ABSTRACT

Gun sight structure for firearms having sight-gap and sight-elevation adjustments, with miscellaneous, accommodating, adjustment, and sight pattern structures. The sight includes an inclined ramp feature wherein the sight may be raised and lowered in an appropriate manner. Threaded means accommodate sight-centering as to sight-gap and equal distance of sight opening. Adjustment means is also provided.

3 Claims, 15 Drawing Figures
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GUN SIGHT STRUCTURE IN FIREARMS

The present invention relates to gun sight structures and, more particularly, to new and improved gun sight structures for firearms, accomplishing a number of objectives among which are calibrated variation in sight-gaps, alignment structure, sighting pattern structure, and adjustable elevation apparatus.

Accordingly, a principal object of the present invention is to provide new and improved sight structure.

A further object is to provide sight structure wherein the sighting-gap or gaps may be made adjustable.

A further object is to provide improved sighting structure wherein the sighting-gap thereof is made horizontally adjustable and also centered for all adjustments.

An additional object is to provide improved sighting structure for effecting desired sighting patterns.

An additional object is to provide an improved sighting structure wherein means are provided to effect elevation adjustment of the sighting mechanism.

An additional object is to provide a composite sighting structure wherein both peep and post sights and also wide gap sighting means are simultaneously provided.

A further object of the invention is to provide peep and post sight structure in combination with wide gap, quick firing structure.

An additional object is to provide for adjustments of sighting structure along the longitudinal axis of a firearm barrel.

The features of the present invention may best be understood by reference to the following description taken in connection with the accompanying drawings in which:

FIG. 1 is a perspective view of certain rear sight structure constructed in accordance with the principles of the present invention.

FIG. 2 is an exploded view of an adjustment tool and its components used to adjust the structure of FIG. 1.

FIG. 3 is a fragmentary, perspective section taken along the line 3—3 in FIG. 1.

FIG. 4 is an enlarged, partially sectioned detail taken along the arcuate line 4—4 in FIG. 1.

FIG. 5 is an enlarged, exploded perspective view of certain adjustment structure illustrated in the left-hand portion of FIGS. 1 and 7.

FIG. 6 is a view taken along the line 6—6 illustrating the co-action of the parts of FIG. 5.

FIG. 7 is similar to FIG. 1, comprises the same identical structure, but illustrates the wide-gap sighting mechanism as being essentially closed and the same elevated upon the ramp of the sighting structure.

FIG. 8 is a front elevation, principally in section, of the adjustment screw usable to vary the horizontal distance between sight elements comprising the wide-gap sight structure.

FIG. 9 is an enlarged perspective view of certain sight structure comprising the front side of the firearm.

FIG. 10 is similar to FIG. 9, shows the identical structure, but illustrates the same as having an essentially closed or narrow gap sight opening and also a centering of the sighting structure over the mounting portion of the sight secured to the barrel of the firearm.

FIG. 11 is a view taken along the line 11—11, is shown principally in section, but illustrates sighting post orientation and a mounting.

FIG. 12 is a perspective view indicating the means in which and the manner by which, the sighting post is maintained in selected, adjustable, vertical disposition.

FIG. 13 is a view, principally in section, of the structure of FIG. 9, the same is centered over the firearm barrel and the structure is adjusted for wide-gap disposition.

FIG. 14 is an enlarged, exploded view of a central portion of the sighting structure of FIG. 9, indicating structure by which an indexing or marking may be achieved.

FIG. 15 illustrates a sighting arrangement as viewed by the user when the sights of FIGS. 1 and 9 are aligned and are being sighted upon an object.

In FIG. 1 a rear sight 10 slides by a lower, central, under-cut aperture 12, disposed in base member 11, upon a longitudinal barrel rib 39, see FIGS. 3 and 7, which is contiguous with barrel periphery aperture 13. Aperture 13, of course, mounts over and is contiguous with the transverse peripheral surface of the gun barrel. Under-cut aperture or groove 12, will of course co-act with a corresponding rib 39 disposed longitudinally of and over the top of a conventional gun barrel. A rear gun sight slider 14 includes a slider base 15, itself also including a central downwardly facing under-cut slot 16, see FIG. 7. The slider base 15 is provided with a diamond-shaped peep opening 17 oriented in the position shown such that the apices thereof, as at A, line up with respective markings B. The peep sight 17, of course, will proceed completely through the slider base 15 in a horizontal direction.

A pair of cooperating sighting elements 18, 18' serve as what is termed a "night expander" or gap-sight means for purposes hereinafter set forth. At this point in the discussion it is sufficient merely to note that the elements 18 and 18' merely co-act together to either reduce or widen the sight opening between walls 19 and 19' thereof. These elements 18 and 18', thus, are positioned to slide upon a keying, wedgelike, cross protuberance 20 which proceeds transversely, completely along the top of slider base 15. Centering markings 21 and 22 are provided as indexes of the rear wall 23 of base 15. These serve as indexes as hereinafter will be pointed out. Markings 24 and 25 serve as distance or width indications relative to elements 18 and 18' so that one may easily determine from the markings as to how wide a distance D is provided between these elements. An adjustable screw member 26 includes a coin end slot 26' suitable for actuation as by a coin or by tool 27, see FIG. 2. The latter tool may include an allen wrench 28, usable alone as a screw adjustment piece, and provided with an end fitting 29' The same is slotted at 30 to receive a slide key 31. The ends 32 of slot key 31 may be designed to fit into the key recesses 26' of the screw 26, but primarily is designed for other purposes as will appear below.

Thus while the tool 27 may conceivably be used for rotating the screw 26, nonetheless it may well be preferred to simply use the end E' of the allen wrench in a provided allen wrench recess 26' in a screw, see FIG. 7.

Coin end slots 28, as shown, may be provided for conveniently rotating a second adjustment screw,
screw 29, about its axis as by means of a dime. For some applications of adjustment of some parts, and returning to FIG. 2, member 31 will be flush with the outside surface 33 of fitting 29'.

FIG. 3 thus illustrates the adjustment screw 29 which is transversely disposed in a corresponding non-threaded aperture 29'' in base 11. Thus, the screw 29 includes a head 30 coin slotted for implement insertion to effect adjustment screw rotation. A keeper 32 is installed within the enlarged bore 33 so as to provide a retention surface 34 for compression spring 35. C-retainer 36 fits into a corresponding transverse peripheral groove (not shown) so as to serve as an inner abutment for spring 35. Threads 37 are provided to selectively engage a selected one of plural threaded apertures 38 in gun barrel rib 39, disposed upon an integral with the gun barrel 40. End 41' is turned down so as to provide a feeler point for the threaded aperture selected.

The adjustment screw 29, therefore, serves as a positioner or keeper and the spring 35 is employed to assure that vibration or jarring will not tend to release the engagement of the screw 29 with rib 39.

FIG. 4 illustrates, in enlarged, fragmentary, perspective view, a representative inner portion of the inner wall W of a representative element 18, 18'. Thus, a slot 41 may be provided to receive a marker element 42. Roll pin 43 may be installed to secure the marker element 42 in position within its slot. It is noted that the marker element may include an inwardly directed marker portion 44 having a recess 45 receiving a coloring element 46. The coloring element may in fact simply comprise a paint spot, an illuminous patch, an illuminous paint portion, and so forth.

In returning to FIG. 1 it is seen that base member 11 includes a pair of opposite inclined ramps 48 and 49, with the latter including an upstanding rack portion 50. This is to say, a series of rack or "screw" teeth 51 are provided for purposes hereafter explained.

It will be noted that the slide base 15 is constructed at base surfaces E, F to slide up the ramps 48, 49, and to be adjusted in place by index 51 relative to markings 52. An adjustment screw 55 is employed for this purpose, see FIGS. 1 and 51, with the screw 52 including an allen wrench recess 53, a threaded portion 54, a coin end slot 55, a head 56, and a medial, peripheral recess 57. The recess 57 accommodates the upstanding aligned ears 58 and 59 of element 60. Element 60 is secured in place by any suitable attachment means to slider base 15. Thus, as will usually be the case, the element 60 will be pressed into a corresponding aperture 53 into base 15, see FIG. 6. A spring-backed ball check 54 is seated within element 60 and is constructed to engage a selected one of plural ball seats or detents 61 spacedly disposed upon head 56. The purpose of the adjustment screw 52 is to releasably and selectively fix the disposition at slider base 15 relative to base member 11. Thus, the sight elements 18 and 18' may be moved from the position shown in FIG. 1 upwardly, by virtue of movement of their base 15 to a new position as shown in FIG. 7 as accomplished through the rotative adjustment of adjustment screw 52. Additionally, for closing or reducing the distance D, the adjustment screw at 26 can be rotated such that the two sides 19 and 19' of elements 18, 18' come together as seen in FIG. 7.

FIG. 8 illustrates the double-threaded nature of screw 26 such that by rotation in a particular direction, the two elements 18 and 18' will mutually advance toward or be withdrawn from each other.

Accordingly, FIGS. 1 through 8 have illustrated the construction of a rear sight on a chosen gun barrel, with the diamond-shaped peep being intact and accessible and operable at all times and for all adjustments (note viewing channel V in base member 11). Importantly, the gap expander sight can be elevated and lowered, opened and closed, as desired. See FIGS. 1 and 7 in this regard. Again, the horizontal distance between the two elements 18 and 18' adjustable by adjustment screw 26. Positioning along the ramps 48 and 49 is determined by the rack-engaging adjustment screw 52. Finally, the entire unit may be locked in place in a chosen rib aperture of the gun by means of locking screw 29.

In FIG. 9 boss mount 64 includes upstanding slide surfaces 65 and 66 which are co-planar and are disposed on opposite sides of a wedge-shaped portion 67. The latter includes a cylindrical recess or depression 68 which serves to seat an adjustment screw 69. The latter is single-threaded and is rotatable in opposite directions to advance, for windage, base 70 of sighting means 71. Sighting means 71 also includes elements 72 and 72', similar to elements 18 and 18', which are slideably disposed upon an undercut, upstanding wedge portion 73 of base 70. Adjustment screw 74 is similar to adjustment screw 26 in FIG. 1 and operates in essentially the same manner, being double-threaded in the manner shown in FIG. 8 wherein a single rotation will accomplish an equal and opposite movement of sighting elements 72 and 72'.

FIG. 10 illustrates the sighting wide gap (18, 18') structure of FIG. 9 in closed position, and with the windage adjustment this time being made such that the sight is centrally located relative the boss mount 64. The elements 75 may be exactly identical to elements 42 in FIG. 1.

If desired, and generally this will be the case, the base 70 will be provided with an upstanding post 76, as seen in FIG. 11. Post 76 is detailed in FIG. 12 and is shown to include one, two, or more side longitudinal slots 77. It will be observed that, here, two slots are used and are disposed diametrically on opposite sides of post 76. It is seen in FIG. 11 that the post 76 is threaded into a central aperture 78 of base 70. The post, thus, may be assembled either from the bottom or from the top of base 70 but, in any event, upon final desired adjustment, will be retained in a desired place by virtue of a spring-biased retainer element 79 as backed by spring 80. See the exploded view shown in FIG. 12. A threaded plug 81 includes an allen wrench fitting 82 and is threaded into transverse threaded aperture 83 disposed in base 70.

FIG. 13 is an elevation principally in section and taken along the line 13—13 in FIG. 10, illustrating the adjustment screws heretofore explained and, in addition, showing a plug type lock 76' which presses down against gun barrel 40. The plug may be backed by a shortened screw 81' that is laterally engaged by keeper 82' in FIG. 13. The same may be backed by spring 83 and the latter secured in place by threaded plug 84. Plug 84, of course, is threaded into threaded aperture 85 and includes an allen screw wrench opening 86. Apertures 87 and 88 may be provided and include springs.
The tool of FIG. 2, as shown in exploded view is useful in adjusting the post sight 76 and FIG. 12, this by the portions 32 engaging the slot 77 in the post sight. All of the allen screws, in fact, may be adjusted by recourse through the tool 27 in FIG. 2, where the same are provided with either the coin slots, or provided with allen wrench recesses, and so forth.

It is seen that the present invention provides a double-open sight that may be adjusted laterally and which may be used either day or night for "quick kill" situations, this by increasing or decreasing said gap on either front or rear sights, or a combination of the two, according to the light and range requirements of the shooter. The same can be used as a combination of sights quickly and effectively by the shooter according to the ambient light situation.

While particular embodiments of the invention have been shown and described, it will be obvious to those skilled in the art the various changes and modifications which may be made without departing from the essential features of the present invention and, therefore, the aim in the appended claims is to cover all such changes and modifications as fall within the true spirit and scope of the invention.

I claim:

1. Rear sight structure including, in combination, a sight constructed for mounting to a firearm barrel, said sight including a transversely oriented base, a pair of transversely spaced, upstanding sight elements slideably mounted on said base and constructed to form with the upper surface of said base a quick-fire, short-range sighting gap, means carried by said base and engaging said sight elements for adjusting the horizontal spacing therebetween, said base including a medially disposed, long-range-peep sight hole vertically spaced below the gap formed by said sight elements.

2. Sight structure for a firearm having a barrel, said sight structure including, in combination, a front sight and a rear sight spaced rearwardly thereof, said front sight including a first pair of adjustable gap-forming sighting elements, a post upstanding centrally behind such gap, and means for adjusting the horizontal spacing between said first pair of sighting elements, said rear sight including a second pair of sighting elements, which together with said upper surface of said base form a sighting gap, a peep sight hole disposed in said base centrally beneath such gap, and means for adjusting the horizontal spacing of said second pair of sighting elements, said front and rear sights including luminous sighting markings constructed for horizontal alignment when the user is sighting an object.

3. Structure according to claim 2 wherein said front sight includes a central marking disposed centrally of and beneath said respective sight elements.

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