

March 29, 1938.

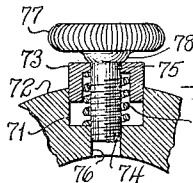
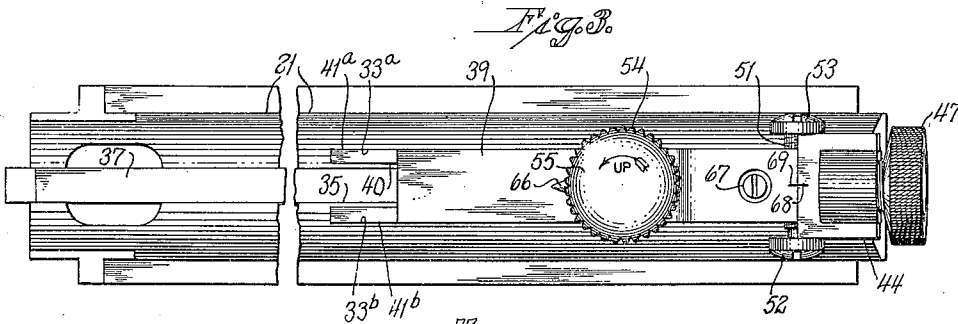
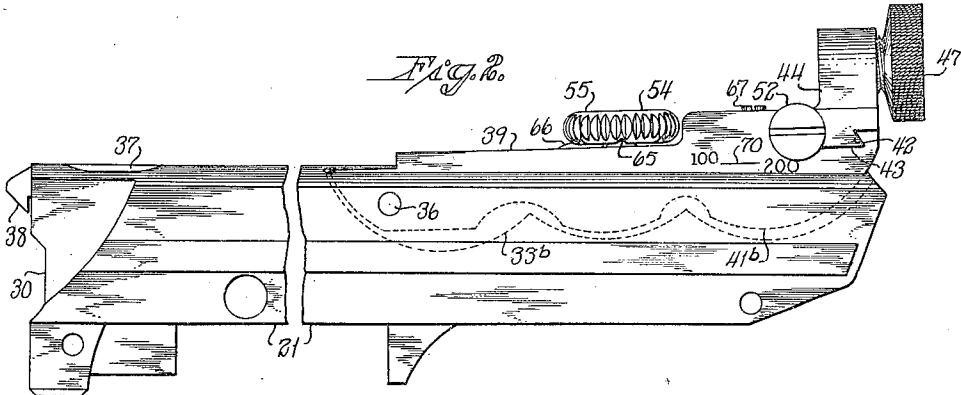
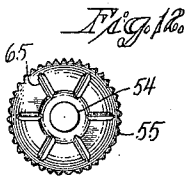
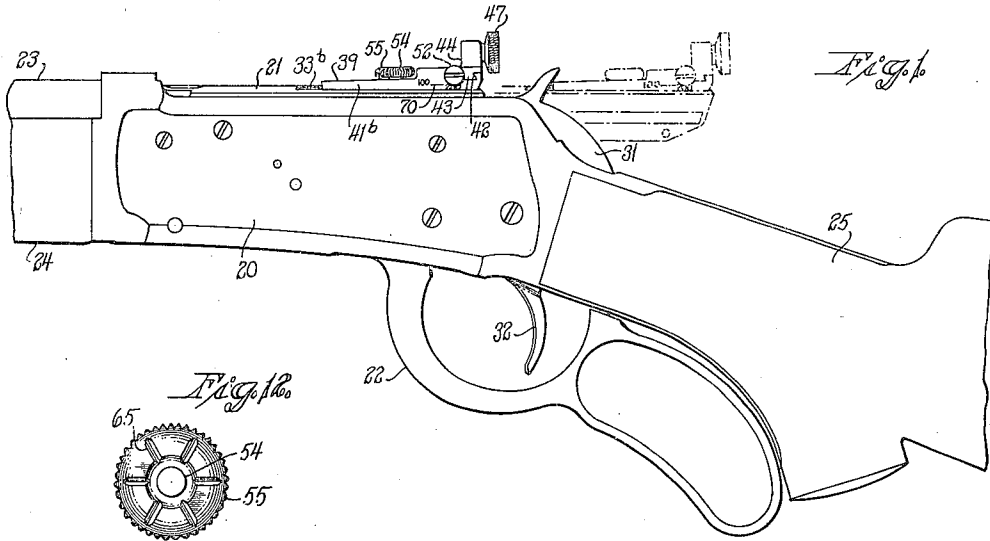
F. F. BURTON

2,112,268

ADJUSTABLE REAR SIGHT FOR FIREARMS

Filed Sept. 16, 1935

2 Sheets-Sheet 1



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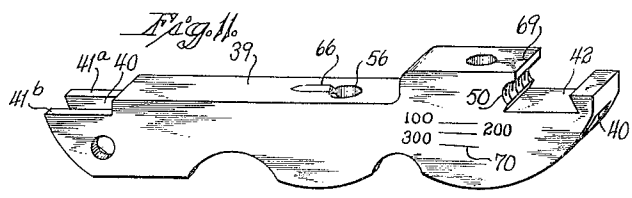
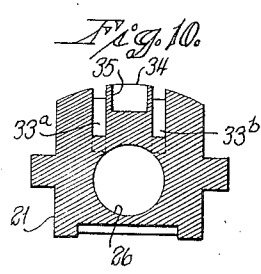
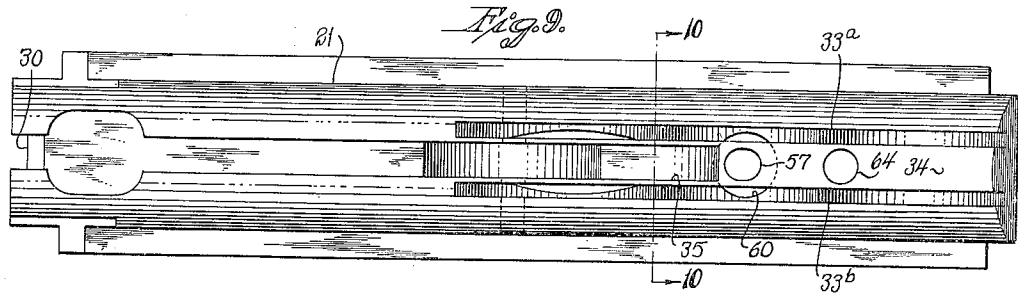
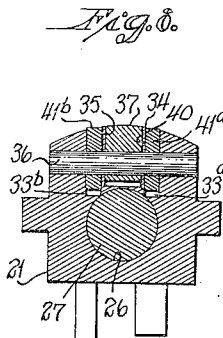
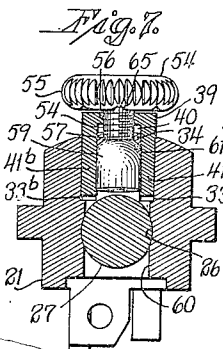
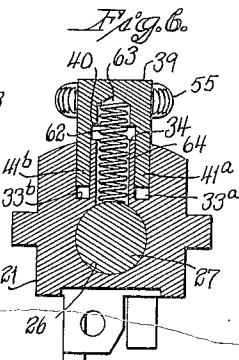
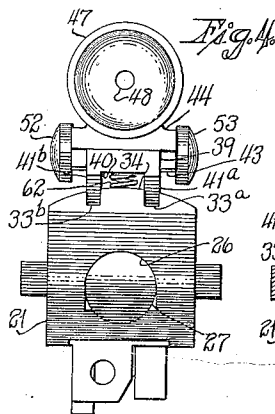
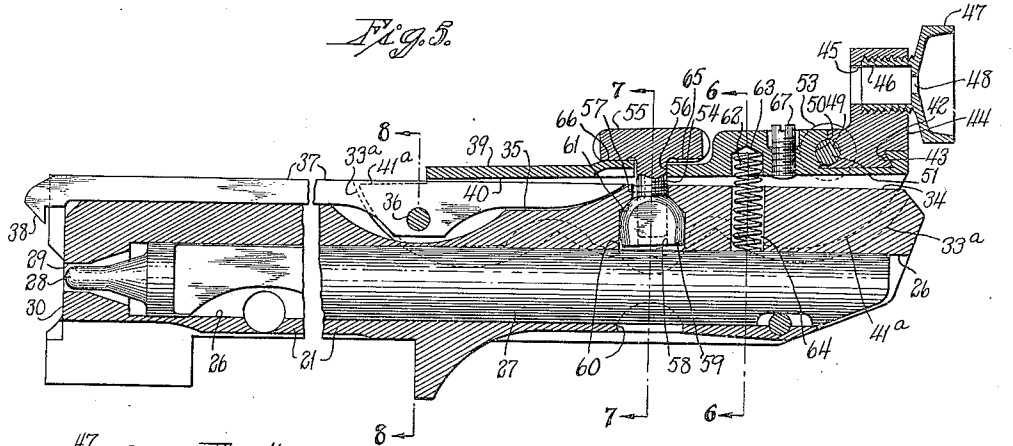
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2,112,268

ADJUSTABLE REAR SIGHT FOR FIREARMS

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2 Sheets—Sheet 2



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ADJUSTABLE REAR-SIGHT FOR FIREARMS

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Application September 16, 1935, Serial No. 40,702

8 Claims. (Cl. 33—58)

This invention relates to an improvement in sights, and particularly to an improvement in adjustable rear-sights for firearms.

One of the objects of the present invention is to provide a superior adjustable rear-sight for firearms characterized by compactness and low cost for manufacture.

Another object is to provide a superior sight of the class referred to which, despite its being of rugged and durable dimensions, nevertheless, when assembled with the firearm, is of minimum apparent size.

A further object is to provide a superior adjustable rear-sight for firearms which, while readily adjustable to various elevations, nevertheless is stabilized against undue lateral deflection.

A still further object is to provide a superior breech-bolt assembly which includes an adjustable rear-sight and an extractor so organized as to afford maximum compactness and non-interference between said extractor and sight.

With the above and other objects in view, as will appear to those skilled in the art from the following, considered in conjunction with the accompanying drawings and appended claims, the present invention includes all features disclosed therein which are novel over the prior art.

In the accompanying drawings:

Fig. 1 is a broken view in side elevation of a lever-action firearm equipped with an adjustable rear-sight in accordance with the present invention;

Fig. 2 is a view in side elevation of the breech-bolt assembly of the firearm;

Fig. 3 is a top or plan view thereof;

Fig. 4 is a view in rear end elevation of the breech-bolt assembly;

Fig. 5 is a vertical, central, longitudinal, sectional view through the breech-bolt assembly;

Fig. 6 is a transverse sectional view taken on the line 6—6 of Fig. 5;

Fig. 7 is a similar view taken on the line 7—7 of Fig. 5;

Fig. 8 is a similar view taken on the line 8—8 of Fig. 5;

Fig. 9 is a top or plan view of the breech-bolt as stripped;

Fig. 10 is a transverse sectional view taken on the line 10—10 of Fig. 9;

Fig. 11 is a perspective view of the sight-body;

Fig. 12 is an under-side view of the elevating-screw;

Fig. 13 is a perspective view of the nut of the elevating-screw; and

Fig. 14 is a broken, transverse, sectional view illustrating a modified construction.

The particular firearm herein chosen for illustration in connection with the present invention is of the lever-action type, and includes a receiver 20 mounting a reciprocating breech-bolt 21 and a hand-lever 22 by means of which the said breech-bolt is operated in a manner familiar in firearms of the type referred to. Forwardly extending from the receiver 20 is a barrel 23 having attached to its under side a forestock 24. The rear end of the receiver is attached in any convenient manner to the forward end of a buttstock 25.

As illustrated particularly well in Figs. 4 to 8 inclusive, the breech-bolt 21 is provided with a central longitudinal bore 26 receiving a reciprocating firing-pin 27 having at its forward end a firing-point 28 projectable through an aperture 29 in the front end 30 of the said bolt to effect the firing of a cartridge when struck by a hammer 31 which is controlled by a trigger 32 (Fig. 1).

In its upper surface the rear portion of the breech-bolt 21 is formed with two parallel longitudinally-extending and upwardly-opening grooves or recesses 33^a and 33^b respectively located on opposite sides of the longitudinal center of the breech-bolt and having interposed between them an upstanding longitudinal guide-rib 34. In the forward portion of the said guide-rib is located the rear portion of a longitudinal extractor-groove 35, which extends to and intersects the front end 30 of the breech-bolt, as especially well shown in Fig. 9. Mounted in the extractor-groove 35, by means of a pin 36 extending transversely of the breech-bolt, is a flexible extractor 37 having at its forward end an extractor-hook 38 adapted in the usual manner of firearms to engage the rim of a cartridge for extracting the same from a cartridge-chamber in the barrel 23.

Pivotaly secured to the breech-bolt 21 by means of the transverse pin 36 before referred to, is a sight-body 39 of substantially U-shaped form and having in its under face a longitudinal groove 40 flanked on its respective opposite sides by depending side-flanges 41^a and 41^b, respectively adapted to enter the longitudinally-extending upwardly-opening grooves 33^a and 33^b in the upper surface of the breech-bolt 21. The sight-body may, therefore, be said to "straddle," so to speak, the longitudinal guide-rib 34 of the breech-bolt, which latter, in the construction of Figs. 1 to 13 inclusive, constitutes a mounting-member for the sight-structure, though in the broader as-

pects of the present invention, a mounting-member other than the breech-bolt may be utilized.

The rear portion of the sight-body 39 is formed with an upwardly-opening, transverse, dovetailed guideway 42 receiving the corresponding dovetailed rib 43 extending transversely across the under face of a windage-slide 44. The said windage-slide is formed with a large sighting-aperture 45 extending substantially parallel with the axis of the firearm and having its rear portion threaded for the reception, if desired, of the tubular stem 46 of a cup-shaped peep-sight disk 47 having a small sight-aperture 48 therein through which the marksman may sight in the usual manner.

For the purpose of adjusting the windage-slide 44, and hence the sighting-feature carried thereby, laterally with respect to the sight-body 39, the said windage-slide is formed in the forward face of its base portion with a transverse unthreaded groove 49 of substantially-semicircular form in cross-section and complementing a similar but threaded groove 50 formed in the forward wall of the dovetailed guideway 42 in the sight-body 39. The said grooves 49 and 50 complement each other in forming a cylindrical passage for the reception of an externally-threaded windage-adjusting screw 51 having at one end an integral kerfed head 52, and at its opposite end a separately-formed kerfed head 53 rigidly staked thereto.

The inner faces of the heads 52 and 53 of the windage-adjusting screw 51 respectively snugly engage with the opposite sides of the windage-slide 44. By turning the said screw 51 by means of either one of its heads 52 or 53, the said screw will thread itself laterally through the threaded groove 50 in the sight-body 39 and correspondingly laterally shift the windage-slide 44 and the peep-sight disk 48 carried thereby.

For the purpose of adjusting the swinging movement of the sight-body 39 in a vertical plane to adjust the sight-aperture 48 for different ranges, an elevation-adjusting screw 54 is employed, having a serrated head 55 overlying the adjacent portion of the sight-body 39 in convenient position for being manipulated by the fingers. The said elevation-adjusting screw 54 extends freely downwardly through a passage 56 in the upper wall of the sight-body 39 about midway the length thereof and freely through an oval vertical passage 57 in the guide-rib 34 of the breech-bolt. The lower portion of the screw 54 enters a threaded bore 58 formed in a nut 59 having a spherically-contoured upper surface and oppositely-located flat side-walls, which latter closely engage, with freedom for relative movement, the inner faces of the complementary side-flanges 41^a and 41^b of the sight-body 39. By the engagement just referred to, the said nut 59 is prevented from turning in a horizontal plane, but is free for rocking movement in a vertical plane.

To accommodate the nut 59 of the elevation-adjusting screw 54, the breech-bolt 21, including a portion of its guide-rib 34, is formed with a vertical bore or pocket 60 located in substantial alignment with the oval passage 57, through which the elevation-adjusting screw 54 passes, though of larger diameter than the same and providing a downwardly-facing conical seat 61 against which the spherically-contoured upper portion of the nut 59 engages. The said recess 60 is drilled from the under face of the breech-bolt and is intersected by the central longitudinal

bore 26 therein in which the firing-pin 27 reciprocates.

The screw 54 is properly termed an "elevation-adjusting screw," inasmuch as it regulates the elevation of the rear end of the sight-body 39 and hence of the sighting-feature carried thereby. The said screw serves to move the rear end of the sight-body downwardly against the lifting effect of a spring 62, and regulates the upward movement thereof under the urge of the said spring. The spring 62, just referred to, is of the helical type and has its upper end projected into a downwardly-opening spring-pocket 63 formed in the under side of the central portion of the sight-body 39 and has its lower portion located in a vertical bore 64 formed in the breech-bolt 21 and resting upon the upper surface of the firing-pin 27. From the foregoing, it will be seen that the spring 62 exerts a constant effort to swing the rear end of the sight-body 39 and the parts carried thereby upwardly, which movement is adjustably limited by the so-called "elevation-adjusting screw" 54.

For the purpose of preventing the accidental turning of the elevation-adjusting screw 54 and to indicate palpably the amount of movement thereof, the under side of the head 55 is formed with a plurality of radial detent-grooves or pockets 65 (Fig. 12) which are adapted to sequentially engage with a detent-rib or projection 66 (Fig. 11) upstanding from the upper face of the sight-body 39 adjacent the passage 56 therein. The tension of the spring 62 in urging the rear end of the sight-body 39 upwardly will serve to maintain the detent-rib or projection 66 in engagement with a given one of the radial grooves 65 in the under side of the head 55 of the elevation-adjusting screw 54, though the detent effect of the detent-rib 66 and a given one of the detent-grooves 65 may be overcome by intentionally rotating the head 55 of the elevation-adjusting screw 54 to effect the vertical adjustment of the peep-sight disk 47.

To limit the downward swinging movement of the sight-body 39, when it reaches a setting at which the aperture 48 in the peep-sight disk 47 is in substantial parallelism with the axis of the barrel 23 for point-blank ranges, a stop-screw 67 is threaded downwardly through the upper wall of the sight-body 39, just to the rear of the spring-pocket 63 therein. The said stop-screw 67 is preferably tightly threaded into the sight-body 39, as described, so that it will not be accidentally turned, and is adapted to have its lower end engage with the upper face of the guide-rib 34 of the breech-bolt 21 at a point just to the rear of the vertical bore 64 therein.

As the inclination of the sight-body 39 changes, as a result of its adjustment for different ranges, the under side of the head 55 of the elevation-adjusting screw 54 will be enabled to remain in parallelism with the upper surface of the said sight-body by the rocking of the nut 59 against its seat 61. Thus, the changing of the inclination of the sight-body 39 does not alter the angle of seating of the detent-rib 66 in any given one of the detent-grooves 65.

For the purpose of enabling the windage-slide 44 to be set on dead-center, it may be provided, as shown in Fig. 3, with a guide-mark 68 adapted to register with one or more similar guide-marks 69 formed upon the upper surface of the sight-body 39 adjacent the forward wall of the dovetail-guideway 42 therein. For the purpose of gauging the elevation of the rear end of the sight-

body 39 and the peep-sight disk 47, the side wall of the said sight-body may be provided with a series of index-lines 70 (Figs. 2 and 11) adapted to be sequentially registered with the adjacent surface of the breech-bolt 21.

By means of a construction like that above described, the elevation of the peep-sight disk 47 or such other suitable sight as it may be desired to employ may be readily changed to accommodate the arm for firing at different ranges, but it is to be noted that by virtue of the grooving of the breech-bolt 21 or other suitable mounting-member of the firearm and the "nesting", so to speak, of the swinging sight-body therein, the said sight-body, and hence the sight carried thereby, is prevented from undue lateral deflection even in the event that the sight or sight-body should receive a rather severe lateral blow. Thus, the pivot-pin 36 upon which the sight-body swings is to a large measure relieved of the strains of maintaining the sight-body in parallelism with the axis of the firearm.

Furthermore, by means of the construction shown, the sight-body may be made of relatively large dimensions, to thus provide the desired ruggedness without, however, causing it to appear unduly bulky when installed upon the arm. In other words, the construction and arrangement provided serves in effect to reduce the apparent size of the sight-body without requiring that the same shall be actually reduced in dimensions to such a degree as would materially weaken the same.

Attention is also called to the fact that by causing the sight-body to reach over the extractor, it is not required that either the said extractor or the said sight-body shall be unduly shortened.

If desired and as shown in Fig. 14, the member to which the sight-body is pivoted may be formed with but a single recess or groove. In the construction shown, a groove or recess 71 is formed in the upper surface of a frame or receiver 72, which latter constitutes, like the breech-bolt 21 previously referred to, a mounting-member for the rear-sight. In the construction of Fig. 14, a sight-body 73 of rectangular form in cross-section fits within the groove 71 in the receiver 72 and its vertical movement is controlled by means of a vertical elevation-adjusting screw 74 passing downwardly through a vertical passage 75 in the sight-body 73 and into a threaded bore 76 in the receiver 72. The elevation-adjusting screw 74 is provided at its upper end with a serrated operating-head 77 having a slightly-rounded boss 78 on its under face for engagement with the upper surface of the sight-body 73. If desired, a helical spring 79 may be placed around the screw 74 to exert a constant effort to raise the sight-body 73.

The invention may be carried out in other specific ways than those herein set forth without departing from the spirit and essential characteristics of the invention, and the present embodiments are, therefore, to be considered in all respects as illustrative and not restrictive, and all changes coming within the meaning and equivalency range of the appended claims are intended to be embraced therein.

I claim:

1. In an adjustable rear-sight for firearms, the combination with a mounting-member forming a feature of a firearm and having two substantially-parallel upwardly-opening longitudinal recesses therein, each of which is flanked by a side-wall formed integral with the said mounting-

member and an upstanding rib extending substantially parallel with and located laterally intermediate of the said recesses; of a sight-body of substantially U-shaped form in cross-section and pivoted directly to the said mounting-member for vertical swinging movement in the recesses in the same and straddling the rib thereof; and a sighting-member carried by the said sight-body at a point remote from the point at which the sight-body is pivoted to the said mounting-member.

2. In an adjustable rear-sight for firearms, the combination with a mounting-member forming a feature of a firearm and having two spaced-apart upwardly-opening recesses therein; of a sight-body pivoted for vertical swinging movement to the said mounting-member and having portions extending into both of the said recesses therein; adjusting-means for vertically adjusting the said sight-body and including a portion passing through the said sight-body at a point laterally intermediate the portions thereof which extend into the two recesses in the said mounting-member; and a sighting-member carried by the said sight-body.

3. In an adjustable rear-sight for firearms, the combination with a mounting-member forming a feature of a firearm and having two spaced-apart upwardly-opening recesses therein; of a sight-body pivoted for vertical swinging movement to the said mounting-member and having portions extending into both of the said recesses therein; a spring located laterally intermediate the portions of the sight-body which extend into the upwardly-opening recesses in the said mounting-member and urging the latter vertically in one direction; adjusting-means serving to move the said sight-body in opposition to the said spring; and a sighting-member carried by the said sight-body.

4. In an adjustable rear-sight for firearms, the combination with a mounting-member forming a feature of the firearm and having an upstanding projection and two upwardly-opening recesses respectively located on the opposite sides of the said projection; of a sight-body pivoted for vertical swinging movement to the said mounting-member and overlying the projection thereof and having portions extending into both of the said recesses therein; a spring located in the projection of the said sight-body and exerting a constant effort to swing the same upwardly; adjusting-means for vertically adjusting the said sight-body and including a portion passing through the said sight-body at a point laterally intermediate the portions thereof which extend into the two recesses in the said mounting-member; and a sighting-member carried by the said sight-body.

5. In an adjustable rear-sight for firearms, the combination with a mounting-member forming a feature of the firearm and having an upstanding longitudinally-extending rib and an upwardly-opening groove on each of the respective opposite sides of the said rib; of a sight-body of substantially U-shaped form in cross-section pivoted to said mounting-member for vertical swinging movement and having spaced-apart side-flanges extending downwardly into the said longitudinal grooves in the said mounting-member; spring-means seated in the rib of the said body-member and exerting a constant effort to swing the said sight-body upwardly; an adjusting-screw passing through the said sight-body intermediate the side-flanges thereof and operatively connected with the said mounting-member and serving to

adjust the said sight-body in opposition to the said spring; and a sighting-member carried by the said sight-body.

5 6. In an adjustable rear-sight for firearms, the
combination with a mounting-member forming
a feature of the firearm and having an upwardly-
opening longitudinal recess therein; of a sight-
body pivoted to the said mounting-member and
10 swinging in a vertical plane in the upwardly-
opening longitudinal recess therein and having
an upwardly-offsetting detent-projection; an ad-
justing-screw for the said sight-body having a
head formed in its under side with a plurality of
15 detent-recesses adapted to sequentially receive
the detent-projection of the said sight-body to
yieldingly restrain the said adjusting-screw
against rotation; spring-means serving to yield-
ingly maintain the detent-projection of the said
20 sight-body in engagement with one of the detent-
recesses in the under side of the said adjusting-
screw; and a sighting-member carried by the
said body at a point remote from the point at
which the sight-body is pivoted to the said mount-
ing-member.

25 7. In an adjustable rear-sight for firearms, the

combination with a mounting-member forming a
feature of a firearm; of a sight-body pivoted to
the said mounting-member; a nut-like member
carried by the said mounting-member with capaci-
5 ty for oscillating movement with respect thereto
in a substantially-vertical plane; and an eleva-
tion-adjusting screw extending through the said
sight-body and having threaded engagement with
the said nut-like member of the mounting-mem-
ber and oscillatable therewith in a substantially-
10 vertical plane.

8. In an adjustable rear-sight for firearms, the
combination with a breech-bolt having an up-
wardly-opening longitudinal recess therein; of a
pivot-member extending across the longitudinal
15 recess in the said breech-bolt; a sight-body hav-
ing a longitudinal recess in its under-face and
mounted in the longitudinal recess in the said
body-member, and pivoted to said pivot-member
extending there-across; and an extractor extend-
20 ing into the recess in the under-side of the said
sight-body and pivotally mounted upon the said
pivot-member upon which the said sight-body is
mounted.

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