

**United States Patent**

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**Rosenhan**

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- [54] **NOVEL ILLUMINATED GUN SIGHTS FOR SMALL ARMS**
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- [73] Assignee: **Moroni Corporation**, Salt Lake City, Utah
- [22] Filed: **March 12, 1970**
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- [52] U.S. Cl.....**33/241, 33/235**
- [51] Int. Cl.....**F41g 1/30, F41g 1/32**
- [58] Field of Search.....**33/52, 47; 240/6.41**

[57] **ABSTRACT**

An illuminated gun sight for small firearms having applicability to short and medium range, quick-firing situations under conditions of darkness has been invented. The illuminated gun sight or aiming device preferably comprises a pair of open sights, such as U-shaped sights each having a horizontal opening of substantial width. The horizontal opening of the front sight must be sufficiently wide to permit sighting of a target therethrough under conditions of substantial darkness. The rear sight has a preferably horizontal opening sufficiently wide so that at least a portion of the face of the front sight on each side of the opening can be viewed by an operator aiming the weapon. Also, a U-shaped front sight may contain on its rear face a pair of rectangular, light-colored patches having sides coextensive with the upper edge of the sight and the vertical interior edge of the sight; each patch being located on opposite sides of the U-shaped opening. Also, the sights are illuminated by positioning in or near the body of said sights a light source which can be seen by an operator of the firearm when aiming same. A pair of lighted dots are preferably positioned on each sight so that an operator aiming the weapon can view all four spots and may properly align the weapon by aligning the four lighted spots on a horizontal line.

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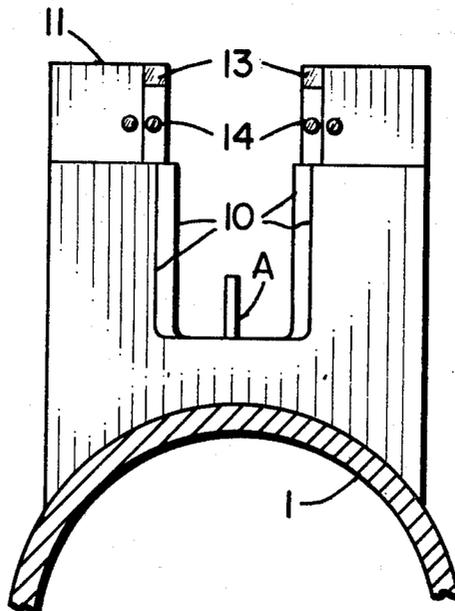
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**9 Claims, 8 Drawing Figures**



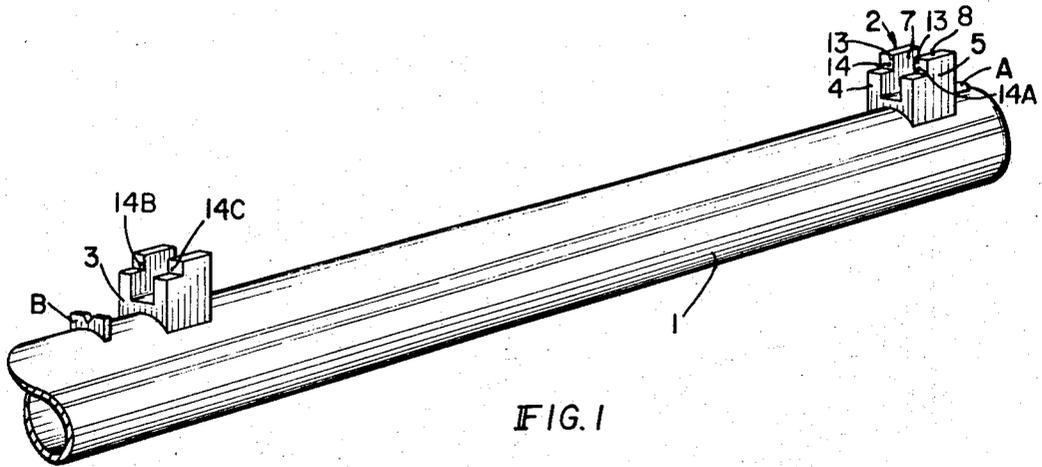


FIG. 1

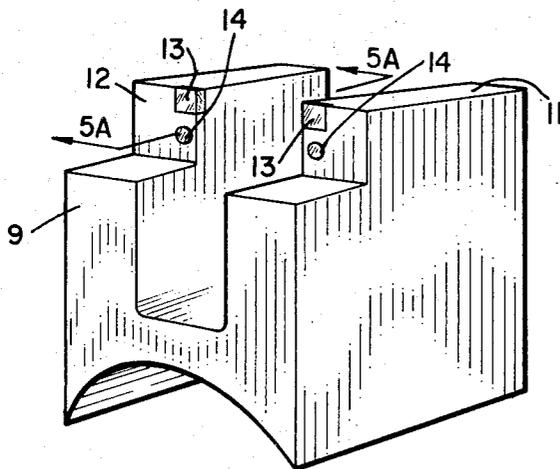


FIG. 2

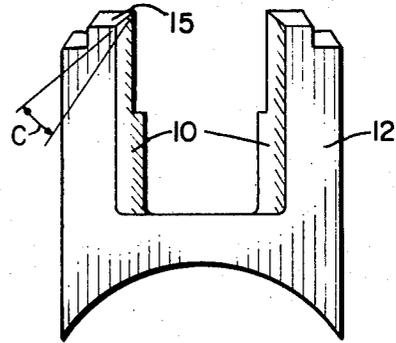


FIG. 3

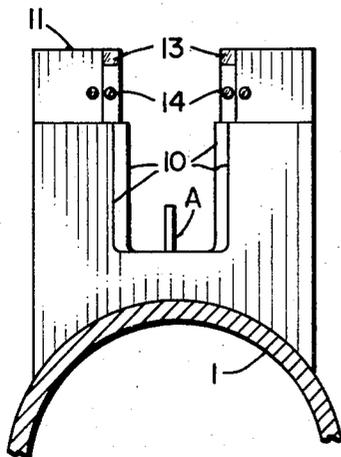


FIG. 4

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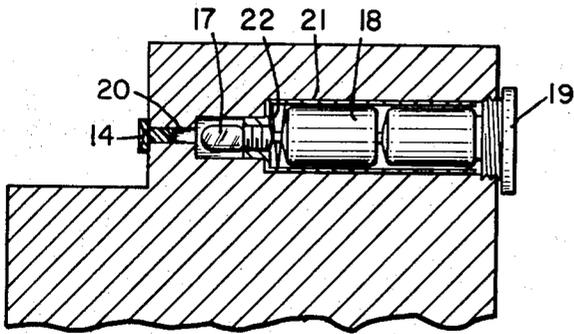


FIG. 5

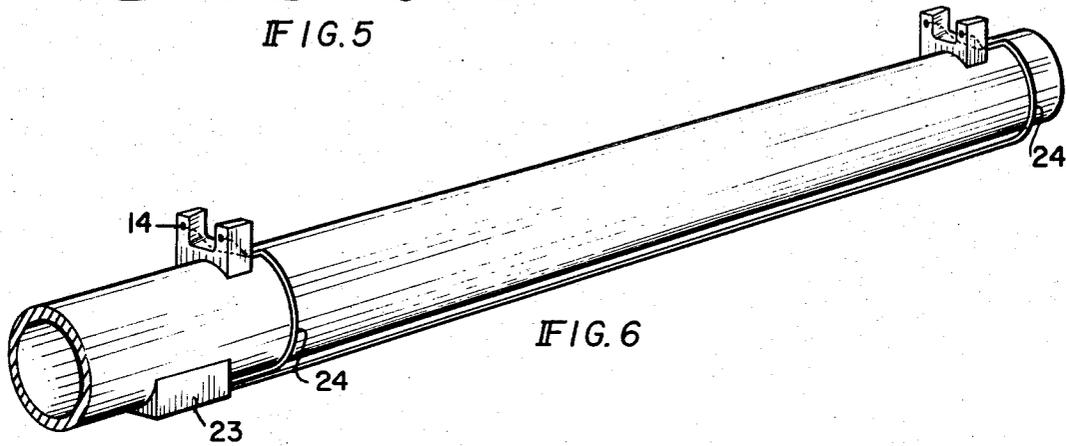


FIG. 6

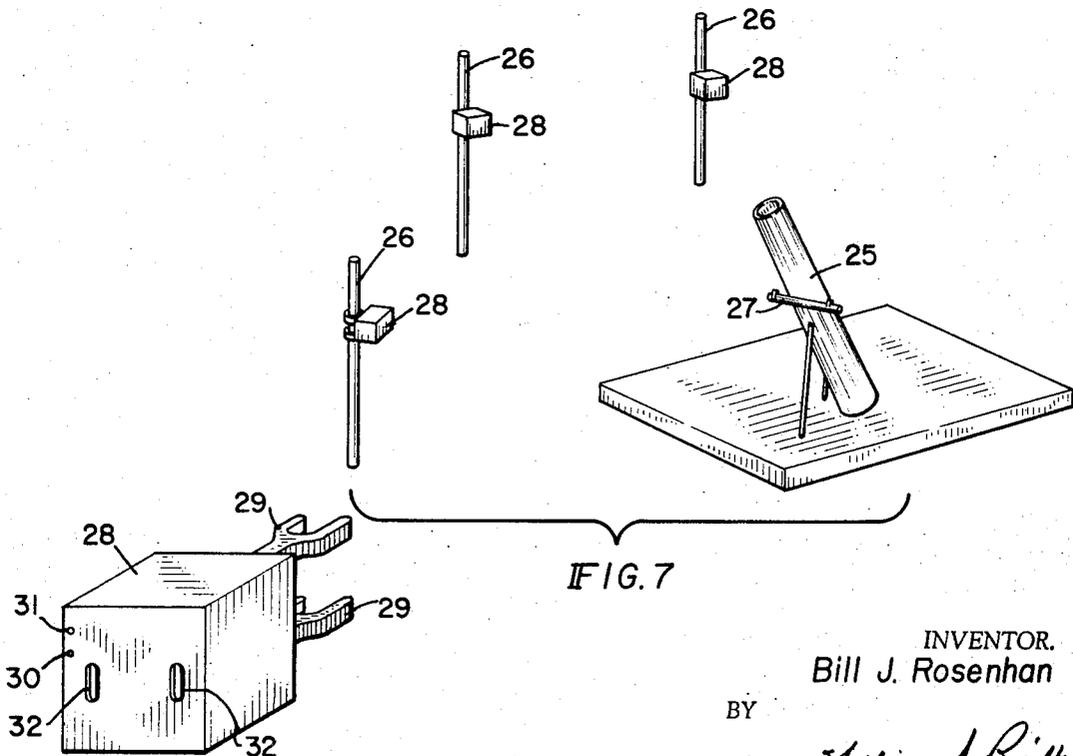


FIG. 7

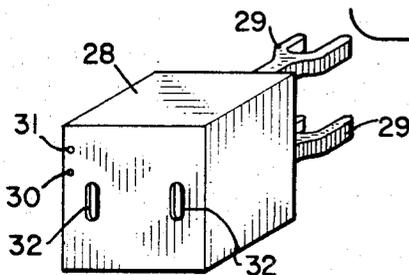


FIG. 8

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## NOVEL ILLUMINATED GUN SIGHTS FOR SMALL ARMS

### BACKGROUND OF THE INVENTION

The problems of firing a weapon in varying conditions of darkness has brought attention to the design of gun sights. In U.S. Pat. No. 920,278 there is illustrated a pair of light sources illuminating the front and rear sights of a rifle. Other means for directing light on the sights of firearms is illustrated in U.S. Pat. No. 920,278 of Deere et al.; U.S. Pat. No. 2,718,724 of Teague; U.S. Pat. No. 2,158,915 of Searcy; U.S. Pat. No. 731,712 of Schlaegel; U.S. Pat. No. 673,985 of Hollister; and U.S. Pat. No. 800,294 of Getchell. Coating of the sight either temporarily or permanently with a phosphorescent material has also been tried in an effort to improve night-firing, as illustrated by U.S. Pat. No. 154,871 of Johnson and 2,488,836 of Sweetman. The devices and techniques described in these patents are generally unsatisfactory for night-firing, especially for military purposes. The devices are bulky and the sights are not adapted for nighttime use, that is, the same V-shaped rear sights or peep sights used for long range firing are utilized in association with a light source. If sufficient light is used to make the sight opening readily visible then the night vision of the operator is adversely affected and the location of the weapon is revealed. Also, none of the prior art arrangements are suitable for quickly locating and aligning the sights upon a target.

### OBJECTIVE OF THE INVENTION

The objectives of the invention are:

- To provide an illuminated sight for use in quick-firing situations at short to medium range;
- To provide an illuminated sight for accurate firing at night under close range conditions;
- To provide a self-contained, illuminated sight for night firing;
- To provide an illuminated sight wherein the light emitted is visible within a narrow field of illumination;
- To provide an illuminated sight having a low intensity light source; and
- To provide an illuminated sight fixed to a weapon and containing a light source which withstands recoil shock of said weapon.

### INVENTION

This invention relates to a novel illuminated open sight for firearms. This sight is useful in daylight and night firing and is especially useful for quick-firing at targets at short to medium range. The sight is primarily intended for use with small arms such as rifles, pistols, machine guns, shotguns and similar weapons.

The gun sight comprises an illuminated front sight having a sufficient opening to permit sighting of a target therethrough in daylight or under conditions of substantial darkness, and an illuminated rear sight having a sufficient opening for at least a portion of the face of said front sight to be viewed by an operator aiming the weapon.

A combination of illuminated, U-shaped sights for front and rear positioning on a weapon is preferred. The preferred U-shaped open sights are unique and are

described and claimed in copending application Ser. No. 18,915 of Bill J. Rosenhan and Alvin S. Merrill. The horizontal opening of each U-shaped sight is greater than that ordinarily used in conjunction with firearms. The sights are utilized for aiming at targets and are preferably located on the barrel and/or receiver of the weapon in alignment with the longitudinal axis of the bore. The sights are preferably located in the vertical plane which contains the longitudinal axis of the bore.

The illuminated gun sight of this invention is particularly useful for quickly firing small arms since the sight may be readily located and aligned with a target, making the weapon more accurate for quick-firing at short ranges. Also, the width of the opening of the front and rear sights and the type and arrangement of illumination permits a target to be located under substantial conditions of darkness.

Further description of the invention may be facilitated by reference to the following drawings:

FIG. 1 is a perspective view of front and rear sights positioned on a gun barrel;

FIG. 2 is an enlarged perspective view, looking from the right and rear of the front sight of FIG. 1;

FIG. 3 is an elevational view of the muzzle face of solely the front sight;

FIG. 4 is an elevational view of the rear faces of the front and rear sights and post sight when viewed in alignment from sighting-eye position;

FIG. 5 is a fragmentary, elevational, sectional view, taken along the line 5A in FIG. 2, showing the interior of a representative lighted sight, front or rear;

FIG. 6 is a perspective view of a pair of lighted sights attached to a gun barrel and remotely attached to a power supply and light source;

FIG. 7 is a perspective view of a high angle fire weapon, such as a mortar, and

FIG. 8 is a perspective view of a lighted sight for use with a high angle fire weapon such as a mortar.

FIG. 1 is a perspective view of a gun barrel 1 having attached thereto an open, U-shaped front sight 2 and an open, U-shaped rear sight 3. The front sight 2 located near the muzzle end of the barrel 1 has a U-shaped or rectangular opening 4 with wings or posts 5 on each side of the opening. The width and vertical depth of the opening 4 in the front gun sight 2 are not a function of one another except to the extent that the opening must have sufficient width and depth to embrace a substantial portion of a target within the opening when viewed by a shooter. The depth of the opening is generally as great as the width. The front sight 2 is illustrated with patches, i.e., markings of lighter color 13 on each side of the U-shaped opening 4 and covering a rectangular area at the junction of the vertical side 7 of the U-shaped opening 4 and the top surface 8 of each post or wing 5. The light colored patch is preferably included on sights of weapons intended for firing under lighted or semilighted conditions. The patches are placed on the rear face of the front sight only. The rear sight preferably contains no light colored patches. Although the light colored patch is desirable for daylight use, it may be omitted from weapons intended for night firing without loss of accuracy or efficiency.

The rear sight 3 shown in FIG. 1 is similar in configuration to the front sight 2. The horizontal width of the U-shaped opening 4' need not be as large as that of the front sight 2 although it must be sufficiently large that a portion of the right and left posts adjacent the U-shaped opening of front sight 2 may be seen when viewed by an operator of the rifle or weapon sighting through the rear sight 3. The dimensions of the rear sight need not bear any specific correlation to the dimensions of the front sight although it is preferred that the dimensions of the U-shaped opening of the rear sight 3 be proportional to the dimensions of the U-shaped opening of the front sight 2.

The width of the U-shaped opening of both the front and rear sights should be sufficiently large that an object can be viewed therethrough under conditions of substantial darkness without the vertical sides of the U-shaped opening appearing to fuse together and obscure the object. If such a width is maintained for the sights it is found that the sights are also readily located for quick firing in daytime conditions with excellent accuracy at short and medium ranges, that is, ranges of about 200 yards and less. It has been found that a minimum horizontal opening of about  $\frac{1}{2}$  inch for a front sight located about 2 and  $\frac{1}{2}$  feet to 3 feet from the sighting position of the eye of the operator of the weapon is satisfactory for nighttime use. The closer the front sight is located to the sighting position of the eye of the operator, the smaller may be the horizontal opening of the sight; and conversely the farther from the eye the sight is located the greater the horizontal opening required. Once the width of the opening of the front sight is determined, then the width of the opening of the rear sight is fixed inasmuch as a portion of the pair of vertical posts bracketing the U-shaped opening of the front sight must be viewable when sighting through the rear sight. Thus, the horizontal opening of the rear sight will optically appear larger since it is closer to the eye of an operator, but it may, in fact, have an absolute measurement less than the front sight.

The sights illustrated in FIG. 1 need not have any substantial thickness and may be constructed of relatively thin, rigid material. The vertical edges of the U-shaped opening are preferably parallel to one another and are generally perpendicular to the base of the U-shaped opening. The base of the U-shaped opening is substantially the same width as the top although the intersection of the base of the opening and the vertical walls may be somewhat rounded.

The novel illuminated sights having U-shaped openings are illustrated in FIG. 1 as being additional sights. The depth of the U-shaped openings may be sufficient to permit the traditional peep hole or V-shaped rear sight B and post sight A to be seen through the bottom portions of the U-shaped openings. A substantial portion of the U-shaped opening of the front sight projects above the top of the post sight A so that said post cannot interfere with the quick-aiming or nighttime use of sights 2 and 3.

Although the preferred U-shaped sights have been illustrated in FIG. 1, other arrangements and structures may be utilized. The illuminates spots 14 may be placed on U-shaped sights so that the sight is on target when the sights are arranged in pairs vertically or arranged horizontally, as illustrated in FIG. 4. Also, a series of

three illuminated spots may be utilized; two spots located on a U-shaped rear sight as shown in FIGS. 1 and 4 and a single post front sight with a single illuminated spot facing the rear of the firearm. A firearm so equipped could be aimed by aligning the three spots on a horizontal line. A single front post is not preferred inasmuch as the post tends to obscure a portion of the target.

FIG. 2 is a perspective view of a front sight. The sight of FIG. 2 has substantial depth and for this reason the walls forming the U-shaped opening are tapered so that the opening at the front or muzzle face of the sight is wider than the opening at the rear face of the sight (see FIG. 3). A taper on each wall is preferred so that an operator aiming through the sight will see only the rear face 12 of the vertical forwardly tapered walls 10 and therefore see a sharp line. Although a taper is not essential on sights utilized solely at night, a taper is preferred inasmuch as the sights are also useful for daylight firing and a sharp edge is desirable for night firing as well. The angle C illustrated in FIG. 3 has a minimum value of about  $4^\circ$  and can have substantially greater values although the maximum included angle would be limited by the length of the sight, i.e., a greater included angle of taper can be utilized with very thin sights than with those of substantial thickness. The top surface 11 of each post or wing is also tapered so that the rear edge of the top surface is higher than the forward edge. Again, the purpose of preferably tapering the top surface is to provide a sharp visible edge to the operator of the weapon. Since the base of the U-shaped opening is not utilized in aiming a weapon, it need not be tapered although it may be.

The rear face 12 of the sight illustrated in FIG. 2 may be recessed partly or offset from the forward edge 9 of the sight. Having the face 12 slightly offset aides in protecting that portion of the sight from physical damage. The light colored square or rectangular area 13 is located at the upper interior edge margin of the face of the front sight or sight housing 2. The spot, element or dot 14 is illuminated from within the sight. The sight light source and a power supply for the light source may be an integral unit or the light source and/or power supply may be remote from the sight with the light piped to the sight by means of a light conducting fiber such as the known glass or plastic fibers coated with light reflecting coatings. The diameter of the illuminated spot is preferably about one thirty-second of an inch and generally does not exceed about one-sixteenth of an inch. Larger spots of light, of course, may be used, but the quantity of light emitted from a larger spot may interfere with the alignment and night vision of the operator of a weapon containing such a sight. A colored light, for example, red, blue, green, amber and the like is preferred over a white light inasmuch as a colored light interferes less with night vision.

The exact size of the illuminated spot may be varied considerably inasmuch as a lens can be utilized in conjunction with a variable power source to alter the apparent size of the illuminated spot and its intensity. The illuminated spots are located symmetrically on the rear face of the front sight; and likewise on the rear sight, with each spot preferably located closer to the inside wall of the U-shaped opening than to the exterior side of the sight. The illuminated spots are preferably

located equidistantly from the vertical center line of the sight and each is preferably located the same distance below the top surface of the sight. The distance between the spots and the top of the sight may vary between the front and rear sights and will preferably vary if the distance between the front and rear sights exceeds about 1 foot. Whenever a firearm is aimed all the spots should appear optically to be located in the same position with reference to the top of said sight, as shown in FIG. 4.

FIG. 3 is an elevational view of a front sight or rear sight looking from the muzzle of a weapon towards the stock or breach of the weapon. This view illustrates the interior walls 10 of the U-shaped opening tapering towards the front of the sight and similarly the top surface of the vertical post 12 tapering downwardly from the rear portion of the sight to the front face of the sight. This view shows a pair of lugs or ears 15 extending above the top surface 10 of the sight. These ears 15 are also recessed from the side of the sights so that a panel or other cover may be attached to either side of the sight. Such a panel or covering may be a functional part of the sight when the sight contains a light source and a power supply or whenever the sight must be attached to existing sights by adaptive means. Although, as indicated hereinabove, the tapering of the sights is optional, it is preferred since sights of this invention frequently have substantial thickness and a visible sharp edge at the rear face of both sights is preferred for daylight and night firing.

FIG. 4 illustrates that when the rear and front sights 3 and 2 are viewed by the sighting-eye in its sighting position, the angle subtended by the horizontal width of the opening of the rear sight will be slightly greater than that subtended by the width of the front sight, this to reveal the opposite side margin markings, patches, or lighting means of the front sight immediately adjacent the central opening of the front sight, past the masking effect of the side areas of the rear sight.

The alignment of the rear sight and front sight during aiming of a weapon carrying such sights is illustrated in FIG. 4. The top surface 11 of each sight forms a continuous line and preferably the illuminated dots or spots 14, 14A, 14B, 14C all fall on the same horizontal line. The light colored patches 13 are shown as horizontally completely filling upper square portions of the viewed aperture side margins of the front sight. This is a preferred arrangement although as indicated above, the light colored patch may be omitted altogether or the light colored patch may extend only a short distance from the vertical wall 10 of the front sight across the rear face of the front sight. It is further preferred that the luminous dots or spots 14, 14A, 14B, 14C, all appear to an operator of the weapon to be of the same size. To accomplish this, the actual size of the luminous spots on the rear face of the rear sight may be slightly smaller than the spots on the front sight or a reducing lense may be inserted in the opening in the rear face of the rear sight so that the illuminated spot will appear optically the same size as the spots on the front sight when viewed by the shooter who is sighting the rifle for firing.

FIG. 4 also illustrates a novel U-shaped open front sight with a traditional post sight 16 as an integral part thereof. The post preferably projects upward only a

portion of the height of the opening of the front sight. Such a front sight may be used in conjunction with a traditional fold down peep sight which may be raised to sight accurately upon long range targets, e.g., targets at distances greater than 200 yards. If desired the U-shaped rear sight could contain a peep opening in the center of its base or a small V-shaped open sight could be cut in the center of the base of the U-shaped opening without detracting from the use of U-shaped open sights for quick-firing and nighttime use.

As an alternative arrangement of illumination, the front post sight could be equipped with a light source shining towards the rear sight and a pair of lighted spots on the rear sight could be located thereon so that alignment of the three lighted spots on a horizontal line would fix the firearm on a target bracketed within the U-shaped opening of the rear sight.

In FIG. 5 there is illustrated a view of the section A—A of FIG. 2 showing one embodiment of the interior of a lighted sight. The sight shown may be useful as either a front or rear sight. The sight illustrated in FIG. 5 is one of a pair of light sources with associated power supply; one light source for each illuminated spot on the rear face of the sight. The illuminated spot may be merely an opening on the rear face of the sight communicating with said light source by means of a tunnel 14. A lense 20 may be fitted into the tunnel 14 to keep out dirt and, if desired, to magnify or reduce the apparent size of the illuminated spot. Having the light source recessed within the sight aids in limiting the field of view.

The light source 17, preferably a solid-state, light-emitting diode, is shown attached to an inner cylinder 21 made of electrically conductive material. The novel sights of this invention can be readily constructed of rigid non-conductive material, such as plastics. Preferred plastics are the thermosetting resins such as polyesters, polycarbonates, polyurethanes, epoxies and the like. If a conductive material, such as aluminum, steel or the like is used for the sight then the conductive inner cylinder 21 may be omitted. Also, a conductive strip may be utilized to connect the base of the power supply with the light source to complete the electrical circuit. A conductive inner cylinder 21, however, is especially useful for sights having the battery and light source inserted from the face of the sight. The light source 17, for example, a light emitting diode, can be secured to the conductive cylinder.

A dry cell battery useful as a power supply 18 can be inserted therein in contact with a spring means 22 used to prevent contact between the front battery post and the light source, and the conductive cylinder can be inserted in the sight as a unit. A threaded plug 19 threads into the front face of the sight to make contact with the power supply and the conductive cylinder, thereby completing the electrical circuit and activating the light source when the battery has been forced into contact with the base of the light source. Of course, the light source 17 may be connected to one terminal of the battery through a variable rheostat which may be a part of the sight or remote from it, so that the intensity of light may be regulated.

If a pair of light emitting diodes are connected to a single power supply source, which preferably has a minimum voltage of 3 volts, it is preferred to place the

diodes in parallel with a resistor in a series for each diode. This limits the current through the diode to the maximum permissible under device specifications, even if one diode begins conducting current. Also, the resistor value determines the maximum brightness of the diode in this type of circuitry.

The light emitting diode diodes solid state devices which, although small in size, are reliable, shock-resistant light sources requiring small amounts of energy. These diodes may be powered with energy sources of about 1.6 volts at currents as low as 10 milliamps. Typical light emitting diodes are gallium-arsenide-phosphide semi-conductors, such as those supplied by Hewlett-Packard and similar devices supplied by Monsanto. These diodes frequently have a useful life of a few hundred hours up to several thousand hours. The diodes are very small, usually having a diameter less than about one-fourth inch and often as small as about one-sixteenth inch.

The small size and low intensity of these light sources are desirable for this invention inasmuch as a limited field of view and limited visibility of the illuminated dot is preferred: first, to avoid interference with the night vision of an operator and, second, to avoid revealing the location of the weapon. These solid state diodes are available in very low wattages so that illuminated dots having a field of view of less than about  $10^\circ$  and a visibility range of less than about 30 feet are provided. By use of a variable resistor in a series with said diode, the range of visibility of the illuminated dot may be regulated to distances as small as about five feet.

Another method of providing illuminated sights is illustrated in FIG. 6 which is a perspective view of a forward and rear sight attached to a gun barrel. A remote light source and power supply may be contained in housing 23 with light directed to the sights by means of optically conducting or light transmitting fibers 24. A fiber for each illuminated spot would be provided, thus utilizing four fibers for illuminating a pair of dots on each of two sights. These fibers are known in the art and are generally coated fibers of glass or plastic.

The optical fibers are flexible and can be bent about small radii of curvature. The optical fibers may enter the base of the sight at either the front or rear face. The fibers may be protected by a metal conduit from the power supply housing to the sight. Also, the fiber may be cast in place when the sights are made of plastic such as the polycarbonate resins.

The illuminated dots on sights of this invention preferably have a field of view of less than about  $10^\circ$  and a sufficiently low intensity so that said dots are not visible at distances greater than about 30 feet.

In FIG. 7 there is illustrated an aiming system for high angle fire weapons such as mortar 25. Sighting posts 26 are located substantially equal distances from the weapon and at various angles to the weapon. The sighting posts are used as reference points for firing the weapon. Once a particular target is located it may once again be found by adjusting the sighting means 27 to its previous setting and sighting on a particular sighting post. Lights are attached to such lighting posts at night to assist in locating them. The sights of this invention are illuminated spots using light emitting diodes as the light source.

In FIG. 8 there is illustrated a lighting apparatus for use in conjunction with sighting posts. A housing 28 is attached to a clamp 29 which is adapted to clamp tightly to a sighting post. Slots 32 passing through the housing permit a belt or other strap to pass therethrough and about the sighting post to assist in securing the housing to the post. Within the housing 28 there is contained a light source and power supply which illuminates a spot 30 on the face of the housing facing the weapon to be aimed. A bore hole 31 passes through the housing and is used for light source alignment purposes. An operator sights through this hole 31 to align the housing 28 on the mortar so that an operator sighting through sight 27 is assured of seeing the luminous spot 30. The alignment hole 31 may be located close to the illuminated spot 30 either along side or above or below illuminated spots. The light emanating from the luminous spot has a limited field of vision and can be adjusted to have a variable intensity. The lighted spot 30 should be aligned with the left side of the sighting post, which is the side of the post used for sighting purposes.

The illuminated sight invention is particularly useful when rifles, handguns, and the like are used for quick firing at short to medium ranges under conditions of limited light. The illuminated double, open sights are easy to find visually and the target can be readily bracketed therein. The sights are especially useful on rapid-fire military weapons under close range conditions where sighting and firing must occur within a few seconds. The open sight construction is also particularly useful in conjunction with illumination means for night firing. The horizontal opening of the sights must be sufficiently wide that the vertical walls of the opening do not tend to optically fuse together when viewed under conditions of darkness.

The illumination of the sights provide easy aiming and accurate firing under conditions of darkness. It has been found that light emitting diodes are preferred for this purpose inasmuch as they withstand the recoil shock of rifles, especially rapid fire weapons.

Although light transmitting fibers can be utilized to conduct or transmit light from remote light sources, the use of solid-state, light-emitting diodes is preferred inasmuch as the light source can be contained within the sight thereby providing a more rugged, compact arrangement. These diodes are also particularly useful for illuminated sights used in conjunction with high angle fire weapons. The ruggedness of these light sources make them particularly adaptable for military use.

As indicated hereinabove, a pair of illuminated open U-shaped sights offers advantages over traditional sights when quick-firing or night firing of a weapon is involved. The sight of a rifle should have a minimum width of about one-half inch for either purpose when the front sight is about 2 feet or more from the eye. The rear sight opening will generally have different absolute dimensions in order for the sights to appear optically similar. However, for handguns the rear and front sights may be substantially identical in size because of the proximity of the sights to one another.

The rear sight of a rifle, however, preferably has different dimensions than the front sight so that the sights will appear identical when sighted through, as illustrated in FIG. 4. The dimensions of a rear sight, for ex-

ample, can be computed from knowledge of the dimensions of the front sight, the distance between the front sight and the rear sight and the average distance between the rear sight and the eye of an operator aiming the particular weapon to be equipped with the open sights. Since the eye of the operator is the point at which light converges, then simple geometric formulas applied to triangles can be used to compute the sight dimensions.

The sight dimensions are established by the distance the sight is located from the eye. As indicated hereinabove, the width of the sight opening should be preferably one-half inch for a sight located 24 to 30 inches from the eye of the operator of the weapon. Although the opening can be wider, for example, an increase of 100 percent over the minimum width required, very little variation below the minimum can be tolerated and for best operation the width should be not more than 10 percent narrower nor more than 50 percent greater than the recommended minimum. At a distance of about 15 inches from the eye, a rear sight can be about one-half the width of a front sight located 30 inches from the eye.

In effect, the dimensions of a sight useful at night can be computed by using one-half inch as the standard opening width for a sight located about 24 to 30 inches from the eye of an operator. By allowing  $X$  to be the width of the opening to be determined and  $Y$  the distance in inches of such sight to the eye then the ratio is  $X/1/2 = Y/30$ . Since  $Y$  is generally known, the equation can be solved for  $X$  wherein  $X = 1/2(Y/30)$ . The equation can be generalized by allowing  $W$  to be the known dimension of the front sight and  $Z$  to be the distance that sight is from the eye; the equation becoming  $X = W(Y/Z)$ . Other dimensions than width can be computed from this formula since it is desirable to have the rear sight, for example, proportional in size and shape to the front sight. The width of the opening of the rear sight, however, will generally not be exactly proportional to the front sight since it is desirable to be able to view portions of the twin posts of the front sight through the rear sight. For example, a front sight having a one-half inch wide opening located 27 inches from the eye could be used in conjunction with a rear sight 9 inches from the eye and an opening of one-sixth of an inch if exact proportions were used. However, in order to view portions of the twin posts of the front sight it is preferred that such a rear sight opening be about one-quarter inch.

For the general purpose of this invention, rifles, shotguns, and like weapons can be fitted with a rear sight having a minimum opening width of about one-half inch, and if the front sight is between about two feet and three feet from the eye, an opening width of one-half inch is appropriate. As indicated elsewhere herein, the depth of the U-shaped opening is preferably at least as great as the width and the combined widths of the twin posts on each side of the opening is preferably substantially the same as the opening width.

In the above discussion, the term "width" refers to a horizontal dimension at the rear face of a sight while "depth" refers to vertical dimension at the same face.

Although the instant invention has been described hereinabove by reference to specific embodiments, it is not intended that the invention be limited solely

thereto, but to include all the variations and modifications falling within the scope of the appended claims.

I claim:

1. A sight means for a weapon, having a barrel having a muzzle and, comprising:
  - (a) a forward U-shaped sight mounted on said barrel proximate said muzzle end,
  - (b) a rear U-shaped sight mounted on said barrel remote from said muzzle end, said sights being aligned on said barrel so that their U-configuration provides aligned sight openings, the horizontal width of said sight opening of said rear sight being dimensioned to be less than the horizontal width of said front sight opening, and
  - (c) horizontally aligned, rearwardly facing sighting elements disposed on said front sight on opposite legs of the sight which define sides of said front sight opening.
2. The sight means of claim 1 wherein said rear sight comprises a U-shaped sight structure dimensioned to simultaneously mask areas of said front sight disposed laterally beyond said sighting elements.
3. The sight means of claim 1 wherein said sighting elements of said front sight comprise illuminated elements, said sight means including means for supplying energy to said illuminated elements.
4. The sight means of claim 1 wherein said sighting elements comprise patches optically distinguishable from the remainder of said front sight.
5. The sight means of claim 1 wherein said sighting elements comprise colored patches.
6. The sight means of claim 1 wherein said rear sight also includes horizontally aligned, rearwardly-facing sighting elements dimensioned for horizontal alignment and simultaneous viewing with said sighting elements of said front sight.
7. The sight means of claim 6 wherein all of said sighting elements of said front and rear sights comprise light emitting elements, and means for powering said light emitting elements.
8. A firearm having a barrel, and U-shaped front and rear sights spaced and aligned upon said barrel of said firearm, each of said sights having a respective U-shaped sighting opening, the dimension of the horizontal width of said sighting opening of said rear sight being less than that of said front sight, said front and rear sights including mutually horizontally aligned, rearwardly facing sighting elements disposed upon the legs defining the U-configurations of said sights.
9. The structure of claim 8 wherein said firearm includes power supply means, said sighting elements comprising luminous elements, said power supply means coupled to said elements for effecting illumination of the same.

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