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May 19, 1942. G. F. PALDANI 2,283,692

GUN SIGHT

Filed April 25, 1941

Fig. 1.

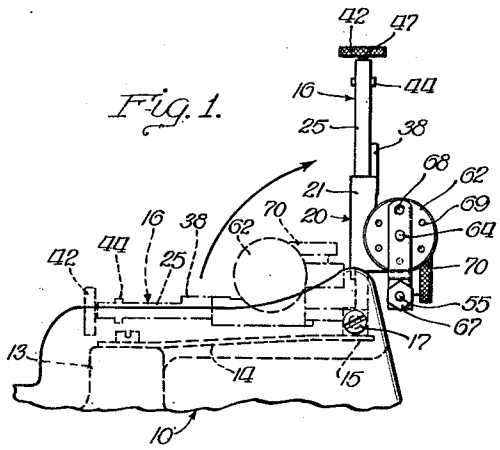


Fig. 2.

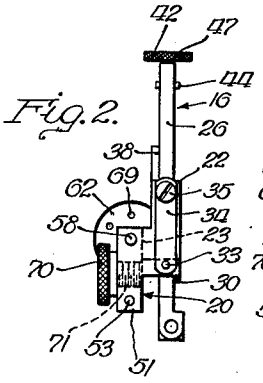


Fig. 3.

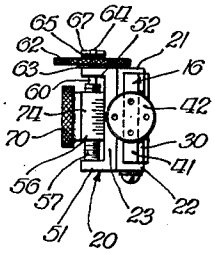


Fig. 5.

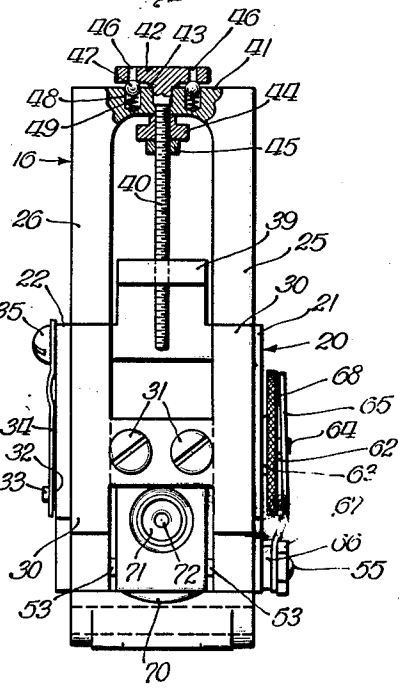
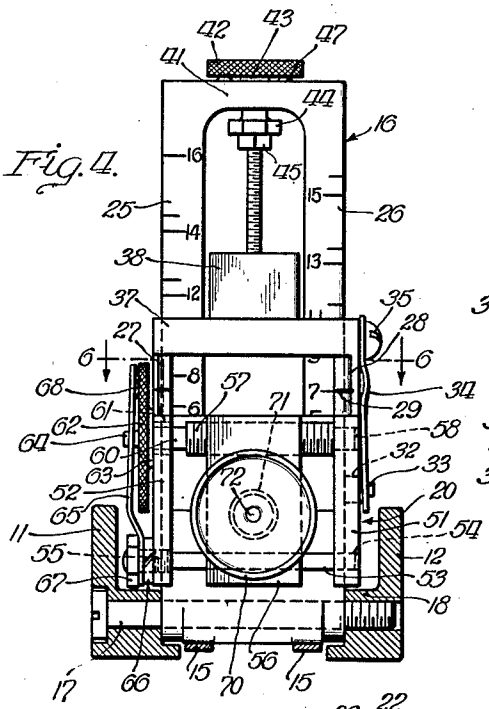


Fig. 4.



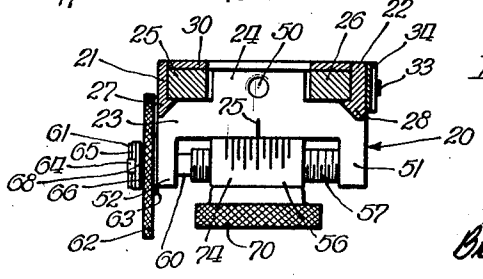


Fig. 6.

INVENTOR.
George F. Paldani

BY
Brown, Jackson, Boettcher & Dinsmore
Attys.

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UNITED STATES PATENT OFFICE

2,283,692

GUN SIGHT

George F. Paldani, Waukegan, Ill.

Application April 25, 1941, Serial No. 390,255

2 Claims. (Cl. 33—55)

This invention relates to gun sights and has to do with sights for rifles and similar arms.

My invention is directed to gun sight means having micrometer adjusting means both for elevation and windage whereby accurate adjustment of the sight may be effected quickly and with precision, with a minimum of delay. The micrometer adjusting means includes click means whereby the extent of adjustment of the sight, either for elevation or for windage, may readily be determined without necessity for consulting the scales of the sight. I also provide means whereby any looseness or play of parts of the sight is eliminated, with a view to assuring that all parts thereof will remain in proper relation and accuracy in the use of the sight will be assured. Further, the sighting means of my invention is particularly suitable for application to sight leaves of known type, hinged or pivoted on bases also of known type, and is so associated with the sight leaf that the latter may be folded downward onto the base in the usual manner. The advantage of that is obvious in that it permits of the application of my invention to the leaves of many sights now in common use without necessitating any material change in either the sight leaf or the associated base. Further objects and advantages of my invention will appear from the detail description.

In the drawing:

Figure 1 is a left side view of a sight base and a sight leaf of known type, with the sight means of my invention applied thereto, the base being partly broken away;

Figure 2 is a right side view of the sight means of my invention embodying the sight leaf of Figure 1;

Figure 3 is a top or front view of the sight means of Figure 2;

Figure 4 is a view, on an enlarged scale, of the sight means and the associated base, the latter being shown in section, of Figure 1 as seen from the rear when the sight leaf is in its upright position;

Figure 5 is an underneath view, on an enlarged scale, of the sight means including the sight leaf of Figure 1, with certain parts broken away and shown in section; and

Figure 6 is a sectional view taken substantially on line 6—6 of Figure 4.

I have illustrated my invention, by way of example, as applied to the sight base and leaf of a 1917 model Enfield rifle. The sight base 10 comprises lateral flanges 11 and 12 connected by a bridge element 13 to the top of which is suitably secured a rearwardly extending leaf spring 14 the rearward portion of which is slotted to provide two spaced fingers 15. A sight leaf 16 of elongated rectangular or oblong shape is pivoted at its rearward end to base 10, adjacent the rear thereof, by a pintle screw 17 inserted through one side of the base and threading into a boss 18 formed integrally with flange 12. The rearward end of leaf 16 is provided with two flat surfaces disposed at right angles to each other, with which the fingers 15 cooperate for holding leaf 16 in either its upright position or its lowered position, in a known manner. The base 10, leaf 16 and spring 14 are, as noted, of known construction and operation and need not be described in greater detail. It will be understood, however, that the sight means of my invention may be applied to a hinge leaf of different type than that illustrated associated with a sight base also of different type than that illustrated, within the broader concepts of my invention.

Sight leaf 16 is provided on its rearward face (when raised) with the usual scale for indicating elevation, as shown in Figure 4. In applying the sight means of my invention to leaf 16 I provide a carriage 20 comprising arms 21 and 22 extending forwardly from a cross member 23, the latter having a cubiform lug 24 extending rearward therefrom between arms 25 and 26 of leaf 16. Arm 21 is provided at its outer or rearward edge with a flange 27 which overlies arm 25 of leaf 16, and arm 22 is provided with a similar flange 28 overlying arm 26 of leaf 16, the inner faces of the flanges 27 and 28 being beveled inward toward the leaf, as shown, and each bearing a register mark 29 (Figure 4) for cooperation with the marks of the scale on leaf 16, in a known manner. A keeper 30, of approximately H shape (Figure 5) is suitably secured, as by screws 31, to the under or rearward face of lug 24. The parts are so proportioned that arms 21 and 22 fit snugly about arms 25 and 26 of the leaf 16, so as to permit movement of the carriage along the leaf while avoiding any objectionable looseness or play of the carriage. To guard against lateral movement of the carriage relative to the sight leaf, a short pin 32 is slidably mounted through one side of carriage 20. This pin bears at its inner end against the outer side of arm 26 of leaf 16 and is provided at its outer end with a reduced stud 33. A leaf spring 34 is suitably secured at one end, as by means of a screw 35, to arm 22 of carriage 20, adjacent the upper or forward end thereof, this spring being provided with an opening which receives

stud 33, the lower or rearward end portion of spring 34 pressing against the outer end of pin 32. That serves to urge the carriage 20 toward the right, as viewed in Figure 4, thus guarding against any objectionable displacement of the carriage transversely of the sight leaf. Carriage 20 is thus mounted on leaf 16 for relative sliding movement and adjustment lengthwise thereof.

The upper or forward ends of arms 21 and 22 are connected by a cross bar 37 having an upwardly or forwardly extending tongue 38 provided, at its upper or forward end, with a rearwardly extending relatively thick flange 39, shown more clearly in Figure 5. Flange 39 is centrally bored and threaded for reception of an adjusting screw 40 rotatably mounted through the forward or upper end cross bar 41 of sight leaf 16. An adjusting disc 42 is secured to the upper end of screw 40, conveniently by being formed integrally therewith, this disc having a hub element 43 which contacts the outer face of bar 41 cooperating therewith to prevent inward movement of screw 40. A stop nut 44 is threaded on screw 40 and contacts the inner face of bar 41, this stop nut 44 being secured in adjustment by a jam nut 45 also threaded on screw 40. In that manner screw 40 is confined against endwise movement in either direction and provides means for effecting desired adjustment of carriage 20 in either direction lengthwise of sight leaf 16.

Disc 42 is provided with a suitable number, as four, of apertures 46 extending therethrough parallel with the axis of screw 40, suitably spaced therefrom and arranged in a circle concentric therewith. The end portion of each aperture 46 at the face of disc 42 adjacent bar 41 is enlarged and rounded to provide a recess for reception of a detent in the form of a ball 47 mounted in a bore 48 in bar 41 and urged outward by a compression coil spring 49 confined between ball 47 and the lower end of bore 48. Two detents 47 are shown in Figure 5, disposed at opposite sides of screw 40 to avoid any tendency to cause tilting and binding thereof, though but one detent may be provided if desired. The pitch of the threads of screw 40 is such that turning thereof through an angle corresponding to the distance between two adjacent apertures 46 effects an adjustment of one-half a minute of the carriage 20, one complete rotation of the screw effecting an adjustment of two minutes of the carriage. The screw 40 and associated parts thus provide micrometer means for effecting precision adjustment of the carriage 20 for sighting in a rifle provided with the sight means of my invention. The disc 42 and the detents 47 provide click means for locking screw 40 in adjustment, thus locking the carriage in adjustment, such click means rendering possible accurate adjustment of the carriage to desired extent without necessity for consulting the scale on leaf 16, as will be understood, and for effecting slight adjustment of the carriage for which there are no corresponding marks on the scale. Lug 24 of cross member 23 is provided with a bore 50 suitably disposed and of proper diameter to accommodate the lower portion of adjusting screw 40 in the travel of carriage 20 toward the upper end of leaf 16, in the raised position of the latter.

Carriage 20 is further provided with two rearwardly extending arms 51 and 52 disposed above cross member 23 and parallel with the sides of leaf 16, arms 51 and 52 being spaced apart a distance substantially equal to the width of the sight leaf. A guide pin 53 is inserted through arm 52, with its right hand end portion, as viewed in Figure 4, fitting snugly in a bore 54 in arm 51. Pin 53 is provided, at its other end, with an enlarged threaded element 55 which is screwed into arm 52 for securing pin 53 in position. Element 55 projects outward beyond the outer face of arm 52, for a purpose which will be described presently.

Pin 53 passes snugly through the rearward end portion of a sight block 56 disposed between arms 51 and 52 and of materially less width than the distance between the two arms. An adjusting screw 57 is threaded through the forward end portion of block 56, this screw being provided at its right hand end with a reduced stud 58 which fits snugly in a corresponding bore in arm 51. Screw 57 is provided, at its other end, with a reduced shank 60 which passes through a bore 61 in arm 52, of a diameter equal to the body of screw 57 to permit insertion thereof through arm 52. An adjusting disc 62 is secured to the outer end of shank 60, conveniently by being formed integrally therewith, this disc being provided with a hub element 63 which bears against the outer face of arm 52 for limiting inward movement of screw 57. Disc 62 is further provided with a central outwardly extending stud 64 which fits through a corresponding opening in a leaf spring 65 through the rearward end of which extends element 55 of pin 53. A split spring washer 66 is disposed between the inner face of spring 65 and the outer face of arm 52, the rearward end of spring 65 being clamped between washer 66 and a nut 67 screwed upon element 55. Spring 65 extends across the outer face of disc 62 and is provided, adjacent its forward end, with a detent element 68 pressed therein, disposed for engagement into any one, selectively, of a plurality of detent receiving recesses 69 formed in the outer face of disc 62.

An aperture sight, comprising a cupped disc 70 having a reduced threaded neck 71 provided with an axial bore or aperture 72, is mounted on block 56 centrally thereof. Neck 71 screws into block 56 and the sight may be removed and replaced by a similar sight having an aperture of different diameter, in order to provide a sight having an aperture of desired diameter, as is known. The block 56 is slidably mounted on pin 53 for movement transversely of carriage 20 and of leaf 16, screw 57 serving to support the forward end of block 56 and providing micrometer means for effecting adjustment thereof for desired windage. The leaf spring 65 serves to urge screw 57 toward the right, as viewed in Figure 4, cooperating with disc 62 and arm 52 for confining the screw against endwise movement in either direction and eliminating any looseness or play such as would affect accuracy of the sight means. Disc 62 is shown as being provided with six detent receiving recesses 69, the distance between two adjacent recesses corresponding to a one-half minute adjustment of block 56, one complete revolution of disc 62 being equal to a three minute adjustment of the sight block. The spring 65 and detent element 68 thereof provide, together with disc 62 and the recesses 69 thereof, click means for adjusting the sight for windage. Block 56 is provided, at its forward face, with a scale 74, cross member 23 of frame 20 being provided, at its forward face, with a register mark 75 for cooperation with scale 74. The travel of block 56 is sufficient to provide fifteen minutes windage adjustment in either direction, which is ample

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for all ordinary purposes, though provision for greater adjustment of the sight block may be made if desired, as will be understood.

It will be seen that I have provided a hinged sight leaf with micrometer means for adjusting the sight both for elevation and for windage and for locking it in adjustment, the micrometer means in each instance including click means and being so disposed as to clear the base 10 when leaf 16 is folded downward into its lowered position, indicated in dotted lines in Figure 1. It is thus possible to fold the hinged leaf 16 downward into base 10 in any adjusted position of the sight, which may remain in its set position available for use when leaf 16 is turned into its upright position. I thus avoid any necessity for racking down the sight or changing its position in order to permit lowering thereof into a position of non-use, the advantages of which with respect to saving in time and avoiding necessity of resetting of the sight will be obvious.

As above indicated, and as will be understood by those skilled in the art, changes in construction and arrangement of parts of my invention may be resorted to without departing from the field and scope thereof, and I intend to include all such variations, as fall within the scope of the appended claims, in this application in which the preferred form only of my invention is disclosed.

I claim:

1. In gun sight means of the character described, a sight leaf, a carriage slidably mounted on said leaf for adjustment lengthwise thereof, means for adjusting said carriage, the latter comprising two rearwardly extending arms parallel with the sides of said leaf, a guide pin secured in said arms extending therebetween and projecting outward beyond one thereof, a sight block slidable on said pin, an adjusting screw parallel with said pin extending between and slidably mounted in said arms, said screw having threaded engagement with said block, an adjusting disc secured on said screw adjacent the outer side of said one arm of said carriage and cooperating therewith for limiting inward movement of said screw, said disc having therein detent receiving recesses, a leaf spring secured on the projecting portion of said pin extending over the outer face of said disc and having a detent element disposed to engage in said recesses, said spring urging said screw inward, and a sight carried by said block.

2. In gun sight means of the character described, a sight leaf, a carriage slidably mounted on said leaf for adjustment lengthwise thereof, means for adjusting said carriage, the latter comprising two rearwardly extending arms parallel with the sides of said leaf, a guide pin secured in said arms extending therebetween and projecting outward beyond one thereof, a sight block slidable on said pin, an adjusting screw parallel with said pin extending between and slidably mounted in said arms, said screw having threaded engagement with said block, an adjusting disc secured on said screw adjacent the outer side of said one arm of said carriage and cooperating therewith for limiting inward movement of said screw, said disc having therein detent receiving recesses and being provided with a central outwardly extending stud, a leaf spring secured on the projecting portion of said pin extending over the outer face of said disc and having an opening receiving said stud and a detent element disposed to engage in said recesses, said spring urging said screw inward, and a sight carried by said block.

GEORGE F. PALDANI.