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April 16, 1935. F. K. HOWARD 1,997,584

REAR SIGHT FOR GUNS

Filed Aug. 22, 1933 2 Sheets-Sheet 1

Fig. 1.

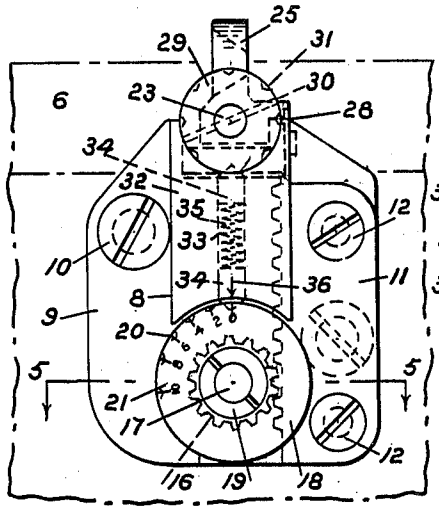


Fig. 2.

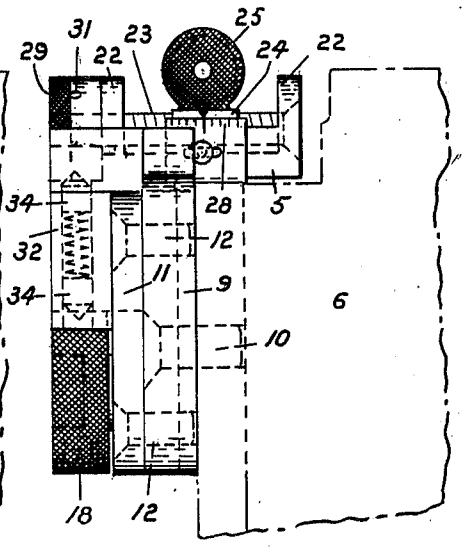


Fig. 4.

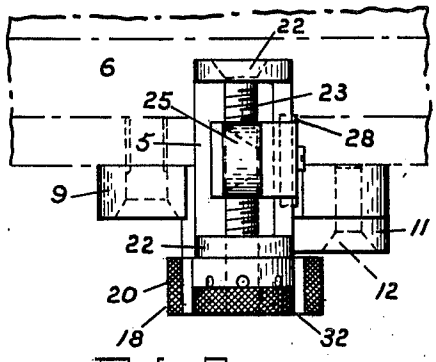


Fig. 5.

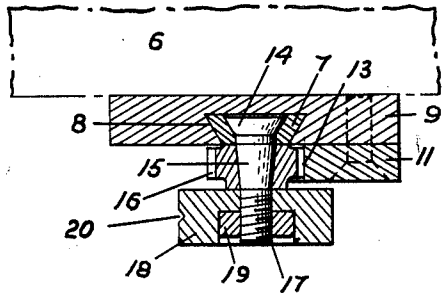
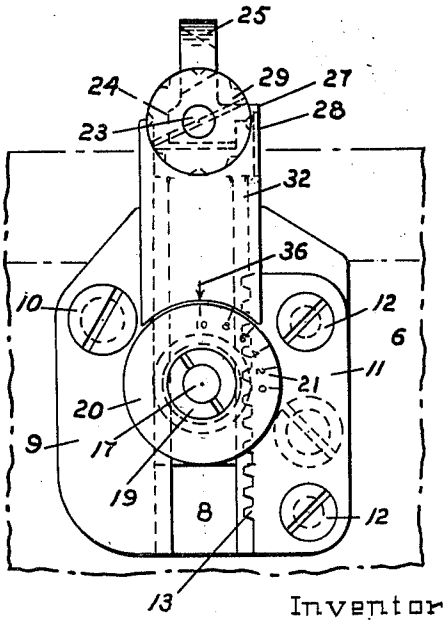


Fig. 3.



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Fig. 6.

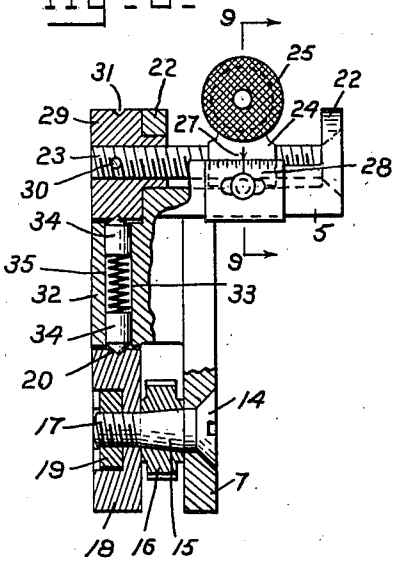


Fig. 7.

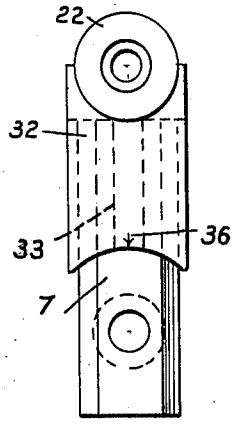


Fig. 8.

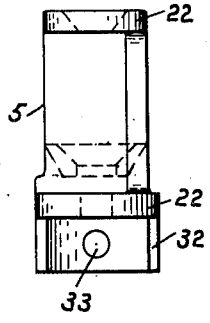


Fig. 9.

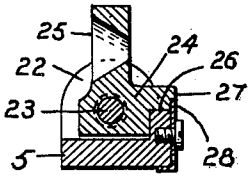


Fig. 10.

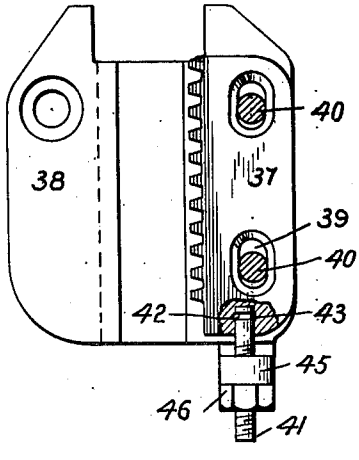
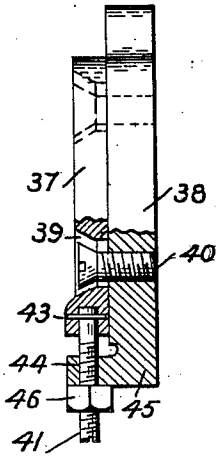


Fig. 11.



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33. GEOMETRICAL INSTRUMENTS.

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UNITED STATES PATENT OFFICE

1,997,584

REAR SIGHT FOR GUNS

Forrest K. Howard, East Falls Church, Va.

Application August 22, 1933, Serial No. 686,261

8 Claims. (Cl. 33—56)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

This invention relates to a rear sight for guns.

The purpose of the invention is to provide a strong and efficient rear sight which comprises only a few simple parts.

A further object is to provide a free elevating mechanism on the movable sight base so that the sight base may move upon the application of pressure.

The improved sight is also characterized by a novel arrangement of its elevating and traversing thumb wheels whereby click latches for the wheels may be actuated by a single spring.

To these and other ends, the invention consists in the construction, arrangement and combination of elements described hereinafter and pointed out in the claims forming a part of this specification.

A practical embodiment of the invention is illustrated in the accompanying drawings, wherein:

Fig. 1 is a view in side elevation of the improved rear sight showing the sight base in the position of zero elevation.

Fig. 2 is a view in rear elevation of Fig. 1.

Fig. 3 is a view similar to Fig. 1 showing the sight base in an elevated position.

Fig. 4 is a plan view of Fig. 1.

Fig. 5 is a sectional view on the line 5—5 of Fig. 1.

Fig. 6 is a view in rear elevation and partly in section of the sight base with the elevating and traversing mechanism in place.

Figs. 7 and 8 are views respectively in side elevation and plan of the sight base.

Fig. 9 is a sectional view on the line 9—9 of Fig. 6.

Figs. 10 and 11 are views in side and end elevation, parts being in section, and showing a modification having a provision for adjusting the elevating rack.

The sight comprises a base 5 adapted to overlie the receiver of a gun 6 which in the present instance is a machine gun. A leg 7 on the base is mounted for vertical sliding movement in a groove 8 formed in the outer side of a bracket 9 which is secured to the gun by means of screws 10. A rack 11 is secured on the outer side of the bracket by means of screws 12 and has its teeth 13 disposed adjacent one side of the groove 8 (Fig. 5).

A pin 14 inserted through the leg 7 from the inner side thereof has a tapered portion 15 on which is mounted a pinion 16 adapted to mesh with the teeth 13 of the rack 11. The pin includes a threaded portion 17 for receiving a thumb wheel 18 which retains the pinion and is in turn secured by a nut 19. The thumb wheel is provided peripherally with a series of depressions 20 spaced in accordance with an elevation range scale 21 inscribed on the outer side of the thumb wheel.

The base 5 is provided with space apertured ears 22—22 journaling a screw 23 on which is mounted a nut 24 carrying a peep sight 25 (Fig. 9). The nut is formed with flat surfaces 26 whereby it is adapted to engage the sight base 5 and be constrained against rotation. A reference mark 27 on the nut is readable against a windage scale 28 on the base. A thumb wheel 29 held on the outer end of the screw 23 by a pin 30, serves for rotating the screw and maintaining it in place. The thumb wheel is provided peripherally with a series of equally spaced depressions 31.

A housing 32 integral with the base 5 and the leg 7 has an aperture 33 extending between the thumb wheels and in the plane of the pin 14 and screw 23. A pair of oppositely disposed plungers 34—34 are positioned in the aperture 33 and are normally extruded into engagement with the thumb wheels by a single spring 35 interposed between the plungers. The plungers are adapted to enter the depressions in the thumb wheels and serve as click latches. The housing 32 is inscribed with a reference mark 36 against which the elevation range scale 21 is readable. When the sight base 5 is in its lowermost position the reference mark is in line with the 0 of the scale (Fig. 1).

In the modification shown in Figs. 10 and 11, the rack 37 is adjustably secured to the bracket 38 and to this end it is provided with slots 39 for the securing screws 40. A screw 41 rotatably connected to the rack as by the groove 42 and pin 43 extends through a threaded aperture 44 in a foot 45 on the bracket. A lock nut 46 is placed on the lower end of the screw. Upon rotating the screw 41 the rack and the sight base will be moved vertically. In this manner the sight may be adjusted with respect to the bore of the gun.

In operation, lateral corrections to the line of sight are made by actuating the thumb wheel 29 to move the sight 25 laterally of the gun. Elevation is applied by actuating the thumb wheel 18 carried by the leg of the sight base. When the sight base is in the elevated position as shown in Fig. 3 it may be quickly lowered by merely exert-

ing pressure on its upper part. Such pressure is frequently applied accidentally and the ability of the sight base to yield will prevent it from being damaged. The free elevating connection also permits the sight base to be readily removed from its support.

I claim:

1. A rear sight including a support having rack teeth, a sight base having a leg slidably mounted in the support, a windage screw carried by the sight base, a sighting element on the screw, a thumb wheel on one end of the screw and having in its periphery a series of equally spaced depressions, a pin rotatably carried by the leg and having a threaded and a tapered portion, a pinion on the tapered portion of the pin and meshing with the rack teeth, a thumb wheel on the threaded portion of the pin and having a range scale and a series of depressions in its periphery, said depressions spaced in accordance with the range scale, a housing on the sight base having an aperture, a pair of oppositely disposed plungers in the aperture respectively engaging the depressions in the thumb wheels, a spring between the plungers urging them apart, and a reference mark on the housing against which the range scale is readable.

2. A rear sight including a support having rack teeth, a sight base having a leg slidably mounted in the support, a windage screw carried by the sight base, a sighting element on the screw, a thumb wheel on one end of the screw and having in its periphery a series of equally spaced depressions, a pin rotatably carried by the leg, a pinion on the pin and meshing with the rack teeth, a thumb wheel on the pin and having a range scale and a series of depressions in its periphery, said depressions spaced in accordance with the range scale, a housing on the sight base having an aperture, a pair of oppositely disposed plungers in the aperture respectively engaging the depressions in the thumb wheels, a spring between the plungers urging them apart, and a reference mark on the housing against which the range scale is readable.

3. A rear sight including a support having rack teeth, a sight base slidably mounted in the support, a windage screw carried by the sight base, a sighting element on the screw, a thumb wheel on one end of the screw, a pin rotatably mounted in the sight base, a pinion on the pin meshing with the rack teeth, a thumb wheel on the pin, a housing on the sight base having an aperture, a pair of oppositely disposed plungers in the aperture respectively engaging the thumb wheels, and a spring between the plungers urging them apart.

4. In a rear sight, a movably mounted sight base, a pair of thumb wheels carried by the base, a pair of plungers carried by the base and each engageable with one of the thumb wheels and resilient means common to both plungers and urging them into engagement with the thumb wheels.

5. A rear sight including a support having rack teeth, a sight base having a leg slidably mounted in the support, a windage screw carried by the sight base, a sighting element on the screw, a thumb wheel on one end of the screw and having depressions in its periphery, a pin rotatably carried by the leg parallel to the windage screw and having a tapered and a threaded portion, a pinion on the tapered portion of the pin and meshing with the rack teeth, a thumb wheel on the threaded portion of the pin and having a range scale and a series of depressions in its periphery, said depressions spaced in accordance with the range scale, means for engaging the depressions in the thumb wheels, and a reference mark on the sight base against which the range scale is readable.

6. A rear sight including a support having rack teeth, a sight base having a leg slidably mounted in the support, a windage screw carried by the sight base, a sighting element on the screw, a thumb wheel on one end of the screw, a pin rotatably carried by the leg and having a tapered and a threaded portion, a pinion on the tapered portion of the pin and meshing with the rack teeth, a thumb wheel on the threaded portion of the pin and having a range scale, and a reference mark on the sight base against which the range scale is readable.

7. A rear sight including a support having rack teeth, a sight base having a leg slidably mounted in the support, a windage screw carried by the sight base, a sighting element on the screw, a thumb wheel on one end of the screw, a pin rotatably carried by the leg, a pinion on the pin and meshing with the rack teeth, a thumb wheel on the pin and having a range scale, and a reference mark on the sight base against which the range scale is readable.

8. A rear sight including a fixed support having a rack and a slot open at one end, a sight base insertable in and removable through the open end of the slot in the support and slidable therein, a pin rotatably carried by the sight base, and a pinion on the pin meshing with the rack of the support, said slot being unobstructed so that the said base may be freely removed from and inserted into said slot at all times.

FORREST K. HOWARD.