

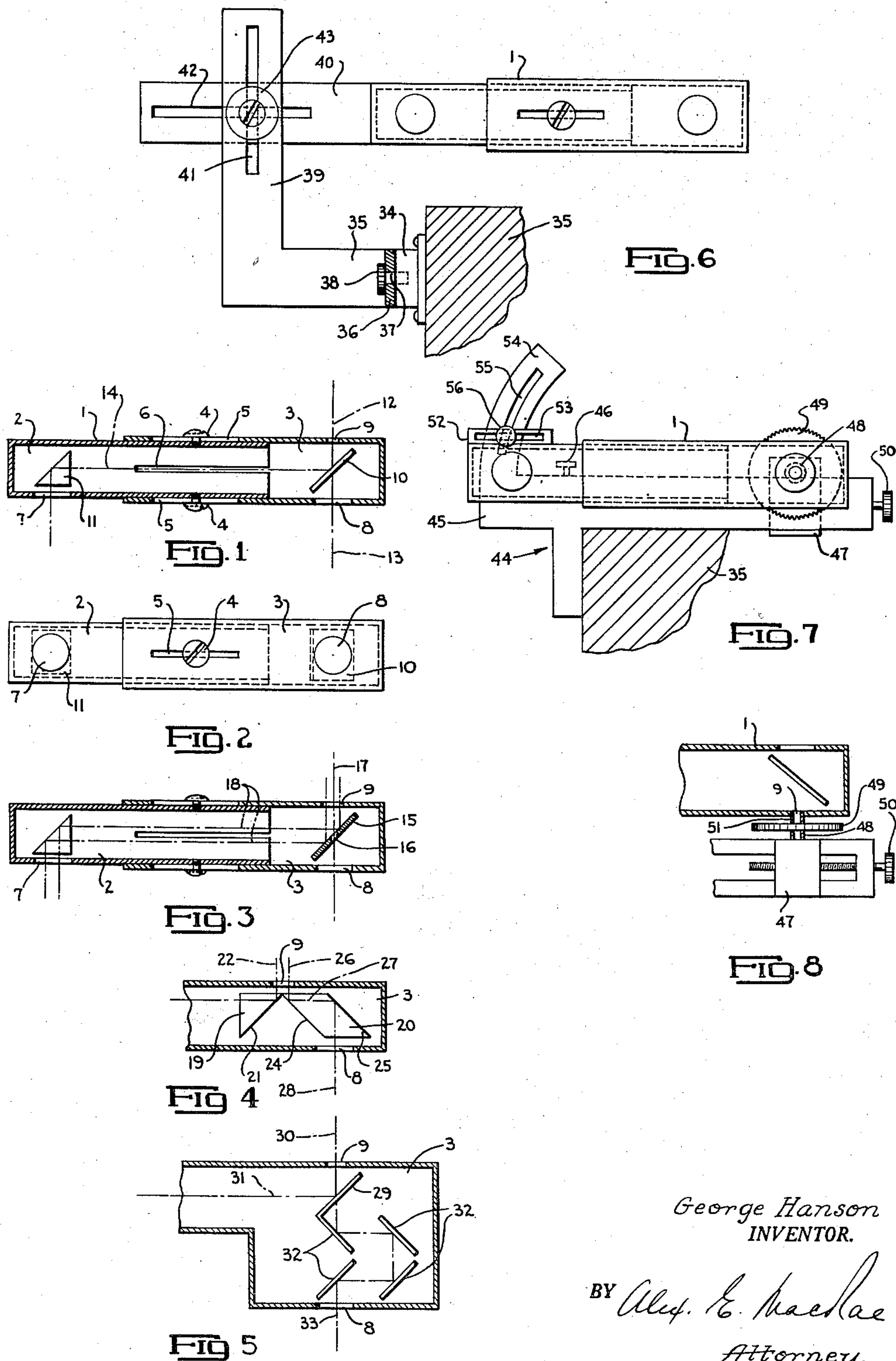
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GUN SIGHTING AID

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# UNITED STATES PATENT OFFICE

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## GUN SIGHTING AID

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This invention relates to a gun sighting aid for marksmen.

An object of the invention is to provide greater clarity of vision of gun sights and of the aiming mark with resulting greater accuracy in the use of guns. A more specific object is to provide means for utilizing the sight of both eyes of a marksman to obtain better vision of the gun sight. A further object is to provide a means for enabling a right handed marksman to employ the use of his left eye for sighting if it is the master eye and for enabling a left handed marksman to employ the use of his right eye for sighting if it is the master eye.

To this end, the invention broadly contemplates the provision of a marksman's aid comprising a hollow elongated casing having on one side thereof a pair of longitudinally aligned spaced openings arranged for application of the respective eyes of a marksman thereto, and a third opening in the opposite side thereof, inclined light reflecting means fixed within the casing in opposed relation to said third opening for reflecting longitudinally through the casing light rays entering the third openings, said light reflecting means also permitting passage of light rays therethrough to one of said first openings, and second light reflecting means fixed within the casing in opposed relation to the other of said first openings for receiving said longitudinally directed light rays and directing them through said latter opening.

The invention will be described with reference to the accompanying drawing in which:

Figure 1 is a plan view, in section, of one form of the invention,

Figure 2 is a side elevation,

Figure 3 is a sectional plan view of a modified form,

Figures 4 and 5 are partial sectional plan views of other modified forms of the invention,

Figure 6 is a side elevation of one form of mounting means for the device,

Figure 7 is a side elevation of another form of mounting means, and

Figure 8 is a partial plan view of the mounting means shown in Figure 7.

In the drawing, 1 is a hollow elongated tube or casing, which may be constructed of metal or other opaque material. Preferably, the casing is rectangular or square in cross section and is formed of two telescoping parts 2 and 3 to permit adjustment of the length thereof. Means for locking the two parts in desired adjusted relation comprises a pair of set screws 4 mounted

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on part 2 and extending through slots 5 in part 3. Part 2 may be provided with a pair of aligned cuts 6 in opposed walls thereof to facilitate locking pressure of the set screws 4.

5 The casing is provided with a pair of spaced apertures 7 and 8 in one wall thereof arranged for application of the respective eyes of the marksman thereto, the parts of the casing being adjusted as desired to place the apertures in line with the respective eyes of the marksman. A third aperture 9 is provided in the opposite wall of the casing in alignment with the line of sight through aperture 8. Cemented or otherwise fixed in place within the casing adjacent one end thereof is a partial light reflecting member 10 disposed in a vertical position in the line of sight between apertures 8 and 9 and having its light reflecting surface in a plane at 45° to the light beam entering aperture 9 to reflect a portion of the light therefrom longitudinally through the casing towards the aperture 7. The member 10 may be a semi-transparent mirror or prism and is adapted to permit passage of light directly therethrough and through aperture 8 to the respective eye of the marksman. Cemented or otherwise fixed within the casing adjacent the other end thereof is a total reflection prism or mirror 11 disposed in a vertical position with its light reflecting surface in a plane at 45° to the light beam reflected from member 10 and disposed in line therewith and with the aperture 7 to reflect such light beam therethrough to the other eye of the marksman.

35 The arrangement is such that about half the light entering aperture 9, as indicated at 12, passes through member 10 to one eye, as indicated at 13, the other half of such light, as indicated at 14, being reflected from member 10 to member 11 for reflection to the other eye.

40 Figure 3 illustrates a slightly modified form wherein, instead of the semi-transparent reflection member 10, a total reflection mirror or prism 15 is provided, the latter having an opening 16 therethrough in the line of sight to permit passage of light through such opening directly to the respective eye, as indicated by the beam 17. Light reflected from the area around the opening, as indicated at 18, is reflected by prism 11 to the other eye.

50 Figure 4 illustrates another modified form wherein, instead of the member 10, a pair of prisms 19 and 20 are provided. Prism 19 has a total light reflecting surface 21 disposed in a 45° plane to receive a light beam 22 and reflect it through the casing, as indicated at 23, to mem-



ber 11. Prism 20 has two parallel total light reflecting surfaces 24 and 25 disposed in a 45° plane and at an angle of 90° with respect to surface 21. Surface 24 is positioned adjacent surface 21 to receive another light beam 26 through opening 9 and to reflect it longitudinally of the casing, as indicated at 27, to surface 25, which reflects the beam, as indicated at 28, through aperture 8 to the eye of the marksman.

In some circumstances, it may be desirable to equalize the length of the respective light beams going to the eyes of the marksman in order to obtain images of the same size with resultant greater clarity of vision. Figure 5 illustrates an arrangement for accomplishing this purpose wherein a semi-transparent mirror or prism 29 is disposed in a 45° plane to receive a light beam 30 through aperture 9 and reflect a portion of it, as indicated at 31, longitudinally through the casing member 11. Two pairs of parallel total reflection mirrors 32 are provided to receive the portion of beam 31 and reflect it through a lengthened path out of opening 8, as indicated at 33.

Any suitable means may be provided for mounting the device in use. Thus, it may be provided with a spectacle mount or attached to a head band for application to the eyes of the operator. Preferably, however, it is proposed to mount the device directly on the gun.

Figure 6 illustrates a means for mounting the device on a gun, wherein a mounting plate 34 is fixed to the gun 35 just to the rear of the rear sight thereof. A mounting bracket 35 has an arm 36 provided with a slot 37 through which extends a set screw 38 mounted on plate 34, whereby the bracket may be longitudinally adjusted with respect to the gun. The bracket has an upwardly extending arm 39 for attachment to an arm 40 fixed to and extending from one end of the device 1. Each arm 39 and 40 has a respective longitudinal slot 41 and 42 therein, and a bolt or screw 43 extends through the slots to secure the arms in fixed relation. It will be observed that the slots permit lateral and vertical adjustment of the device 1 with respect to the gun.

Referring to Figures 7 and 8, means are therein shown for mounting the device directly on the rear gun sight as an integral part thereof. As shown, 44 is a rear gun sight of generally normal structure having a frame 45, vertical adjustment screw 46, block 47 carrying in screw-threaded engagement therewith aperture tube 48 with disc 49, and windage screw 50 for moving the block. The aperture disc 49 is provided with a rearwardly extending aperture tube 51 in alignment with tube 48 and being externally screw-threaded in a reverse direction to that of the screw threads on tube 48. The aperture 9 of the device has a screw-threaded edge to receive the tube 51, whereby the latter may be secured to the end of the device, rotation of the aperture disc serving to tighten the device to the sight. The other end of the device is fastened to frame 45 by means of a flange 52 fixed to the top of the device and having a longitudinal slot 53. The flange 52 engages a laterally abutting arm 54 carried by frame 45 and having a curved slot 55 intersecting slot 53. A bolt or screw 56 extends through both slots. The slot 53 permits adjustment of the length of the casing to vary the distance between apertures 7 and 9, while slot 55 permits angular vertical adjustment of the device as required, to correspond to the inclination of the line joining the two eyes of the marksman when he is taking aim.

There has thus been provided a marksman's aid wherein both eyes of the marksman are utilized to view the gun sight. The device therefore results in greater clarity of vision and accuracy in the use of guns. Moreover, in the case of a marksman having a relatively weak eye, it makes possible the convenient use of his master eye in sighting.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A marksman's aid comprising, in combination with a rear gun sight having a frame, a block, an aperture tube in screw-threaded engagement with the block, and an aperture disc fixed to the tube, a hollow elongated casing consisting of two telescopically arranged parts for longitudinal adjustment thereof to vary the length of the casing, said casing having on one side thereof a pair of longitudinally aligned spaced openings arranged for application of the respective eyes of a marksman thereto, and a third opening in the opposite side thereof, inclined light reflecting means fixed within the casing in opposed relation to said third opening for reflecting longitudinally through the casing light rays entering the third opening, said light reflecting means also permitting passage of light rays therethrough to one of said first openings, second light reflecting means fixed within the casing in opposed relation to the other of said first openings for receiving said longitudinally directed light rays and directing them through said latter opening, a second aperture tube fixed to the disc in alignment with the first aperture tube, said second aperture tube having screw-threaded engagement with the edge of said one of the first openings and in alignment with the latter opening, said casing being thereby rotatable about the axis of said tubes for angular adjustment thereof, and means fixed to said frame for securing the casing in fixed position with respect to the frame.

2. A marksman's aid as defined in claim 1, wherein said last-mentioned means comprises a bracket fixed to the frame, and means for releasably locking one of said casing parts to the bracket to permit said longitudinal and angular adjustments.

3. A marksman's aid as defined in claim 1, wherein said last-mentioned means comprises a bracket fixed to the frame and having a curved slot therein, a flange fixed to one of said casing parts and having a straight slot therein, and a locking pin extending through both slots.

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