33-241. OR 1,307,647 SR

E. F. WATSON.
SIGHT FOR FIREARMS.
APPLICATION FILED NOV. 8, 1918.

1,307,647.

Patented June 24, 1919.

3 SHEETS—SHEET 1.

Fig. 1.

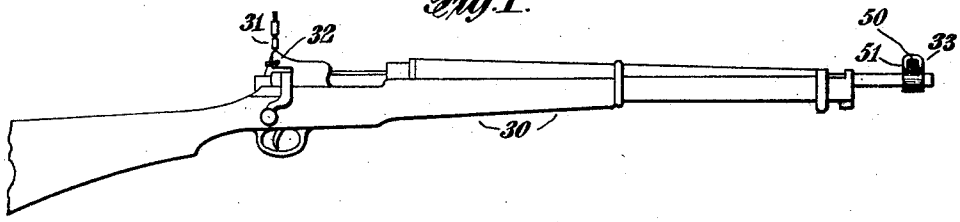


Fig. 2.

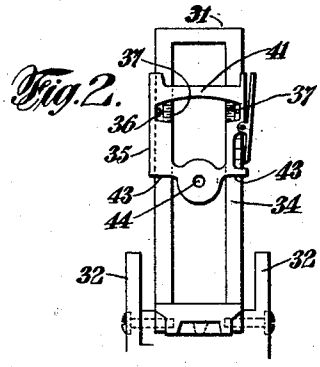


Fig. 3

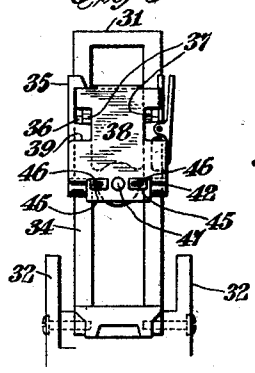


Fig. 4.

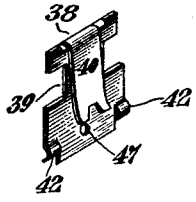


Fig. 5.

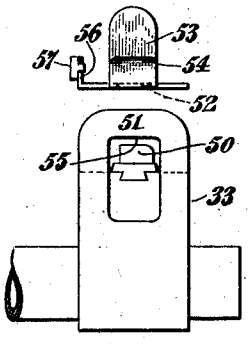


Fig. 6.

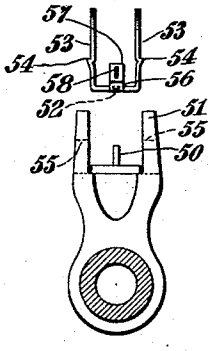


Fig. 7

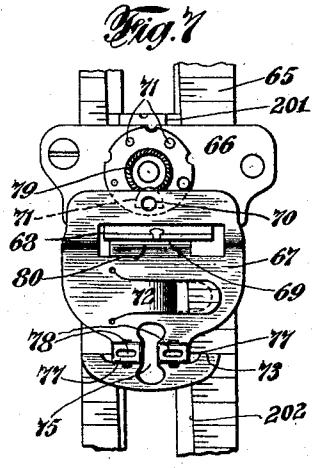
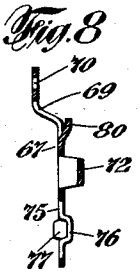


Fig. 8



Earle F. Watson Inventor

By his Attorneys
Edwards, Sager & Richmond

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3 SHEETS—SHEET 2.

Fig. 9.

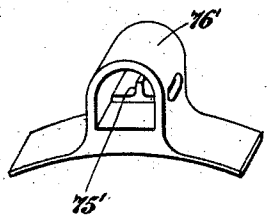


Fig. 10.

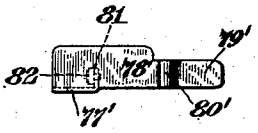


Fig. 11.

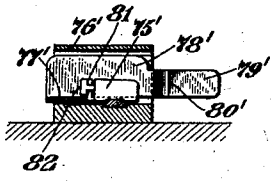


Fig. 12.

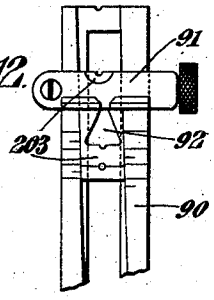


Fig. 13.

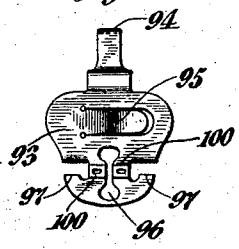


Fig. 14.

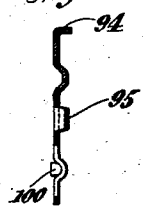


Fig. 19.

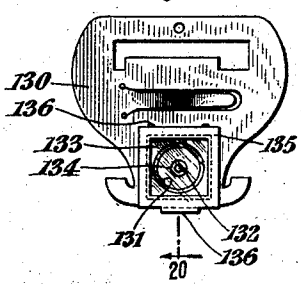


Fig. 20.

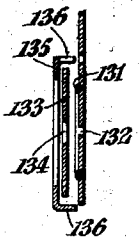


Fig. 15.

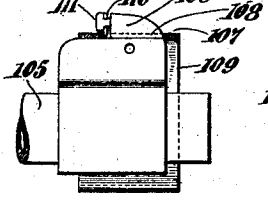


Fig. 16.

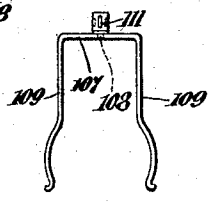


Fig. 17.

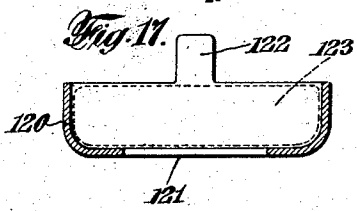
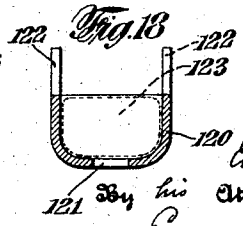


Fig. 18.



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3 SHEETS—SHEET 3.

Fig. 21.

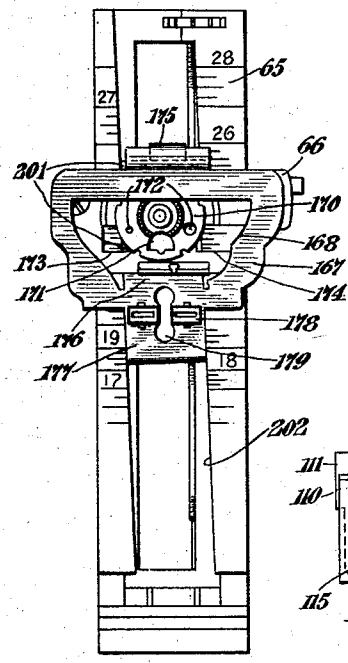


Fig. 22.

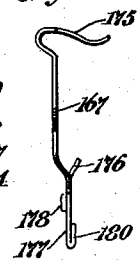


Fig. 23.

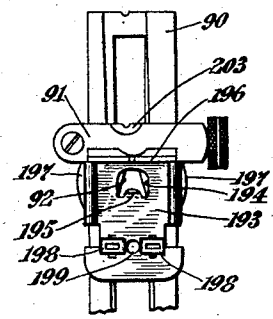


Fig. 24.

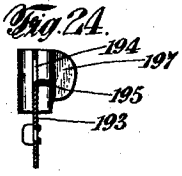


Fig. 25.

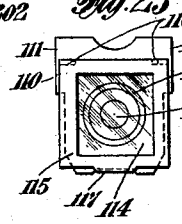


Fig. 26.

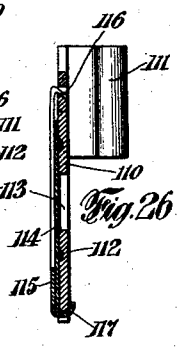


Fig. 30.

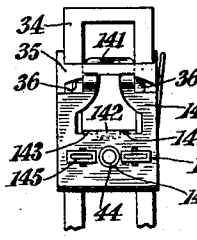


Fig. 31.

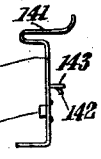


Fig. 27.

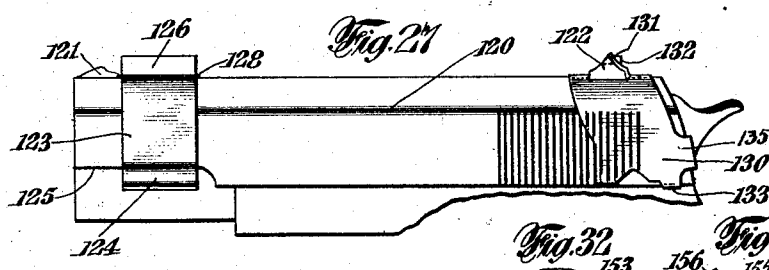


Fig. 28.

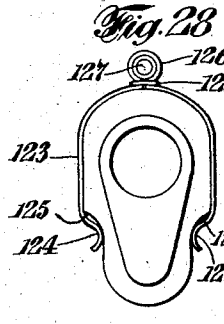


Fig. 29.

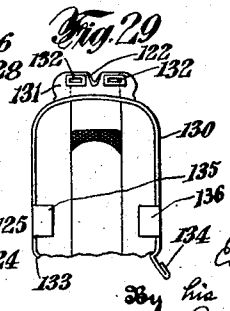


Fig. 32.

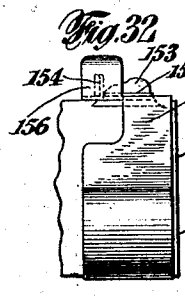
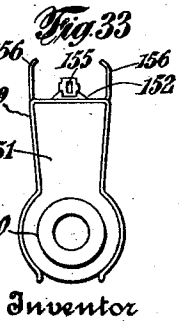


Fig. 33.



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UNITED STATES PATENT OFFICE.

EARLE F. WATSON, OF DUMONT, NEW JERSEY.

SIGHT FOR FIREARMS.

1,307,647. Specification of Letters Patent. Patented June 24, 1919.

Application filed November 8, 1918. Serial No. 261,756.

To all whom it may concern:

Be it known that I, EARLE F. WATSON, a citizen of the United States, residing at Dumont, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Sights for Firearms, of which the following is a specification.

The principal object of my invention is to provide a new and improved firearm sight adapted for use in the dark. Another object of my invention is to provide an improved self-luminous sight for firearms. Still another object of my invention is to provide sights that are self-luminous and readily attachable to the ordinary day sights so that they can be attached or removed as there may be occasion. Other objects of my invention have to do with features of construction of such sights. In the following specification having reference to the accompanying drawings I have described a limited number of specific embodiments of my invention and these will serve to illustrate the foregoing mentioned objects and others which will become apparent in this connection. It will be understood that other modifications may be made that will fall within the scope of the invention.

Referring to the drawings, Figure 1 is a side elevation of a U. S. model 1917 military rifle to which my improved sights may be attached;

Fig. 2 is a rear elevation of the rear day sight on this rifle;

Fig. 3 is a similar view showing my attachment in place thereon;

Fig. 4 is a perspective view of the attachment;

Fig. 5 is a side elevation of the front sight for this same military rifle showing the front sight attachment disconnected therefrom;

Fig. 6 is a rear elevation corresponding to Fig. 5;

Fig. 7 is a rear elevation of a Browning machine gun day sight with my improved attachment applied thereto;

Fig. 8 is a vertical section of the attachment;

Fig. 9 is a perspective view of a front day sight for a Browning machine gun;

Fig. 10 is a side elevation of my night sight attachment therefor;

Fig. 11 is a longitudinal section of the same day sight with the night sight attached in place;

Fig. 12 is a rear elevation of a rear sight such as is employed on the U. S. Springfield model 1903 military rifle;

Fig. 13 is a rear elevation of the attachment night sight adapted to go with the rear day sight of Fig. 12;

Fig. 14 is a vertical section of the same attachment;

Fig. 15 is a side elevation of the front sight for the same rifle with the attachment night sight shown in section;

Fig. 16 is a rear elevation of the attachment night sight;

Fig. 17 is a detail longitudinal section showing how the luminous element is constructed;

Fig. 18 is a cross section of the same element;

Fig. 19 is a view corresponding to Fig. 7, but showing a modification in the form of the self-luminous element;

Fig. 20 is a section on the line 20 of Fig. 19, and with the elements spaced apart for an aid to clearness;

Fig. 21 is a rear elevation of a Browning machine gun day sight with another of my improved attachments applied thereto;

Fig. 22 is a side elevation of the attachment shown in Fig. 21;

Fig. 23 is a rear elevation of a rear sight as shown in Fig. 12 with another of my improved attachments thereon;

Fig. 24 is a vertical section of the attachment shown in Fig. 23;

Fig. 25 is a rear elevation of another attachment for a rear sight of the type shown in Fig. 12;

Fig. 26 is a vertical section on enlarged scale of the attachment shown in Fig. 25;

Fig. 27 is a side elevation of a Colt automatic magazine pistol with my improved front sight and rear sight attachment in place;

Figs. 28 and 29 are rear views respectively of the front sight and rear sight attachments of Fig. 27;

Fig. 30 is a rear elevation of a rear sight as shown in Fig. 2 with another of my improved attachments thereon;

Fig. 31 is a side elevation of the attachment shown in Fig. 30;

Fig. 32 is a side elevation of my front sight attachment on a Browning 1918 automatic rifle, and

Fig. 33 is a rear view of the same.

The military rifle 30 has the folding rear sight 31 adapted when folded down to lie between the guards 32, and also the front sight 33, both adapted for day time use. The rear sight 31 consists of a frame 34 on which is the vertically sliding member 35 carrying the peep-hole 44. The slide 35 is cut away at 36 on each side and carries index lines to register with the divisions marked on the scales 37.

The attachment night sight 38 has a hook 40 to go over the part 41 of the slide 35, and is cut away at 39 to expose the indexes 36 and the adjacent scales 37. The lugs 42 are adapted to engage under the lower corners 43 of the slide 35. The hole 47 registers with the peep-hole 44. The luminous elements are placed on each side in alinement with the center of the peep-hole. The luminous elements are incased in the shells 45 and exposed through the slots 46 in said shells.

The attachment does not interfere with the day time use of the sight and the index 36 and the scale 37 are equally available, whether the sight is used for day service or with the attachment for night service. The hook or tongue 40 is elastic so that the attachment can readily be applied or removed as desired and the lugs 42 engaging the corners 43 hold it definitely in place. For use in the dark the operator sights through the hole 47 and his eye is guided by the two alining luminous streaks 46.

The corresponding front sight 50 is protected on each side by a guard 51. The attachment consists of a piece of elastic sheet metal bent generally in U-shape with a slot at 52 to go over the sight 50. The wings 53 have lugs or bosses 54 struck out therefrom to lock or catch under the openings 55 on the guards 51. At the end toward the operator, a tongue of the metal is turned up at 56 and carries the attached luminous element 57 exposed through the vertical slot 58.

It will be seen that by lowering the attachment as seen in Figs. 5 and 6, the slot 52 will go over the day sight 50 and the lugs or bosses 54 will snap under the shoulders 55 and hold the attachment in place. It may be removed by pinching the two wings 53 together so as to disengage the lugs or bosses 54. The width of the base of the attachment is made less than the inside width between the guards 51 so that if the adjustment of the sight 50 takes it a little to one side of the middle position, nevertheless the attachment can go in place. The slot 52 engages the sight 50 closely without excessive clearance.

Referring to Fig. 7 the frame for the folding rear sight on a Browning machine gun is designated as 65. This carries the vertically adjustable slider 66 with a peep-hole at 71. The attachment 67 has an opening 70 to register with the peep-hole 71, if it is desired to use the latter when the attachment is in place. The slot 69 hooks over a lower ledge 68, (generally known as the battle sight) on the slide 66 and the tongue 80 fits between the vertical members of the frame 65 and slides in the diagonal guideway, which is generally known as the drift slide guide. The tongue 72 goes beyond one side of the frame 65. The dumb-bell shaped peep-hole 75 has the two luminous members 77 at its sides exposed through the slots 78. These are secured in little depressions 76 in the sheet metal of the attachment 67. The index portions 73 are in alinement with the elements 78 and coöperate with the scale readings on the frame 65. The ends of the depressions 76 fit between the vertical members of the frame 65 and move up and down in the drift slide guide.

Various day time peep openings such as 71 may be brought into position by rotating the milled head 79, but for night use the opening 75 will be used and the eye will be guided by the two luminous elements 78 on each side. The attachment 67 can readily be applied or removed, for the tongue 72 is of yielding spring metal. The slide 66 and the attachment 67 go up and down together by virtue of the slot 69 engaging the ledge or battle sight 68.

The corresponding front day sight is shown in Fig. 9 where the sighting element is 75′ protected by the guard or hood 76′. A piece of spring sheet metal is cut and bent to have a comparatively narrow lower cross connecting part 77′ and wings 78′ extended forwardly to form finger holds 79′. These finger holds 79′ have bosses 80′ struck out for the purpose presently to be explained. The forward end of the cross connecting part 77′ is turned up at 81 and attached thereto is the luminous member 82.

As shown in Fig. 11, the attachment is in place with the luminous element 82 in front of the day sight element 75′. The attachment may be removed by pinching the finger holds 79′ together, thus disengaging the bosses 80′ from the front edges of the guard 76′ and then pushing the attachment to the rear and removing it from under the guard 76′. The inverse operation of applying the attachment will be obvious.

The rear sight shown in Fig. 12 comprises the frame 90 with the vertical slide 91 carrying an opening 92. The attachment 93 has a hook 94 at its upper end adapted to hook into the opening 92 and a flexible tongue 95 adapted to go through the frame 90 and clasp against the opposite side there-

of which is toward the nozzle of the rifle when the regular sight stands vertically. The dumb-bell opening 96, the indexes 97 to coöperate with the scales, and the luminous elements 100 all correspond respectively to the parts designated 75, 73 and 78 in Fig. 7, and in a general way the mode of operation of the attachment is the same. It can readily be applied or disengaged as will be apparent.

The corresponding front day sight shown in Fig. 15 comprises the sight blade 106 mounted on the barrel 105. A piece of spring sheet metal is bent down to form two wings 109 connected by the part 107, which has a slot at 108 to go over the sight 106. The tongue 110 is bent up, and attached to this is the sight element 111, which is in registering alinement with the day time sight element 106. It will be apparent how the attachment shown in Figs. 15 and 16 can readily be applied or removed.

In the foregoing specific examples of my inventive idea the sight elements that have been shown are of the character more fully disclosed in Figs. 17 and 18. The little tray 120 has a longitudinal slot 121 and the luminous material is sealed in a glass or other transparent bead or tube 123 laid in this tray 120. The lugs 122 at the sides may be bent around the supporting member such as 56 in Fig. 5 to secure the element in place and the support also forms a closure for the tray.

Instead of using these luminous elements of the character shown in Figs. 17 and 18 I may, as shown in Figs. 19 and 20, surround the peep-hole 132 with dots of luminous material or with a ring of luminous material 131 laid in holes or in a ring-like channel in the attachment 130. Over this I place a piece of mica or other transparent substance 133 which may have an opening 134 that registers with the peep-hole 132. This mica or other transparent sheet may be secured in place by cement or by the frame 135 secured by lugs 136 or by both the cement and the frame together.

Referring to Figs. 21 and 22, the frame for the folding rear sight on a Browning machine gun is designated as 65. This carries the vertically adjustable slider 66 with a rotatable sight disk 170 having different sizes and shapes of peep-holes 171, 172. The attachment 167 has a large opening 168 permitting access to rotate the disk 170 and giving full view of the scale settings at 173 and 174. At its top the attachment 167 is provided with a spring hook 175 engaging behind the top of the slide 66 and at the lower edge of the opening 168 a tongue 176 of the attachment fits in the track between the vertical members of the frame 65 and engages against the lower edge of the slide 66; the tongue 176 slides in the drift slide guide. A lower extension 177 of the attachment carries the luminous sight 178 on each side of the dumb-bell shaped peep-hole 179. The lower end 180 of the extension 177 is inturned to slide between the vertical members of the frame 65 in the diagonal drift slide guide.

The rear sight shown in Figs. 23 and 24 comprises a frame 90 with the vertical slide 91 carrying an opening 92. The attachment 193 has an opening 194 giving view through the slide opening 92 and the lower edge of the attachment opening 194 is inturned to provide a hook 195 engaging the lower edge of the slide opening and pressing the attachment upwardly against the ledge 196 of the slide. The attachment may also be formed with side wings 197 extending around the frame 90 and engaging behind it. Luminous elements 198 on each side of peep-hole 199 are fastened to the attachment by prongs extending through the sheet metal and sliding between the vertical members of the frame.

In Figs. 25 and 26 is shown an attachment 110 adapted to be attached to a rear sight by the resilient side wings 111. The attachment carries a ring of luminous material in a groove 112 concentric with peep-hole 113 and a protective piece of transparent mica, glass, celluloid or other material 114, is held over the ring by the frame 115. This frame has upper lugs 116 passing through recesses in the attachment body, and a lower hook 117 bent around through a recess in the lower edge of the attachment.

The attachments shown in Figs. 27, 28 and 29 are applied to a magazine pistol 120 having the front day sight 121 and rear day sight 122. The front attachment comprises a U-shaped member 123 straddling the barrel which may be over the front sight or just back of the front sight and having hooks 124 engaged under ledges 125. At the top the member 123 is formed into a cylinder 126, in which is fastened the luminous element 127; this luminous element is affixed in various ways, sometimes in a paint or paste form and otherwise inclosed in a transparent glass or similar container; a binding wire 128 compressing the sides of the cylinder together may or may not be used. The rear attachment is also in the form of a U-shaped member 130 recessed at the top to fit snugly over the rear day sight 122 and having the upwardly extending lip 131 carrying the luminous elements 132. The lower ends of the attachment are hooked under the edges of the barrel, as shown at 133 and 134. In the example shown of a Colt automatic pistol hooks 135 and 136 are also provided engaging the back of the movable slide of the pistol so that the sight attachment 130 is prevented absolutely from slipping forward when the pistol functions.

In Figs. 30 and 31 is shown a modified form of attachment for the rear sight shown

in Fig. 2, which latter comprises a frame 34 on which is the vertically sliding member 35 carrying the peep-hole 44. The slide 35 has an opening with side indexes 36 adjacent the scale lines on the frame scales. The attachment 140 fits over the slide below these cutouts and has hook members 141 and 142 engaging respectively the upper and lower edges of the opening in the slide. On each side of the lower hook 142 are inwardly directed lips 143 fitting slidingly in the track between the frame members and aiding in centering the attachment. Luminous elements 145 are carried on each side of peep-hole 144 which is concentric with the peep-hole 44.

In the Browning automatic rifle front sight shown in Figs. 32 and 33, my attachment 149 straddles the barrel 150 and block 151 above it and is formed to resiliently hold itself in place. The top of the attachment connecting the side members is recessed to fit over the day sight block 152 and be positioned thereby. Just back of the day sight blade 153, the attachment has an upturned lip 154 carrying the luminous element 155 protected on each side by the upturned flanges 156.

Where, as in the rear sights of Figs. 7, 12 and 21, the guide groove of the frame is at an angle to the vertical, the day sight peep-hole is on a laterally shiftable part moving in this groove and the luminous sight attachment of this invention is so formed that it is held and guided in this groove to move in a manner similar to that of this shiftable part. In the Browning machine gun rear sight, Figs. 7 and 21, the peep-hole disk 170 is on a shiftable member 201 which is seated in the inclined guideway 202 and is engaged by the tongue 80 of the attachment in Fig. 7 and by the hooks 175 and 176 in the attachment of Fig. 21. Similarly, the peep-hole of the rear sight shown in Fig. 12 is on a shiftable bar 203, which is engaged by tongue 94 of the attachments of Fig. 12. These attachments are also provided with guiding means constraining them to movement along the line of this inclined groove, so that the night sights have the same range movement as the day sights.

I claim:—

1. In combination, a fire arm, a vertical frame near the breech, a sliding carriage on said frame adapted to be adjusted vertically thereon, said carriage comprising a part with an aperture for a day sight, and a member detachably connected with said carriage and adjustable therewith, said member having an aperture and luminous material disposed around it for a night sight.

2. In combination, a fire arm, a vertical frame near the breech, a sliding carriage on said frame adapted to be adjusted vertically thereon, said carriage comprising a part with an aperture for a day sight, and a member detachably connected with said carriage and adjustable therewith, said member having an aperture and luminous material disposed around it for a night sight, said frame having a scale, and said adjustable parts comprising index means to coact with said scale both for the day sight and the night sight.

3. In combination, a fire arm, a front sight for day time use, a sheet metal attachment, a tongue bent up on the attachment to go in front of the said front sight, and a self luminous member connected to said tongue to serve as a night front sight when the attachment is in place.

4. In combination, a fire arm, a vertical frame near the breech, a sliding carriage on said frame adapted to be adjusted vertically thereon, said carriage comprising a part with an aperture for a day sight, a member detachably connected with said carriage and adjustable therewith, said member having an aperture and luminous material symmetrically disposed around it for a night sight, a front sight for day time use, a sheet metal attachment, a tongue bent up on the attachment to go in front of the said front sight, and a self luminous member connected to said tongue to serve as a night front sight when the attachment is in place.

5. In combination, a fire arm, a vertical frame near the breech having a diagonal slot, a sliding carriage on said frame adapted to adjust a day sight aperture vertically thereon, and a detachably connected member moved vertically by said slide and guided diagonally by said slot, said member having an aperture and luminous material disposed around it for a night sight.

6. In combination, a fire arm, a vertical frame near the breech having a diagonal slot, a sliding carriage on said frame, a laterally movable slide connected to said frame and carrying a day sight aperture, and a detachably connected member moved vertically by said slide and guided diagonally by said slot, said member having an aperture and luminous material disposed around it for a night sight.

7. In combination, a fire arm, a vertical frame near the breech having a diagonal slot, a sliding carriage on said frame, a laterally movable slide connected to said frame and carrying a day sight aperture, and a detachably connected member moved vertically by said slide connected thereto so as to move diagonally in said slot.

8. The combination with a fire arm of a vertical frame near the breech, a sliding carriage adapted to adjust a day sight vertically on said frame, a slot in said frame, a detachable member connected to said carriage by a spring hook passing through said slot in the frame and engaging the back of said car-

riage, said member having an aperture and luminous material disposed around it for a night sight.

9. The combination with a fire arm with a vertical frame near the breech thereof, having a slot, a sliding carriage on said frame adapted to adjust a day sight aperture vertically thereon, a projection on said carriage and a detachably connected member having a slot engaging said projection, and moving vertically with said carriage, said member having a spring hook passing through said slot and engaging the front of said frame, and a night sight and luminous material disposed around it on said member.

10. The combination with a fire arm of a sight therefor, comprising a central sight element and side flanges having slots therein, a detachably connected member having a body portion slotted to fit said element and resilient wings on each side having projections engaging said slots and a luminous sight carried by said member.

11. The combination with a fire arm of a sight therefor comprising a sight element having a supporting block, a detachably connected member having a slot adapted to fit said block and side wing members adapted to engage said fire arm and hold said member in place, a luminous sight carried by said member and protecting said wings bent up from the material of said member to protect said sight.

12. The combination with a fire arm of a vertical frame near the breech thereof, a slide vertically movable on said frame having a peep-hole, a detachably connected member having upper and lower spring hook members engaging said slide and a central opening over the peep-hole on said slide, and a luminous sight element carried by said member.

13. The combination with a fire arm of a vertical frame near the breech thereof, a slide vertically movable on said frame and having a central opening and a peep-hole, a detachably connected member having resilient hook members adapted to engage within said opening and an aperture for disclosing said peep-hole, a luminous sight element carried by said member.

14. The combination with a fire arm of a vertical frame near the breech thereof having a diagonal slot, a slide movable vertically on said frame and moving a peep-hole diagonally in said slot, a detachably connected member having resilient side wings embracing said frame and guided vertically thereby and a luminous sight element carried by said member.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."