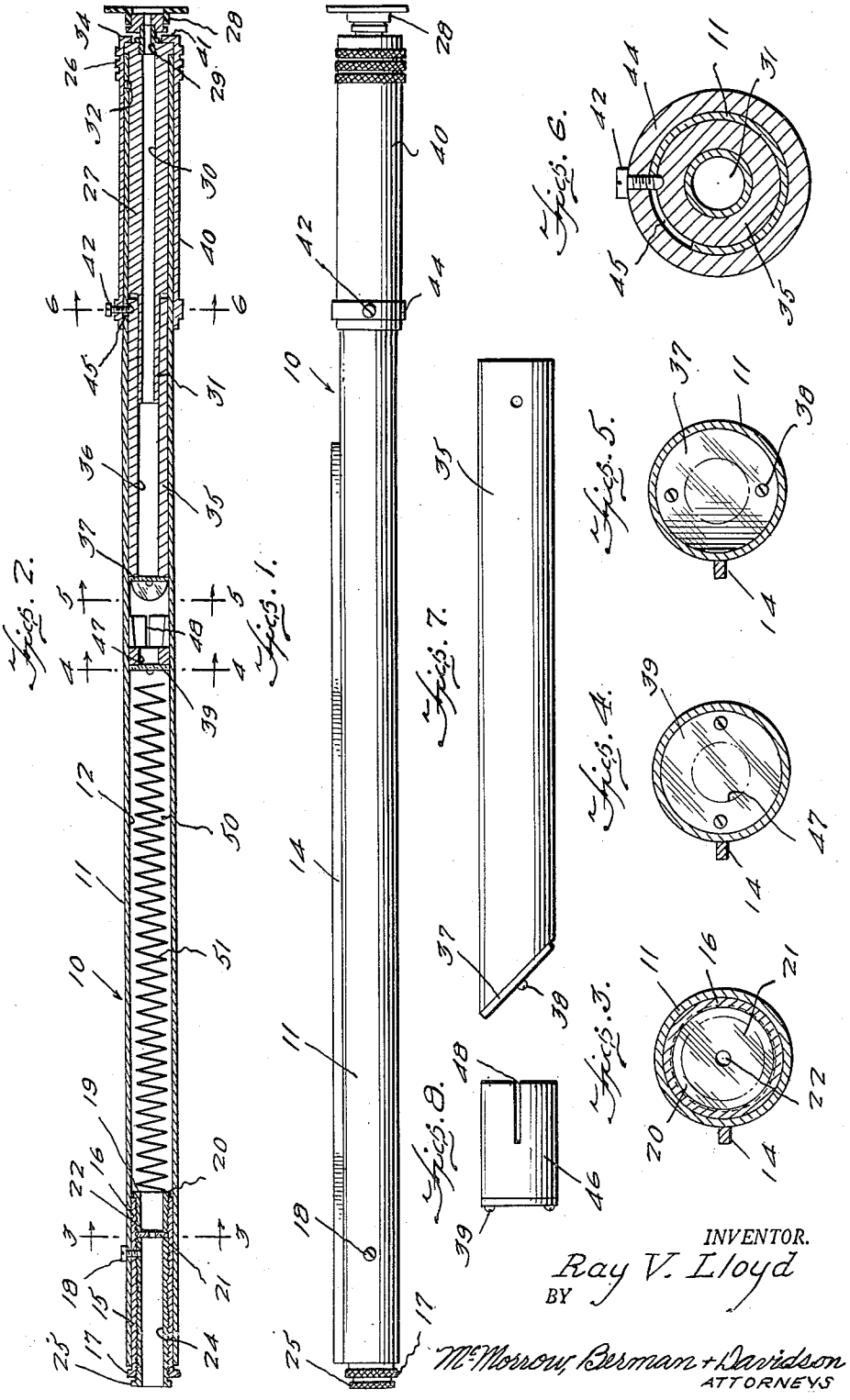
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POLARIZER FOR RIFLE TUBE SIGHTS

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INVENTOR.
Ray V. Lloyd
BY
McMorrow, Berman + Davidson
ATTORNEYS

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POLARIZER FOR RIFLE TUBE SIGHTS

Ray V. Lloyd, Tacoma, Wash.

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This invention relates to gun sights, and more particularly to a tube sight for rifles.

In the use of tube sights, it has been found that when too much light enters the front sight and passes to the back sight, the light in the tube lessens the clear perception of the front sight. The front sight is most effective when the light from the target is perceived through the aperture of the front sight and the front sight about the aperture is very dark. It is an object of this invention to provide means within the tube, between the front and back sights, for reducing the excess light entering the front sight to preserve the darkness about the aperture of the front sight.

Another object of this invention is to provide a tube sight having means between the front and back sights for removing the glare on the sights occasioned by the smooth inner surface of the tube between the sights.

A further object of this invention is to provide a tube sight having a pair of plane, polarized, optical discs between the front and back sights, one disc being rotatable relative to the other for controlling the light and glare on the front sight, as viewed from the eye piece or back sight.

With the above and other objects in view, my invention consists in the arrangement, combination and details of construction disclosed in the drawings and specification, and then more particularly pointed out in the appended claims.

In the drawings:

Figure 1 is a side elevation of a tube sight constructed according to an embodiment of my invention;

Figure 2 is a longitudinal section, taken substantially on the line 2—2 of Figure 1;

Figure 3 is a transverse section taken on the line 3—3 of Figure 2;

Figure 4 is a transverse section taken on the line 4—4 of Figure 2;

Figure 5 is a transverse section taken on the line 5—5 of Figure 2;

Figure 6 is a transverse section taken on the line 6—6 of Figure 2;

Figure 7 is a side elevation of the rotatable member on which one of the polarized discs is mounted, the member being removed from the assembly;

Figure 8 is a side elevation of the supporting member for the fixed polarized lens or disc, removed from the assembly.

Referring to the drawings, the numeral 10 designates generally a tubular gun sight for rifles and the like, constructed according to an

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embodiment of my invention. The gun sight 10 comprises an elongated, tubular body member 11 having a longitudinally-extending bore 12. An outwardly-extending flange 14 is fixed to or formed on the outer side of the body 11 at the front end thereof and extending rearwardly along the length of the tube. The flange 14 is provided for securing the gun sight 10 in a suitable mounting means carried by the rifle.

A front sight member 15 is slidably engaged in the forward end of the tube 11. The front sight member 15 is formed of an outer sleeve member 16 which slidably engages in the front end of the tube 11. A flange 17 is fixed to or formed on the front end of the sleeve 16 and is adapted to abut the forward edge of the body 11 to limit the sliding movement of the front sight member within the tube 11. A set screw, 18, threadably engages through the side wall of the the body 11 and the side wall of the sleeve 17 for fixedly securing the front sight member 15 in the body. A rear nipple 19 threadably engages in the inner end of the sleeve 16 and is formed with a peripheral rib or flange 20 which abuts the inner end of the sleeve 16 to limit the extension of the nipple 19 into the sleeve. An apertured disc 21 having a central aperture 22, is adapted to be supported within the front sight member 15. The disc 21 is adapted to engage the forward end of the nipple 19, and a threaded, tubular, inner sleeve member 24 is threadably engaged within the sleeve member 16 for clamping the disc 21 between the sleeve 24 and the nipple 19. The tubular member 24 threadably engages within the sleeve 16 and is formed with a flange 25 on the extreme forward end thereof.

The disc 21, which constitutes the forward sight of the tubular sight 10, is preferably made of glass or plastic of any suitable or desired color. The flanges 17 and 25 of the sleeves 16 and 24 are knurled, as noted in Figure 1 of the drawings, to provide for the removal of the disc 21 and for the insertion of a different disc, as desired.

The rear sight 26 is formed with a tubular member 27 slidably engaged in the rear end of the tubular body 11. An eye piece 28 having a reduced-diameter aperture 29 is threadably engaged in the bore 30 of the member 27 at the rear end thereof. The member 27 is formed with a forwardly-extending portion 31 having a reduced outside diameter. The bore 30 of the member 27 is continuous through the forward portion 31, as noted in Figure 2 of the drawings. A set screw 32 threadably engages through the

wall of the tube 11 and engages in the body 27 for fixing the body within the rear end of the sight. The rear end of the body 27 is provided with a peripheral flange 34 which abuts the rear end of the body 11 for limiting the sliding movement of the body 27 relative to the body 11.

A cylindrical tubular member 35 is rotatably supported within the body 11 and is formed with a longitudinal bore 36, the bore 36 having a diameter substantially the same as the outside diameter of the forwardly-extending portion 31 of the member 27 for frictional engagement therein.

The rear end of the member 35 is cut diametrically relative to the body 11 and the forward end of the tubular member 27 is cut at an obtuse angle relative to the longitudiinal axis of the body 11 and the member 35. The relation of the forward and rear ends of the member 35 is clearly noted in Figure 7 of the drawings. A polarized disc 37 is fixed on the forward end of the member 35 and may be secured thereto by screws 38 or other suitable fastening means. The polarized disc 37 is supported in the body 11 for cooperation with a second polarized optical disc 39 which is adapted to be fixedly secured within the body 11 forwardly of the disc 37. The action of the discs 37 and 39 for limiting the passage of light through the tubular body 11 will be more particularly described hereinafter.

An outer sleeve 40 is rotatably mounted on the rear end of the body 11. The sleeve 40 is provided with an inturned flange 41 at the rear end thereof which is adapted to abut the rear end of the tubular body 11 and the rear end of the member 27. A set screw 42 threadably engages through a rib 44 about the body 40 and extends freely through a groove 45 in the body 11 for engagement with the rotatable disc-supporting body 35. The groove or opening 45 in the body 11 extends peripherally around the body a short distance so that the outer member 40 and the inner member 35 may be rotated relative to the body 11 and to the disc 39 which is fixed against rotation in the body 11 forwardly of the disc 37.

A short, cylindrical member 46 is engaged within the tubular body 11 forwadly of the body 35, for fixedly supporting the polarized disc 39. The body 46 is formed with a bore 47 therethrough, the bore 47 being substantially the same diameter as the bore 36 of the body 35. The rear end of the cylindrical body 46 is formed with longitudinally-extending slots 48 which extend forwardly from the rear end of the body. The slots 48 provide for the outward or radial expansion of the rear end of the plug or body 46 for frictionally securing the body 46 within the tubular body 11. The plug 46 is adapted to be substantially secured intermediate the length of the body 11 by the frictional engagement of the plug with the inner wall of the member 11.

An elongated coil spring 50 is adapted to be engaged in the body 11 between the polarized disc 39 and the front sight member 15. The coils 51 of the spring 50 provide inward extensions along the length of the body 11 to substantially form peripheral ribs for breaking up the smoothness of the surface of the member 11 with which the light rays entering the forward sight member 15 will come in contact. The light rays entering the front sight member through the aperture 22 will normally strike the smooth inner surface of the body 11 to be reflected within the body 11, thereby causing an objectionable glare within the sight.

In the use of tubular sights, it has been noted that the light entering the front sight 22 of conventional forms of tube sights is so reflected within the body 11 that the rear side of the disc 21, through which the aperture 22 is formed, is brightened to a degree where the centering of a target in the aperture 22 is made more difficult and less positive. By providing the spring 50 between the front and rear sight members of the sight 10, the reflection from the smooth walls of the inner surface of the body 11 is thereby overcome. To further minimize the objectionable light within the tube sight 10, the polarized discs 37 and 39 are employed. The one disc 39 is fixed within the body 11, while the disc 37 is rotatably supported therein so that the light perceptible through the eye piece 28 may be reduced to the desired degree. By rotating the outer member 40, the member 35, which carries the rotatable disc 37, is also rotated so that the illumination of the target through the aperture 22 may be perceived through the aperture 29 of the eye piece 28, while the disc 21 will appear darkened about the aperture thereof. By making the rear surface of the disc 21 as dark as possible, or as desired, the contrast between the light entering the aperture 22 and the target is more readily noted to be centered in the aperture 29 of the eye piece 28.

I do not mean to confine myself to the exact details of construction herein disclosed, but claim all variations falling within the purview of the appended claims.

I claim:

1. A tube sight comprising a tubular body, a front sight member carried by one end of said body, a tubular member rotatably engaged in the other end of said body, said body having a segmental peripheral slot therein overlying said tubular member, an outer sleeve rotatable on said other end of said body, a set screw engaged between said tubular member and said sleeve through said slot connecting said member to said sleeve for limiting rotation together relative to said body, a rear sight member carried by said tubular member, a polarized disc carried by said tubular member, and a second polarized disc in said body between said front sight and said first polarized disc.

2. A tube sight comprising a tubular body, a front sight member in one end of said body, a tubular member rotatably engaged in the other end of said body, a reduced diameter extension on the forward end of said member, a hollow cylindrical member open at the opposite ends thereof rotatably engaged in said body and frictionally engaged on said reduced extension for rotation with the tubular member, an outer sleeve rotatable on said other end of said body and connected to said cylindrical member for rotation therewith and with said tubular member, rotation limiting means carried by said sleeve and said body for limiting the rotation of said sleeve on said body, a rear sight carried by said tubular member, a polarized disc carried by said cylindrical member, and a second polarized disc between said front sight and said first mentioned polarized disc.

3. A tube sight comprising a tubular body, a front sight member in one end of said body, a tubular member rotatably engaged in the other end of said body, a reduced diameter extension on the forward end of said member, a hollow cylindrical

member open at the opposite ends thereof rotatably engaged in said body and frictionally engaged on said reduced extension for rotation with said tubular member, an outer sleeve rotatable on said other end of said body and connected to said cylinder member for rotation therewith and with said tubular member, rotation limiting means carried by said sleeve and said body for limiting the rotation of said sleeve on said body, a rear sight carried by said tubular member, a polarized disc carried by said cylindrical member, a tubular plug frictionally engaged in said body intermediate the length thereof and a second polarized disc on said plug.

4. A tube sight comprising a tubular body, a front sight member in one end of said body, a tubular member rotatably engaged in the other end of said body, a hollow cylindrical member open at the opposite ends thereof rotatably engaged in said body and with said tubular member for rotation therewith, an outer sleeve rotatable on said other end of said body and connected to said cylindrical member for rotation therewith and with said tubular member, rotation limiting means carried by said sleeve and said body for limiting the rotation of said sleeve on said body, a rear sight carried by said tubular member, a polarized disc carried by said cylindrical member, and a second polarized disc between said front sight and said first mentioned polarized disc.

5. A tube sight comprising a tubular body, a front sight member slidably engaged in one end of said body, a tubular member slidably engaged in the other end of said body and rotatable therein, a second tubular member slidable in said other end and connected to said first tubular member for rotation therewith, an outer sleeve rotatably engaged about said other end of said body and connected to one of said tubular members for rotation therewith, a rear sight member carried by one of said tubular members, a polarized disc on the other of said tubular members, a tubular plug engaged in said body intermediate the length thereof, and a second polarized disc carried by said plug.

RAY V. LLOYD.

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