

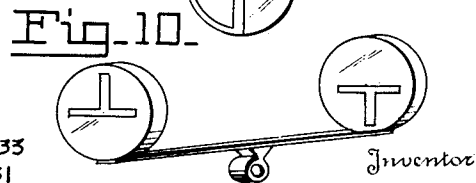
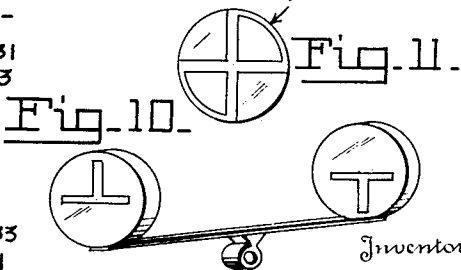
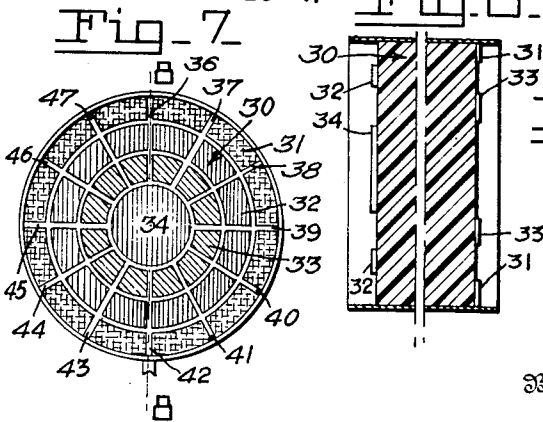
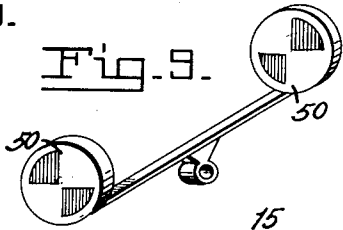
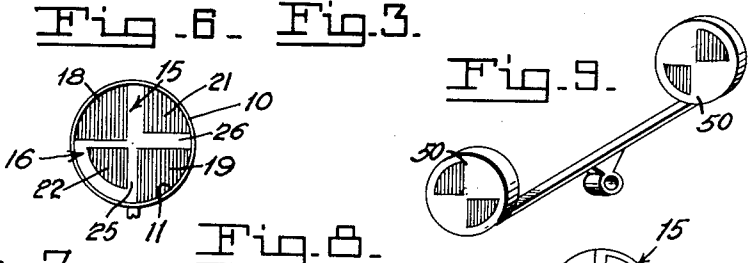
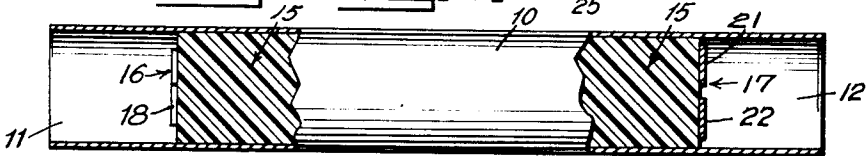
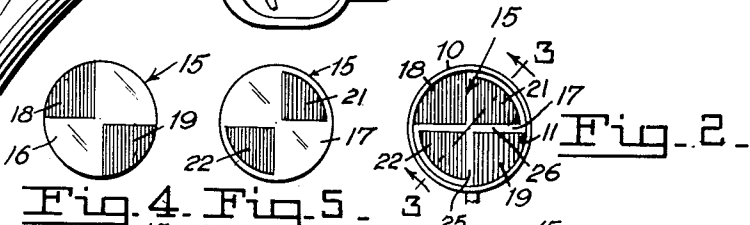
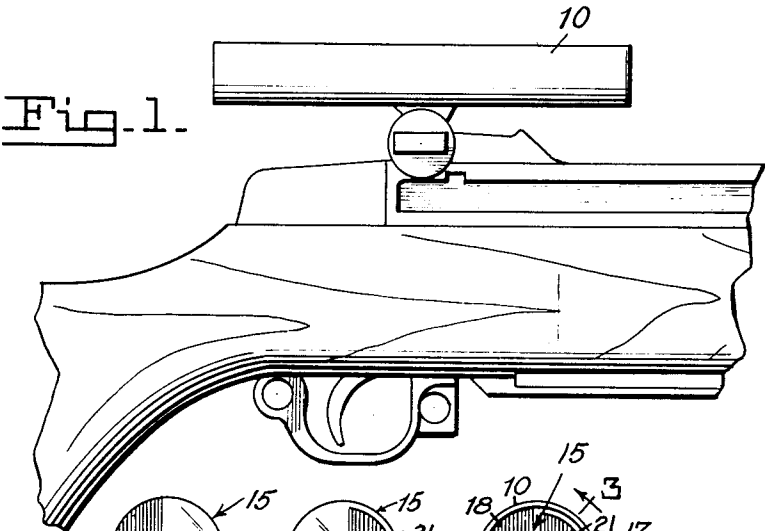
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GUN SIGHT

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GUN SIGHT

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4 Claims. (Cl. 33—47)

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The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

This invention relates to a gun sight, more particularly to a sight for a shoulder weapon.

The usual type of sighting equipment provided on a firearm generally comprises a blade or bead front sight secured to the barrel near the muzzle thereof and an aperture or "buck horn" rear sight secured to the receiver or breech end of the barrel. Alignment of the front sight with the rear sight provides a means for alignment of the gun with the target. However, due to the lack of precise centering means, the skill of the operator is called on for final alignment, hence the wide divergence between the ability of various operators to place their shots.

It is therefore the purpose of this invention to provide an improved means for aligning the eye of the observer with the sight of a gun to accurately determine the point of impact of a missile ejected therefrom, whereby a relatively inexperienced operator will be enabled to place his shots in a much more accurate manner than has heretofore been possible.

The specific nature of the invention as well as other objects and advantages thereof will clearly appear from a description of a preferred embodiment as shown in the accompanying drawings in which:

Fig. 1 is a fragmentary side elevational view of a firearm showing the sight mounted thereon.

Fig. 2 is an end elevational view of the sight housing showing the juxtaposition of the colored sectors when the eye is placed in the correct sighting position relative to the sight.

Fig. 3 is a side elevational view of the sight housing shown partly in longitudinal section illustrating the transparent plastic cylinder contained therein.

Fig. 4 is a rear end view of the left end of the cylinder shown in Fig. 3.

Fig. 5 is an end view of the right end of the cylinder shown in Fig. 3.

Fig. 6 is an end view of housing 10 shown in Fig. 3 illustrating one position of the various sectors when the eye is not in the correct sighting position relative to the sight.

Fig. 7 is a front elevational view of a modification utilized for a deflection type sight.

Fig. 8 is a cross sectional view taken along the line 8—8 of Fig. 7.

Fig. 9 is a modification of the sight illustrated in Fig. 3.

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Fig. 10 is still another modification.

Fig. 11 illustrates a form of marking which may be substituted for the tinted areas utilized in the above described figures.

The invention consists of a tubular housing 19 adjustably mounted substantially parallel to the bore of a firearm barrel and having conventional azimuth and elevational adjustments (not shown) relative to such barrel. A sighting element comprising a cylinder 15 preferably of high visual transparency, and formed of a colorless, plastic material is secured within the tubular housing 10 with the rear end 11 and front end 12 of the housing projecting a substantial distance beyond the plastic cylinder 15 for the double purpose of protecting the plastic cylinder from injury and excluding extraneous light.

The rearward face 16 and the forward face 17 are perpendicular to the axis of the plastic cylinder 15, hence to the axis of the housing and parallel to each other. On the rearward face 16, two diametrically opposite, sector-like, equal areas 18 and 19 respectively, centered in the upper left and the lower right quadrants, are tinted red or any other suitable readily visible color. On the forward face 17, complementary areas 21 and 22 in the upper right and lower left quadrants are similarly tinted. All of these areas 18, 19, 21 and 22 are displaced from each other when correctly sighted by equally spaced intersecting vertical and horizontal diametrical bands 25 and 26 respectively. The tinting is of high transparency so that it does not appreciably diminish visibility when looking through the cylinder, all of the tinted areas having sharply defined edges. The edges of the tinted areas are thus arranged so that only when the eye of the observer is in alignment with the longitudinal axis of the cylinder, which is the correct sighting position, the edges of the tinted areas 18 and 19 on the rear of cylinder 15 and areas 21 and 22 on the front face thereof appear to be in alignment as shown in Fig. 2, the apparent spaces between the tinted areas forming perpendicularly crossed vertical and horizontal colorless bands 25 and 26 respectively, of equal width, the intersection of the center lines of the bands coinciding with the longitudinal axis of cylinder 15 and housing 10.

This is a situation to which the eye automatically responds with a high degree of precision. Any deviation from alignment of the edges of the rear and front tinted areas becomes strikingly apparent even though these edges are outside the direct line of vision, hence the observer can concentrate on aligning the cen-

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ter of the target with the intersection of the middle of the bands, the alignment of the edges as shown by the equalizing of the bands being instinctively and semi-automatically accomplished with a minimum of conscious effort.

This situation is shown in Fig. 6, which strikingly illustrates the unbalanced optical image existing when the eye is misaligned with the sight.

Because of the inherently high degree of accuracy in aligning the eye with the sight herein described, it is possible to use a much shorter sighting distance than is possible with conventional peep or groove sights and still obtain a superior placement of shots.

The use of color tinting is no handicap to color-blind people because the identity of the shade is of no importance, a reasonably deep tinting being readily observable by color-blind persons.

Although a light red is indicated in the preferred embodiment, any other shade that would not blend with the target or target background would be equally satisfactory and may be used. The bands 25 and 26 may of course be of a color contrasting to that of the sectors rather than colorless as described.

A modification of the above described invention is illustrated in Figs. 7 and 8. This modification is adapted for deflection-shooting and consists of a relatively thick plate 30 of transparent plastic material having parallel faces perpendicular to the axis of the gun (not shown) when conventionally mounted thereto. Concentric spaced-apart zones 31, 32, 33, and 34 are provided on such plate and each zone except the innermost is divided into twelve equal sectors by radially disposed clearance spaces (36 to 47 inclusive, Fig. 7). Each zone is tinted a different color, alternate zones being impressed on opposite sides of the plastic plate 30. The axial center of innermost zone 34 and therefore of plate 30 coincides with a line perpendicular to the faces of the plate and parallel to the axis of the gun barrel (not shown). Hence, when the eye is precisely aligned with the axial center of plate 30 and is maintained at the usual sighting distance rearwardly therefrom, the concentric clearance spaces formed between each tinted zone as well as the radial clearance spaces formed between each tinted sector will appear to be of equal width, the tinted areas thus forming a symmetric pattern. This modification gives a wide angle field which is necessary for successful deflection-shooting and combines the improved sighting characteristics with the wide field necessary for sighting on a moving target.

The colors of the various zones should be progressively lighter toward the outer edge to encourage (psychologically) full deflection allowance.

Another advantage of both these applications of this type of sight is that pain caused by sharp images focused on the observer's retina for long periods of time is eliminated. A color-reversal fatigue effect follows prolonged use but recovery is quick and there appears to be no further effect.

It is to be understood that plainly visible markings including, for example, such pattern as the outlines of either of the types of tinted areas heretofore described and as shown in Fig. 11 could be substituted for tinting if so desired. Such outlines are readily produced by scribing

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or engraving on the end surfaces of the sighting element.

It is also to be understood that two disks 50 of transparent material as shown in Fig. 9 may be substituted for the cylinder, the disks being disposed in spaced relationship so as to correspond to the ends of the cylinder, thereby eliminating the bulk of the plastic material.

For some applications, a pattern preferably of T-shape in two parts as shown in Fig. 10 and conforming to the above described relationship can be used. Such pattern is likewise engraved on the end surfaces of the sighting element. Another application for a sight of this type would be in connection with a camera.

It is therefore apparent that this invention provides a device for facilitating the precise visual alignment of the eye with the gun sights and the gun sights with the center of a target whereby the operator is enabled to substantially improve the accuracy of his shooting.

I claim:

1. An aiming device comprising in combination, a transparent sighting element having spaced apart forwardly and rearwardly facing surfaces, each surface having thereon a part of a symmetrical transparent colored pattern, said parts being arranged so that when viewed from a position rearwardly of said device and in exact alignment with the center of said symmetrical pattern at the usual sighting distance rearwardly therefrom, said parts together apparently form a single concentric colored transparent pattern separated by intersecting colorless bands.

2. A sighting device for use with a firearm having a barrel to determine the point of impact of a missile ejected therefrom comprising, a transparent cylinder adjustably mounted on the firearm with its axis substantially parallel to the barrel, the ends of said cylinder being perpendicular to its axis, each end of said cylinder having tinted areas thereon forming parts of a symmetrical design, said tinted areas being constructed and arranged so that only when viewed from a sighting position in exact alignment with the axis of said cylinder at the usual sighting distance rearwardly therefrom, said tinted areas appear to be in both vertically and horizontally symmetrical relationship.

3. A sighting device for use with a firearm having a barrel to determine the point of impact of a missile ejected therefrom comprising, a tubular housing adjustably mounted on the firearm with its axis substantially parallel to the barrel, a transparent cylinder secured within said housing in coaxial relation therewith, the ends of said cylinder being disposed perpendicularly to the axis of the housing, each end of said cylinder having identical tinted areas thereon forming parts of a symmetrical design, each of said tinted areas being generally sector shaped, said tinted areas being constructed and arranged so that only when viewed from a usual sighting position exactly in line with the axis of said housing at the usual sighting distance rearwardly therefrom, said tinted areas appear to be in both vertically and horizontally symmetrical relationship thereby defining equal-width, diametrically-disposed, intersecting vertical and horizontal bands of a color contrasting to said tinted areas.

4. For use with a firearm having a barrel, a device for sighting on a moving target, comprising, a transparent, colorless, circular plate having parallel front and rear faces disposed at right

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angles to the longitudinal axis of the gun when mounted thereto, and a plurality of spaced-apart, concentric, ring-like, transparently tinted zones, each of a different color and alternately disposed on said front and rear faces of said plate, said zones with the exception of the innermost zone being intersected by a plurality of radially disposed clearance spaces, the tinted areas thus formed being constructed and arranged to a form a symmetrical pattern wherein the concentric colorless spaces between said zones and the radially disposed clearance spaces are all of equal width only when viewed from a sighting position rearwardly of said plate and in alignment with the axial center thereof.

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