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SEARCH ROOM

Jan. 11, 1966 W. E. CHAPERON 3,228,108

COMBINATION BORE SIGHTING DEVICE AND BORE SCOPE

Filed May 26, 1965

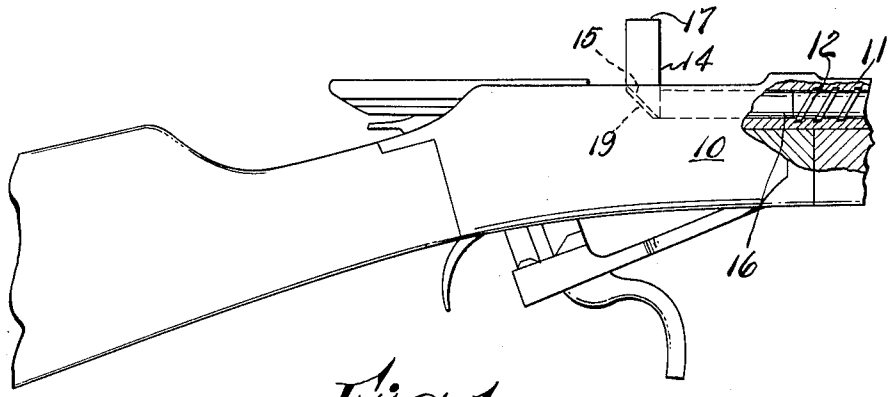


Fig. 1

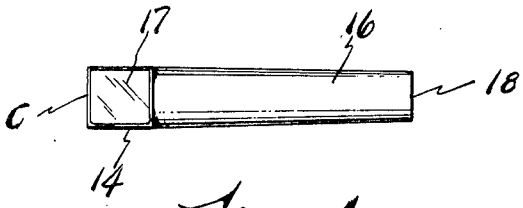


Fig. 4

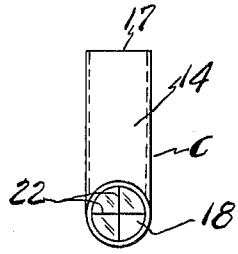


Fig. 5

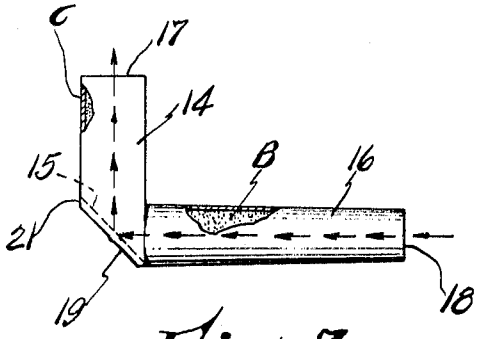


Fig. 3

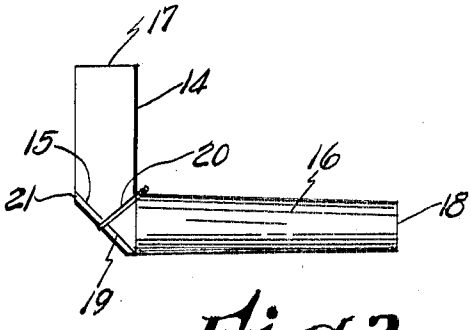


Fig. 2

1502

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COMBINATION BORE SIGHTING DEVICE AND BORE SCOPE

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This is a continuation-in-part application of my application on a Bore Sighting Device, filed July 17, 1961, Serial No. 124,517, now abandoned, and relates to a combination bore sighting device and bore scope for use in sighting the bore and gun barrel, either during the course of manufacture or with guns presently in general use.

One of the prime objects of the invention is to provide a very simple, practical and effective combination bore sighting device and scope, operative on the principle of reflective light, which device can be easily and quickly inserted into the gun chamber and/or bore of the gun after the gun is secured in a vise or other securing means, so that the condition of the barrel may be easily and conveniently inspected for wear, obstruction, and such other defects as may exist.

Another object of the invention is to provide a combination bore sighting device and scope which, when used as a sighting device and inserted in position, prevents closing of the breech block and eliminates the necessity of the user attempting to bring his eye into horizontal alignment with the gun bore to observe the condition of the bore.

A further object of the invention is to design a combination bore sighting device and bore scope which can be readily manufactured and mounted, and by means of which sighting and accurate alignment can be determined without use of live ammunition, said device being compact in size so that it can be readily carried in the owner's pocket for checking the gun in the field to determine if the barrel needs cleaning, and if there is dirt or other foreign matter in the bore making it dangerous to fire the gun.

A still further object is to provide a bore sighting device and bore scope which is simple and easy to use, and which merely requires that when used as a bore sighting device the breech be elevated so that sufficient light enters the barrel and reflects the condition of the interior surface thereof.

With the above and other objects in view, the present invention consists in the combination and arrangement of parts, hereinafter more fully described, illustrated in the accompanying drawing, and more particularly pointed out in the appended claims; it being understood that changes may be made in the form, size, proportion and minor details of construction, without departing from the spirit, or sacrificing any of the advantages of the invention.

In the drawing:

FIG. 1 is a fragmentary side elevational view of a conventional rifle with my combination bore sight and scope mounted in position therein.

FIG. 2 is a full size side elevational view showing the mirror secured in position for fusing.

FIG. 3 is a view similar to FIG. 2, the broken away sections indicating the roughening of the outer surface of the device and the metalizing thereon.

FIG. 4 is a top plan view thereof.

FIG. 5 is an end elevational view of the device.

Referring now to the drawing in which I have shown one embodiment of my invention.

The numeral **10** indicates generally the breech of a conventional rifle to which the instant device is applicable and in which the device is shown mounted in bore sighting position, the breech is shown merely for the purpose of illustration, and includes a barrel **11** connected thereto

in the conventional manner, which barrel is bored and rifled as at **12** as usual.

The device to which the instant application is directed is generally L-shaped and comprises a one-piece member formed of transparent material, a vertical base leg **14**, substantially square in cross section, forms one end of the device the lower end of said leg terminating in an angularly disposed flat surface **15**, and a laterally projecting cylindrical leg **16** is formed integral with the base leg **14** at a point directly opposite the angled surface **15**, said cylindrical leg being outwardly tapered as shown so that the end portion is of a size to permit it to be readily inserted in the end of the gun barrel **11** in exactly the same manner as is a bullet, the upper end of the base leg serving as an optical window **17** and is highly polished to provide maximum visibility, and this also holds true for the optical window **18** on the free end of leg **16**.

A relatively thin, flat mirror section **19** formed of Lucite as is also the main body, is accurately mounted in intimate facial contact with the flat translucent surface **15** by means of translucent acrylic glue or the like, the inner face of said mirror being absolutely flat while the outer surface is vacuum metalized and backed to provide proper reflecting surface.

A small metal strap **20** (see FIG. 2 of the drawings) secures the mirror in position on the surface **15**, after which the device is placed in an oven or other heated chamber (not shown), and subjected to a temperature of approximately 170° for approximately two hours' time, and this fuses the mirror in position on the surface **15**.

After the device is cooled, the entire outer surface, with the exception of the optical surfaces **17** and **18**, is sanded or otherwise roughened as indicated at B, after which the device is metalized as indicated at C, for the purpose of reducing or eliminating all glare and producing near perfect light transmission where intended, the optical surfaces **17** and **18** are, of course, protected during the metalizing process.

It will be noted that the edge **21** of the mirror **19** is slightly beveled to provide a smooth streamlined construction, and cross hairs **22** are provided on the optical surface **18** on the end of the leg **16** to enable the user to align the bore to target, thus permit sighting in without use of ammunition.

The device has various uses and can be utilized as a safety device because if the gun should accidentally remain loaded, the sight could not be placed in position in the barrel. It can also be used as a bore scope to check the condition of the barrel, the sight is placed in the barrel breech as indicated in FIG. 1 of the drawing, and the rifle mounted in a securing device (not shown), thus the user will have both hands free.

In checking the barrel, the user first sights through the optical surface **17**, and then uses the naked eye to sight through the muzzle end of the barrel, thus inspecting the entire length of said barrel.

From the foregoing description, it will be obvious that I have perfected a very simple, practical and inexpensive bore sighting device and scope, and method of producing same, it being understood that the disclosure as given is by way of illustrative example only, rather than by way of limitation of the invention, and that the details may be varied within the scope of the appended claims.

What I claim is:

1. A combination bore sight and scope comprising; a generally L-shaped, one-piece member formed of a transparent material, including a vertical base leg, substantially square in cross section, the lower end of said leg terminating in an angularly disposed flat surface; a later-

ally projecting leg, generally cylindrical in cross section on the face of the vertical leg opposite the angularly disposed surface, the longitudinal center line of which intersects the longitudinal center line of said vertical leg, and a relatively thin mirror section provided on said angled flat surface.

2. The combination defined in claim 1 in which flat optical, highly polished surfaces are provided on the free ends of said vertical and horizontal legs respectively, and a metalized coating covering the entire surface of said member, excepting said optical surfaces.

3. A combination bore sight and scope comprising; a generally L-shaped one-piece member formed of transparent material including a base leg, square in cross section, the lower end of the leg terminating in an angularly disposed flat surface; a laterally projecting leg on the one face of the base leg opposite said angularly disposed surface; the free ends of the square and cylindrical legs respectively forming optical sights and a metalized coating covering the entire exterior surface of said member with the exception of the optical sights at the free ends of the square and cylindrical legs respectively.

4. In a device of the class described comprising; a

generally L-shaped, one-piece member formed of transparent material including a base leg, square in cross section, the lower end of which terminates in an angularly disposed flat surface; a laterally projecting, cylindrical leg on one face of the base leg opposite said angularly disposed surface; optical sighting surfaces at the free ends of the square and cylindrical members and a metalized coating forming a covering for the entire exterior surface of the device excepting the optical sighting surfaces at the free ends of the square and cylindrical surfaces respectively.

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