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SEARCH ROOM

Oct. 17, 1967 G. C. LUEBKEMAN 3,346,962

BINOCULAR FRONT SIGHT

Filed Aug. 25, 1965

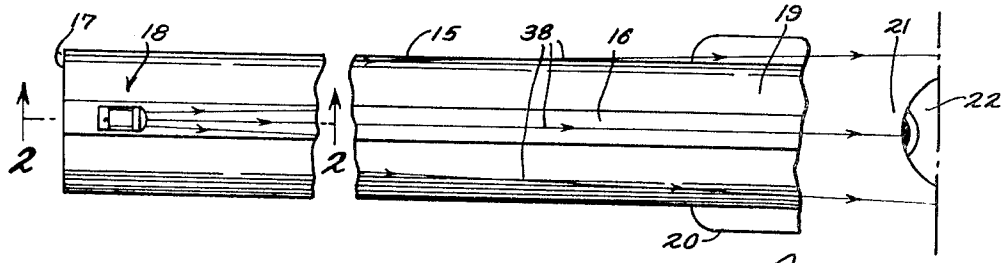


Fig. 1

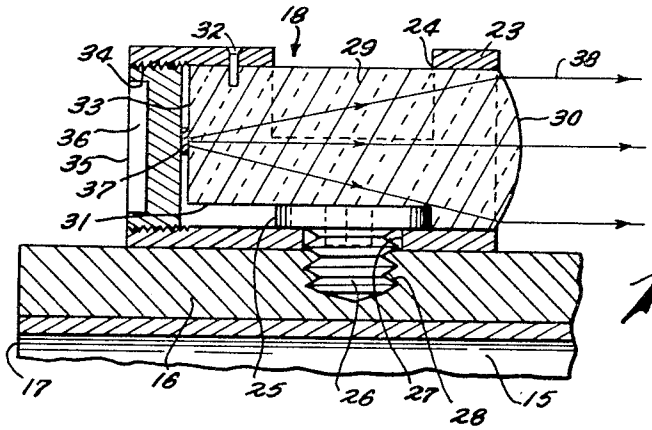


Fig. 2

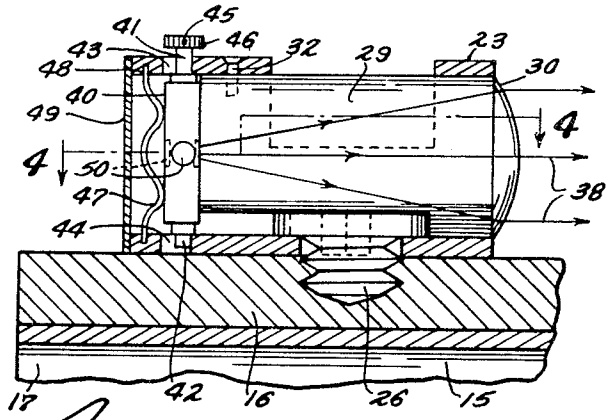


Fig. 3

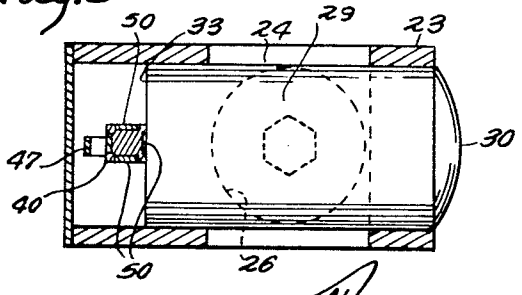


Fig. 4

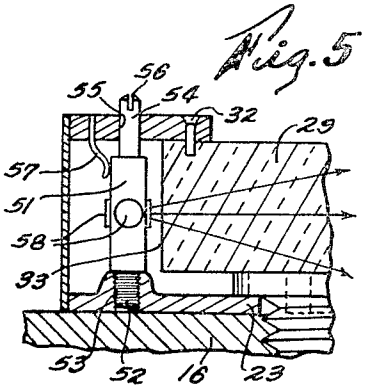


Fig. 5

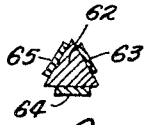


Fig. 6

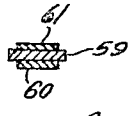


Fig. 7

1629

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BINOCULAR FRONT SIGHT

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6 Claims. (Cl. 33—52)

This invention relates to gun sights and is particularly directed to a novel means for varying the apparent color of a gun sight that is specifically adapted for use in the binocular method of aiming a gun, or the like.

The general subject matter of this invention is disclosed in a co-pending application, Ser. No. 339,530, filed Jan. 22, 1964, of myself and John R. Miles for Binocular Front Sight for Firearms.

It is very often desirable to change the apparent color of the front sight of a gun used in binocular shooting in order that the sight may be readily distinguished from the surrounding terrain and/or sky whereby the sight will be more attractive to the aiming eye of the shooter whilst being less attractive to the non-aiming eye and thus improve the image of the binocular sight in a particular situation. These changes are frequently desired in the field where tools are scarce and there is little time for a change-over and hence my invention also encompasses a relatively simple, adjustable means for changing the apparent color of a binocular front sight.

My invention therefore has for its principal object the provision of a simplified, self contained means for varying the apparent color of a binocular front sight, when required in the field, without the necessity of removing the entire sight from the gun barrel.

Another object of the invention is to provide an improved binocular front sight for firearm that is capable of transmitting an attractive color into the restricted sighting area for the aiming eye of the gun user properly positioned for shooting at a target and also transmitting to the non-aiming eye a color similar to the circumambient hues of the terrain and/or sky.

It is a further object of the invention to provide a self contained means for varying the two apparent colors transmitted by a binocular gun sight having the characteristics of the next preceding object of this invention.

These and other objects of the invention will be apparent from the following specification taken in conjunction with the accompanying drawings forming a part hereof and wherein like reference characters indicate similar parts throughout the several views.

In the drawings:

FIG. 1 is a fragmental, top plan view of a shot gun barrel with one form of my gun sight positioned thereon.

FIG. 2 is an enlarged, fragmental section taken on line 2—2 of FIG. 1.

FIG. 3 is a fragmental section like FIG. 2 showing a modification of the gun sight depicted in FIGS. 1 and 2 of the drawings.

FIG. 4 is a section taken on line 4—4 of FIG. 3.

FIG. 5 is a fragmental section similar to FIG. 2 of the drawings illustrating another modification of my gun sight.

FIGS. 6 and 7 are sections showing other forms for the rotatable element of the gun sights illustrated in FIGS. 3–5 of the drawings.

Referring now to FIGS. 1 and 2 of the drawings the numeral 15 indicates, by way of example, the barrel of a single barrelled shot gun provided with the usual sighting rib 16 on its upper side. The muzzle end 17 of the barrel is provided with one form of my binocular front sight 18, the breach end 19 of the barrel being mounted in the usual manner on a suitable stock 20. A laterally restricted sighting area 21 is located above the gun stock in longitudinal alignment with the gun barrel whereby

the aiming eye 22 must be located by the gun user, properly employing binocular aiming techniques, within said sighting area.

The gun sight 18 comprises a sleeve member 23 that is preferably cylindrical in configuration and which has a cut-out portion 24 in its upper central part, said cut-out portion being at least large enough to admit a headed mounting screw 25 therethrough. The shank 26 of the screw extends through a hole 27 formed in the bottom of the sleeve member and is threaded in a tapped bore 28 in the muzzle end of the gun rib 16. A generally cylindrical body member 29 of a suitable transparent material having a good index of refraction is positioned within the sleeve, said body member having an hemispherically curved end 30 which confronts the breach end of the gun and extends through the rear opening in the sleeve member 23. As best shown in FIG. 2 a flat 31 is ground in the bottom of the body member in order that the member may be inserted through the breach end of the sleeve, clear the headed mounting screw 25 and be firmly anchored in the sleeve by means of a pin 32 extending through the sleeve wall and into the body member 29. The muzzle end 33 of the body member terminates short of the open forward end of the sleeve, said forward end of the sleeve being provided with internal threads 34 into which is threaded a spot carrying member in the form of a plug 35, said plug being tightened in the sleeve by means of a tool that is received in a slot 36. A minute spot of color 37 is carried by the plug 35 and it will be noted, with reference to FIG. 2, that the hemispherically shaped end 30 of the body member 29 forms a convex lens and that the spot of color 37 is in the focal center of the lens whereby rays of light from the spot of color 37 will pass through the body member and be transmitted as substantially parallel rays 38 toward the breach end of the gun barrel and the laterally restricted sighting area 21 therefor.

In operation, when the spot 37 is colored red, for example, the light rays 38 of the same color will be apparent to the aiming eye 22 of the shooter provided said eye is properly positioned for binocular aiming of the gun, the non-aiming eye 39 being unattracted by the red color of the gun sight. Depending upon the color of the sky and the surrounding terrain the shooter may wish to change the color emitted from the front sight for observation by the aiming eye and to this end a plurality of plugs 35 may be provided each carrying a differently colored spot and each interchangeable in the sight sleeve member 23. In the instance of the device shown in FIGS. 1 and 2 it is only necessary to carry a number of the spot carrying members or plugs 35 on the person, the sight color being changed by unscrewing one spot carrying plug from the sleeve and inserting therein a spot carrying plug having the desired colored spot.

With reference to FIGS. 3 and 4 of the drawings which illustrate a modified form of my binocular front sight the interchangeable spot carrying member comprises a block 40 mounted for rotation on its vertical axis and which is substantially square in section and has opposed end trunnions 41 and 42 formed integral thereon, each trunnion being longitudinally movable in a slot 43 and 44, respectively, formed in the front portion of the sleeve 23. The upper trunnion 41 is elongated somewhat and has fixed to its end an operating knob 45 which has a knurled circular side wall 46 that may be manually grasped to rotate the member 40 on its trunions in the slots. A sinuous leaf spring 47 exerts resilient pressure against the rotatable member 40 and is mounted within the sleeve in any suitable manner, as by anchoring the spring ends in detents 48 formed in opposed portions of the interior wall of the sleeve 23. A translucent dust guard 49 closes the muzzle end of the

sleeve and may be mounted thereon in any suitable manner as by means of adhesive, or the like.

The plural, faces on the rotatable member **40** each carry a differently colored, minute spot **50** which may be inserted in the faces and are successively positioned aaginst the rear face **33** of the transparent body member **29** by turning the knob **45**; the spring **47** being adapted to urge the rotatable member toward the face **33** of the body member and thus position each spot **50** in the focal center of the body member and against said face and also permit rotation of the member **40** whilst its trunnions move longitudinally in their respective slots.

In FIG. 5 there is shown another modication of my invention wherein the rotatable member **51** has an irregular form in section and is provided at its lower end with an externally threaded shank **52** which is threaded in a tapped bore **53** in the sleeve **23** of the sight. The upper end of the rotatable member **51** is connected to a shaft **54** which freely projects through an opening **55** formed in the sleeve, the upper end of the shaft having a suitable tool receiving slot **56** therein. A leaf spring **57** is anchored in the sleeve **23** and has its free end bearing against the member **51** in order to hold the member in angularly adjusted positions. The rotatable member has a plurality of faces each carrying a minute colored spot **58** that will each be adapted to be positioned in the focus of the hemispherical face on the breach end of the transparent body member **29** of the front sight.

As illustrated in FIGS. 6 and 7 of the drawings, the rotatable members **40** and **51** depicted in FIGS. 3–5 of the drawings may have other irregular forms such as the flat form **59** shown in FIG. 7 wherein spots **60** and **61** of different colors are disposed on its two major faces or the member may have a triangular configuration in section like that shown at **62** whereby each of its three major faces may carry one of three different colored spots **63**, **64** and **65**.

In all my gun sight forms described heretofore only the sight images produced in the aiming eye of the shooter using binocular sight have been described. The peripheral color surrounding the minute spot will now be described, this peripheral color being generally the color observed by the non-aiming eye of the shooter.

With reference to the form of my invention shown in FIGS. 1 and 2 of the drawing, it is contemplated that the interchangeable spot carrying plug members **35** may be composed of opaque or translucent materials as the requirements of the sight may dictate and it is further thought that the inner faces of the members **35** which confront the rear face **33** of the body member **29** may have an over all black, white or other color applied thereto to surround the contrasting color of the spot **37**. Thus, by way of example, for night shooting the overall inner surface of the spot carrying plug could be colored black whilst the minute spot could have a white color whereby the aiming eye of the gun user would see the sight as the color white whilst the non-aiming eye would not be attracted to the sight because its image would blend with the dark or black color of the night.

Now with reference to the modification of my invention shown in FIG. 5 it will be further noted that the rotation of the member **50** will cause the spots **58** thereon to move vertically with respect to the body member **29**. This vertical movement of the spots will result in the movement of the sighting area **21** in a vertical direction so that the binocular sighting position of the gun may be adjusted vertically to fit the individual requirements of the gun user. When a square spot carrying element is used and all the spots have the same color each quarter turn of the spot carrying element would represent the minimum quarter thread, vertical adjustment whilst the use of the flat or triangular spot carrying members will have different angular degrees of spot adjustments, as will be readily apparent to those skilled in the art.

What is claimed is:

1. A binocular front sight for firearms comprising a sleeve member adapted to be mounted upon a gun barrel, an elongated transparent body member having a hemispherically curved end projecting through the breach end of the sleeve member and having its muzzle end terminated short of the opposed end of the sleeve member, means fixing the body in the sleeve, and an interchangeable spot carrying member mounted within the opposed end of the sleeve member and in front of the muzzle end of the body member.

2. A binocular front sight for firearms comprising a sleeve member adapted to be mounted on a gun barrel, an elongated transparent body member within the sleeve member and having its rear portion in the open rear end of the sleeve member, a hemispherically shaped, convex lens formed on the rear portion of the body member, the forward end of the body member terminating rearwardly of the open forward end of the sleeve member, an interchangeable member disposed within the forward portion of the sleeve member, a minute spot carried by the interchangeable member, and adjustable means between the sleeve and the interchangeable member for removably positioning the minute spot at the focal center of the lens.

3. A binocular front sight for firearms as set forth in claim **2** characterized by the fact that the interchangeable member is a plug, and the adjustable means comprises external threads on the plug threaded in internal threads in the open forward end of the sleeve.

4. A binocular front sight for firearms as set forth in claim **2** characterized by the fact that the interchangeable member is a block rotatable on a vertical axis and having a plurality of faces each carrying a minute spot, and the adjustable means comprises a pair of trunnions on opposite ends of the block receivable in slots formed in the sleeve, one trunnion extending from the sleeve, a knob fixed to the extended trunnion, and resilient means for holding the block in angular adjusted positions.

5. A binocular front sight for firearms as set forth in claim **2** characterized by the fact that the interchangeable member is a block rotatable on a vertical axis and having a plurality of faces each carrying a minute spot, and the adjustable means comprises a threaded shank on one end of the block engaged in a tapped bore formed in the sleeve, said block having a shaft projecting from the opposite end and through a hole formed in the sleeve, and a tool receiving slot on the free end of the shaft.

6. A binocular front sight for firearms comprising a sleeve member adapted to be mounted on the muzzle end of a gun barrel, an elongated transparent body member within the sleeve member and having its rear portion in the open rear end of the sleeve member, a convex lens formed on the rear portion of the body member, the forward end of the body member having a lateral, planar face disposed rearwardly of the open forward end of the sleeve member, an interchangeable plug member removably positioned within the forward portion of the sleeve member with its rear, lateral face confronting the forward face on the transparent body member, said rear lateral face on the plug having a color substantially that of the circumambient color conditions, and a minute spot of a contrasting color in the central part of the rear lateral face of the plug, said minute spot of color lying in the focal center of the convex lens on the body member.

No references cited.

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