33-259. OR 2,345,553 SR

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April 4, 1944. H. A. BROWN ET AL 2,345,553

FIREARM SIGHT

Filed March 12, 1942

Fig. 1

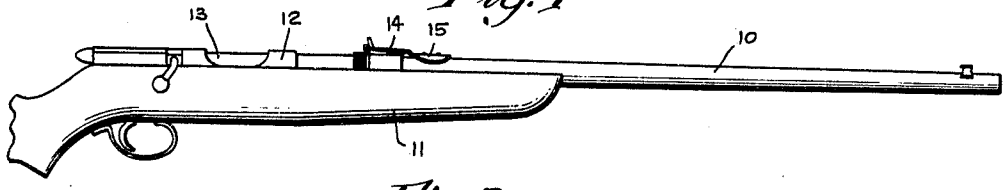


Fig. 2

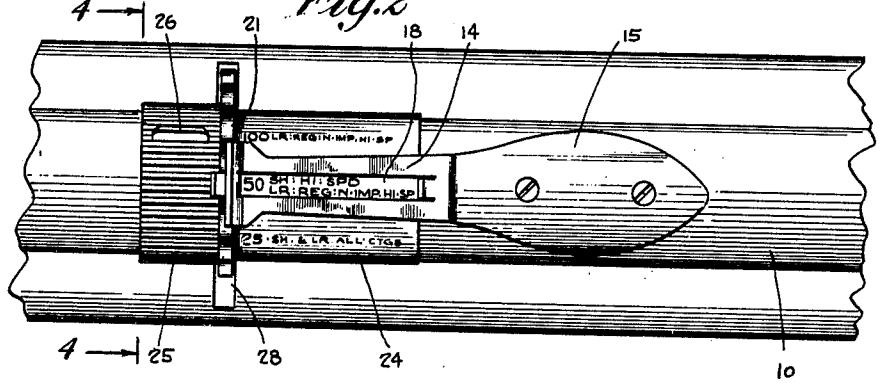


Fig. 3

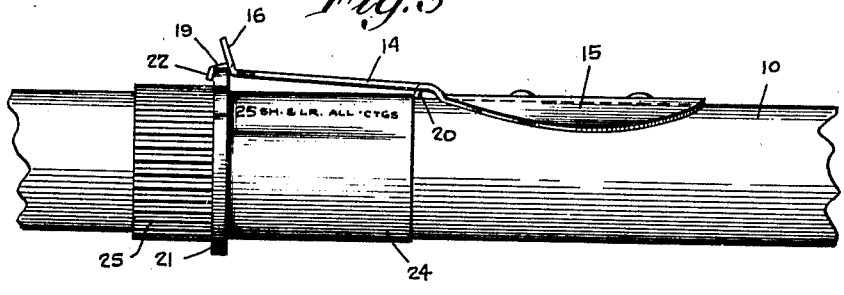
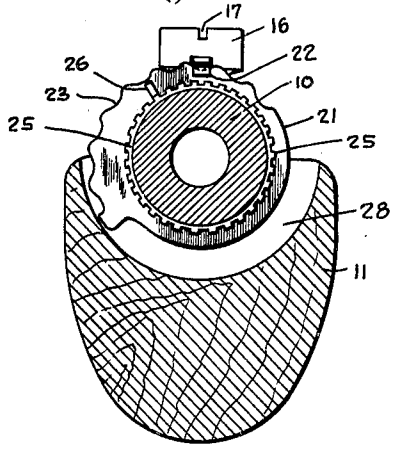


Fig. 4



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33 GEOMETRICAL INSTRUMENTS.

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FIREARM SIGHT

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Application March 12, 1942, Serial No. 434,320

3 Claims. (Cl. 33—58)

This invention relates to firearms, and particularly, to means for elevating and locating the rear sight or eye piece of a firearm adapted to fire cartridges of varying ballistics.

The improved sight and sight mounting of this invention are especially adapted to caliber .22 rifles wherein not less than six different cartridges of varying power and velocity may be fired, interchangeably, in the same gun. As a consequence, the sight settings which are correct for one type of cartridge, as for instance one of short medium velocity, will not be correct for a long rifle high velocity cartridge.

It is an object of this invention to provide an improved rear sight means for adjusting the rear sight to different range settings and simultaneously indicating the type of ammunition adapted to be used at each respective range setting. A further object is to provide a rear sight with a slot through which may be read indicia on the rear sight adjusting means, indicative of various range settings and the kind of ammunition having balistics commensurable to each respective range setting. A still further object is to provide an improved method of assembling a rear sight elevating device whereby its respective elements may be readily adjusted in the proper relationship. Other objects, features and advantages of the invention will be more particularly described hereinafter.

In the drawing:

Fig. 1 is a fragmentary side elevation of a firearm on which is mounted the improved rear sight elevating device of this invention.

Fig. 2 is an enlarged fragmentary plan view of the sight and sight mounting shown in Fig. 1.

Fig. 3 is an enlarged fragmentary side elevation.

Fig. 4 is a transverse sectional elevation substantially on line 4—4 of Fig. 2.

The gun shown in the drawing is preferably of the type constructed and arranged to fire cartridges of varying ballistics and comprises the usual barrel 10 and a stock 11 suitably secured to the barrel. The stock is recessed in the usual manner to receive the lower part of the breech mechanism housing frame or receiver 12 in which the bolt 13 is slidably mounted. Other features of the gun which are not regarded as essential to a full and clear description of this invention, are described and shown in detail in the application of C. C. Loomis, S. N. 363,613, filed Oct. 31, 1940. It will be understood, however, that the present invention is applicable to any gun adapted to shoot cartridges of varying ballistics, and that the particular gun referred to above is for the purpose of illustration only.

A common type of rear sight which may be adapted for use in the present invention is the adjustable step leaf sight which consists, in part, of a relatively thin strip of resilient metal 14 struck from flat metal stock and suitably secured at its forward end 15 to the upper side of the gun barrel 10. The rear end of the sight base 14 is unsupported and terminates in an upwardly bent leaf 16 having a sight surface or notch 17 of any desired configuration. Although an open sight is shown, it will be understood that a closed sight or peep sight may be used.

The improved sight adjusting means of the present invention comprises a member, hereinafter described, rotatably supported on the barrel and adapted to engage the unsupported end of the base 14 to elevate and depress the sight leaf 16 for different ranges. For cooperation with this member, there is formed in the base 14 and the lower portion of the leaf 16 a slot 18. Said slot extends from a point adjacent the barrel mounting end 15 of the base 14 to the rear end of the base 14 and a short distance into the leaf 16. The metal at the forward end of the slot is struck down to form a lug or tongue 20, while the metal at the rear of the slot is struck downwardly and backwardly, as shown at 19, and then turned downwardly in a tongue or lug 22. The portion 19 and lug 22, in conjunction with the adjacent surface of the leaf 16, form a groove adapted to engage the periphery of a suitable hard metal eccentric disk or cam 21 which comprises one element of the improved sight elevating means. This groove and the lug 20 prevent longitudinal movement of the sight elevating means on the barrel 10 as hereinafter described.

Referring to Fig. 4, the eccentric surface or periphery of the cam disk 21 is substantially involute in contour and provided with a plurality of transverse notches 23, adapted to be engaged by the tongue 19 of the leaf sight. Thus, when the disk 21 is rotated, its eccentric surface elevates (or lowers) the free end of the resilient base 14; the sight leaf 16 is thereby adjusted to various range settings and locked at each setting by engagement of the tongue 19 in the respective notch 23.

In order that the cam disk may be free to rotate on the assembled barrel 10 and stock 11, the latter is provided with a transverse channel or slot 28 within which the outer eccentric surface of the disk may rotate. The slot 28 may

also constitute means for preventing longitudinal displacement of the cam disk 21 with respect to the barrel 10 supplementing or replacing the means heretofore described for this purpose.

The cam disk 21, is secured on an associated element of the sight elevating means which comprises a thin, tubular, slightly tapered sleeve 24 formed from flat stock and consisting of any suitable hard metal such as steel or light metal alloy having an inside diameter of such dimensions as to permit the sleeve to be slipped over the end of the barrel 10 to a position in which its forward end abuts the lug 20 of the base 14. It will be clear that the sleeve 24 is free to rotate on the barrel 10 but is prevented from sliding forwardly by the lug 20 or rearwardly by the lug 22, which engages the face of the cam disk 21 so as to restrain the disk and consequently its sleeve 24 against rearward movement.

The portion of the sleeve measured by the length of the slot 18 is provided with sets of indicia arranged longitudinally thereon and in circumferentially spaced relation as shown in the drawings. Each set of indicia consists of numerals indicative of a certain range opposite which are letters designating, in abbreviated form, the kind of ammunition commensurate to that particular range. It will be evident that by rotating the sleeve 24 upon the barrel 10, the respective sets of indicia will be brought opposite the slot 18 of the leaf sight through which slot the indicia are intended to be read. Furthermore, the relationship of the sets of indicia on the sleeve to the notches 23 on the eccentric surface of the cam 21 is such that by rotating the sleeve, the sight leaf 16 is automatically locked at an elevation which corresponds to the indicia seen through the slot 18 of the sight.

In order that the notches 23 of the cam disk 21 may be properly oriented with respect to the indicia on the sleeve, the disk may be formed separately as an annulus adapted to be slipped onto the sleeve 24 and fixedly secured thereto. To this end a suitable length of the rear portion of the sleeve is provided with knurling or longitudinal ribbing 25, and the periphery of the aperture in the cam 21 may, if desired, be given a corresponding configuration. In assembly the cam disk 21 is oriented to the desired position relative to the indicia on the sleeve 24, applied to the knurled end thereof and driven into place thereon. By this method of assembly, accurate adjustment of the eccentric surface of the disk 21 with respect to the indicia on the sleeve 24 may be conveniently and inexpensively made.

The knurling or ribbing 25 also serves as means adapted to be engaged by the shooter's fingers for rotating the sleeve on the barrel. Auxiliary means for facilitating the rotation of the sleeve may comprise a radially disposed lug or fin 26 secured to the ribbed portion of the sleeve as shown in Figs. 2 and 4.

Although the particular sight elevating means described and illustrated herein embodies the preferred construction, it will be understood that other variations and modifications may be made within the scope of the appended claims, which claims are to be broadly construed.

What is claimed is:

1. A sight for firearms comprising a resilient sight member secured to the barrel of said firearm, said member having a sight aperture and a closed slot adapted to function as a reference line; a manually controlled sleeve mounted to rotate on said barrel on an axis coincident with the axis of said barrel, said sleeve having a separable cam disk secured to one end thereof provided with an exterior surface eccentric to the axis of said barrel and engaging said sight member to raise or lower said sight member by turning said sleeve on said barrel there being notches in the eccentric surface of said disk; indicia on the periphery of said sleeve corresponding respectively to said notches and constructed and arranged to be consecutively viewed through the slot in said resilient member as the sleeve is turned; and means on said sleeve to rotationally lock the cam disk angularly with respect to said sleeve whereby each of said notches may be positioned opposite corresponding indicia on said sleeve.

2. A sight for firearms comprising a resilient sight member secured to the barrel of said firearm, said member having a sight aperture and a closed slot adapted to function as a reference line; a manually controlled sleeve mounted to rotate on said barrel on an axis coincident with the axis of said barrel, said sleeve having a separable cam annulus secured to one end thereof provided with an exterior surface eccentric to the axis of said barrel and engaging said sight member to raise or lower said sight member by turning said sleeve on said barrel there being notches in the eccentric surface of said annulus and slots in the inner edge thereof; indicia on the periphery end of said sleeve corresponding respectively to said notches and constructed and arranged to be consecutively viewed through the slot in said resilient member as the sleeve is turned and longitudinal ribs on the rear end of said sleeve interengaging with the slots of said annulus to rotationally lock the cam annulus angularly with respect to said sleeve whereby each of said notches may be positioned opposite corresponding indicia on said sleeve.

3. A sight for firearms comprising a resilient sight member secured to the barrel of said firearm, said member having a sight aperture and a longitudinal closed slot adapted to function as a reference line; a lug extending outwardly from said sight member adjacent said aperture; a second lug extending downwardly from said resilient member at the forward end of said slot; a manually controlled sleeve mounted to rotate on said barrel on an axis coincident with the axis of said barrel, the forward end of said sleeve abutting said second lug to prevent said sleeve from sliding along said barrel; a cam annulus secured to the opposite end of said sleeve provided with an exterior surface eccentric to the axis of said barrel engaging said first lug to raise or lower said sight member by turning said sleeve on said barrel there being notches in the eccentric surface of said cam annulus and slots in the inner edge thereof; indicia on the forward end of said sleeve corresponding respectively to the notches in said eccentric surface and constructed and arranged to be consecutively viewed through the slot in said resilient member as the sleeve is turned; and longitudinal ribs on the rear end of said sleeve interengaging with the slots of said annulus to rotationally lock said cam annulus angularly with respect to said sleeve whereby each of said notches may be positioned opposite corresponding indicia on said sleeve.

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