4 projecting from said hub is fitted through the circular perforation g of the base plate and extended beyond the same in a reduced, screw threaded portion n which receives a circular nut n^1 screwed tightly against the shoulder of the journal part m^4 formed by the reduced size of the threaded part n. The central part of the nut on the outer side is recessed to receive a circular jam nut r which is tightly screwed against the main nut n^1 to hold the latter firmly upon the screw threaded part n. Holes r^1 are drilled in both the jam nut and the surface of the main nut beneath it for the application of a forked wrench to turn the parts in assembling or removing them. The edge t of the main nut n^1 is suitably knurled to provide a holding surface for rotating it in operation, which by revolving the pinion m^2 intermeshing with the teeth of the rack m^1 raises or lowers the sight limb to accomplish the required elevation of the sight.

To prevent play or lost motion between the teeth of the rack and pinion the perforation g is extended slightly from the circular form on the side toward the guideway D and a spring is employed to press the pinion in that direction and hold the parts in contact, the configuration of the teeth being such that they will contact on their pitch line before bottoming at the points. The spring comprises a thin flat bar t^1 received in a slot t^{11} in the base plate and bent as shown to yieldingly engage the side of the slot at its ends and the hub m^3 at the central part, as shown in Fig. 7. In assembling the parts the spring is first inserted in the slot as shown in Fig. 6 after which the pinion when put in place will hold the spring in its seat as shown in Figs. 5, 7 and 9.

The sight u is provided with a tongue u^1 fitted in a slot u^2 extended lengthwise of the sight carrying part h^2 of the sight limb, and bridged at the end by a cap u^3 secured by a screw u^4 screwed into the end of each of the branches of the sight part divided by the slot. Said cap is perforated to receive the end x of a screw arbor u^5 provided with a thrust collar u^6 back of said cap, and having its opposite end u^7 journaled in the sight piece as shown in Fig. 3. Said screw arbor is screwed through the sight and its outer end is slotted for application of a screw driver, whereby it may be turned to adjust the sight laterally by its screw action thereon as it rotates within it.

In sights of the class described it is important that the mean position of the lever or handle of the clamping nut should be substantially horizontal on the rear side of the center of motion, as shown. As the head i^2 of the bolt i^3 is rectangular and fits the channel i^1 whichever way it is turned, four changes of the position of the said lever are rendered possible, according as the bolt head is placed in its seat, and one of these positions must approximate to that desired. This construction dispenses with the expensive and troublesome requirement of cutting the screw thread of the bolt and its nut in special relation to the parts, and permits easy adjustment to compensate for wear.

In operation, the sight limb can be easily moved without the use of the rack and pinion, particularly lowered. In depressing it a long distance it would naturally and readily be accomplished by pressing downward on the top of the sight limb with the finger, after unlocking the clamping nut. But for close or small adjustment the rack and pinion must be employed. The spring e^2 holds the sight limb in place in its seat when the clamping nut is released, and thus prevents entrance of dirt into the bearings.

I claim and desire to secure by Letters Patent:

1. In a sight for firearms, the combination of a base plate, a sight limb slidably mounted on the side of the base plate next the firearm when the sight is applied thereto, said sight limb being provided with a vertical slot, a clamping device having a bolt-form member which passes through the slot in the sight limb and through an opening or perforation in the base plate which it fits, and a connection between said bolt member and said sight limb, which permits sliding movement of the sight limb without movement of the bolt member.

2. In a sight for fire-arms, the combination of a base plate, a sight limb slidably mounted on the side of the base plate next the firearm when the sight is applied thereto, said sight limb being provided with a vertical slot, a clamping device having a bolt-form member which passes through the slot in the sight limb and through an opening or perforation in the base plate which it fits, and a connection between said bolt member and said sight limb, which permits sliding movement of the sight limb without movement of the bolt member, and a rotatable device journaled in said base plate for sliding the said limb.

3. In a sight for firearms, the combination of a base plate having a groove or guideway and a perforation opening into the guideway, a sight limb fitted in the guideway having a slot and a channel, and a clamping device passing through the slot and perforation.

4. In a sight for firearms, the combination of a base plate having a groove or guideway and a perforation opening into the guideway, a sight limb fitted in the guideway having a slot and a channel, a bolt connecting said parts passing through the perforation and slot with its head seated in the channel of the sight limb, and a nut screwed upon the projecting end of the bolt to clamp the parts together.

5. In a sight for firearms, the combination of a base plate having a groove or guideway and a perforation opening into the guideway, a sight limb fitted in the guideway having a slot, a clamping device passing through the slot and perforation, and a spring for applying pressure to the sight limb.

6. In a sight for firearms, the combination of a base plate having a groove or guideway and a perforation opening into the guideway, a sight limb fitted in the guideway having a slot, a clamping device passing through the slot and perforation, and a brake acting on the sight limb.

7. In a sight for firearms, the combination of a base plate having a groove or guideway and a perforation opening into the guideway, a sight limb fitted in the guideway having a slot and a channel, a bolt connecting said parts through the perforation and slot with its head seated in the channel of the sight limb, a nut screwed upon the projecting end of the bolt to clamp the parts together, and a spring for pressing the sight limb upon its seat.

8. In a sight for firearms, the combination of a base plate having a groove or guideway and a perforation opening into the guideway, a sight limb fitted in the guideway having a slot and a channel, a bolt connecting said parts passing through the perforation and slot with its head

seated in the channel of the sight limb, a nut screwed upon the projecting end of the bolt to clamp the parts together, and a spring secured to the base plate and bearing upon the sight limb within the channel.

9. In a sight for firearms, the combination of a base plate having a groove or guideway and a perforation opening into the guideway, a sight limb fitted in the guideway having a slot, and provided with a rack, a stationary clamping device passing through the perforation and slot, and a pinion journaled in the base plate intermeshing with said rack.

10. In a sight for firearms, the combination of a base plate, a sight limb movable therein provided with a rack, a pinion journaled in the plate intermeshed with the rack and provided with an external knob or turning piece, and stationary means for clamping the sight limb to the plate as adjusted for elevation.

11. In a sight for firearms, the combination of a base plate, a sight limb movable therein provided with a rack, a pinion journaled in the plate intermeshed with the rack, and a spring to press the pinion in contact with the rack.

12. In a sight for firearms, the combination of a base plate, a sight limb movable therein provided with a rack, a pinion journaled in the plate intermeshed with the rack, a spring to press the pinion in contact with the rack, and means for clamping the sight limb to the plate as adjusted for elevation.

13. In a sight for firearms, the combination of a base plate, a sight limb slidably mounted thereon, a bolt to clamp said limb in position on the base plate having a fixed polygonal-sided head, means engaging any side of the head at a time to hold the bolt from rotation, and a nut on the bolt having an operating lever in the form of a bar or arm.

14. In a sight for firearms, the combination of a base plate, a sight limb slidably mounted thereon, a bolt to clamp said limb in position on the base plate having means to keep it from rotation consisting of a fixed polygonal-sided head fitting a channel in said limb in any one of several positions said head may be placed, and a nut on the bolt having an operating lever in the form of a bar or arm.

15. In a sight for firearms, the combination of a base plate, a sight limb slidably mounted thereon, a bolt to clamp said limb in position on the base plate, a nut on the bolt having an operating handle in the form of a bar or arm, and means to hold the bolt from rotation in any one of several positions in which it may be placed by rotation.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JAMES WINDRIDGE.
GEORGE S. WILCOX.

Witnesses:
GEORGE L. BARNES,
ALFRED H. AUGUR.