

- [54] **REPEATING PISTOL**
- [76] Inventors: **Jose Maria Uria**, 13 rue de Santiago;  
**Antoine Georges Uria**, 6 rue delattre  
de Tassigny, both of  
Hendaye-Basses-Pyrenees, France
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*Primary Examiner*—Stephen C. Bentley  
*Attorney*—Waters, Roditi, Schwartz and Nissen

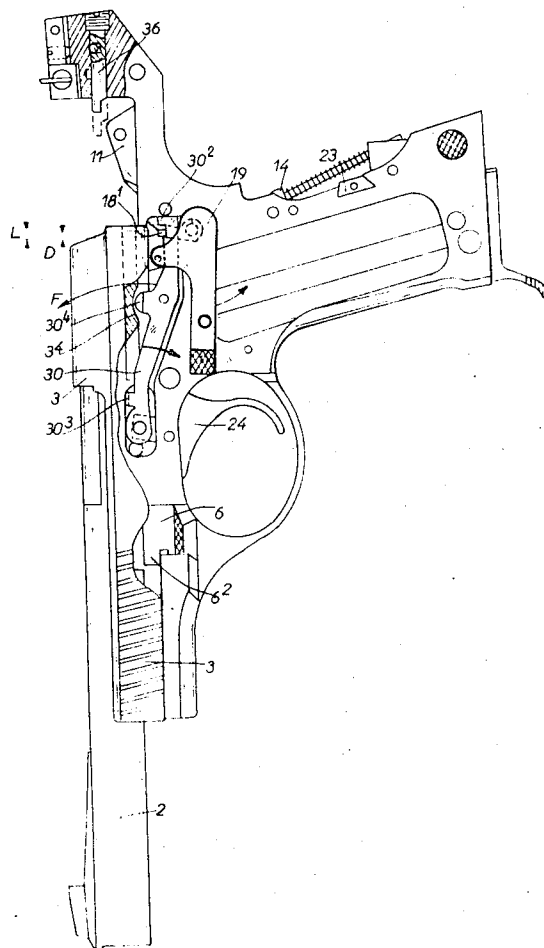
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- [58] **Field of Search** ..... 42/69 B, 69 A;  
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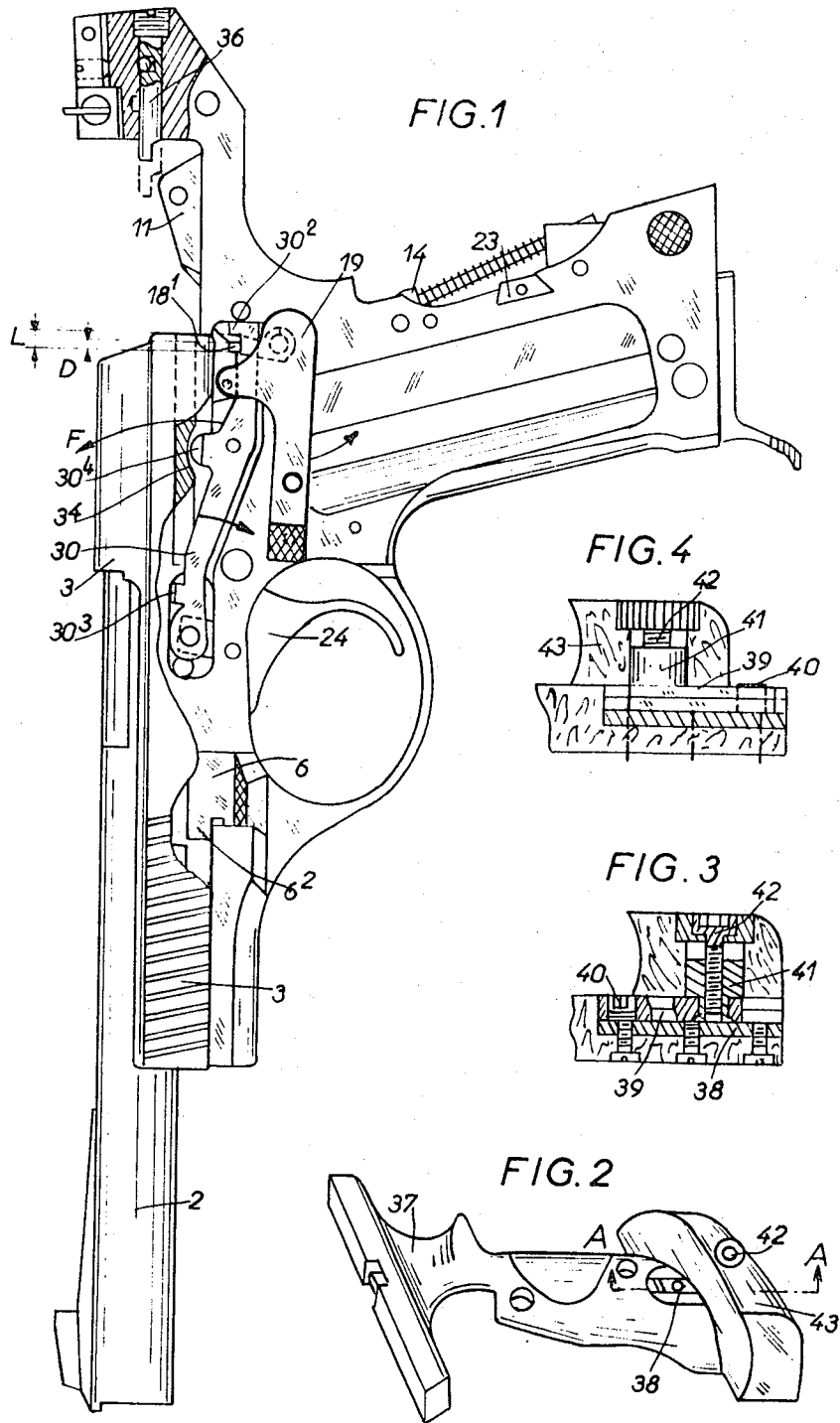
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[57] **ABSTRACT**

A repeating pistol wherein the sear is controlled by the trigger through an intermediate connecting link providing a clearance connection so that an idling motion may be imparted to the trigger before it releases the sear. The path or stroke of the trigger may be readily adjusted both forwardly and rearwardly independently of the adjustment of the pressure to be overcome when triggering. A manually operable lever is provided for lowering the intermediate connecting link so as to thereby disconnect the sear with respect to the trigger.

**8 Claims, 10 Drawing Figures**





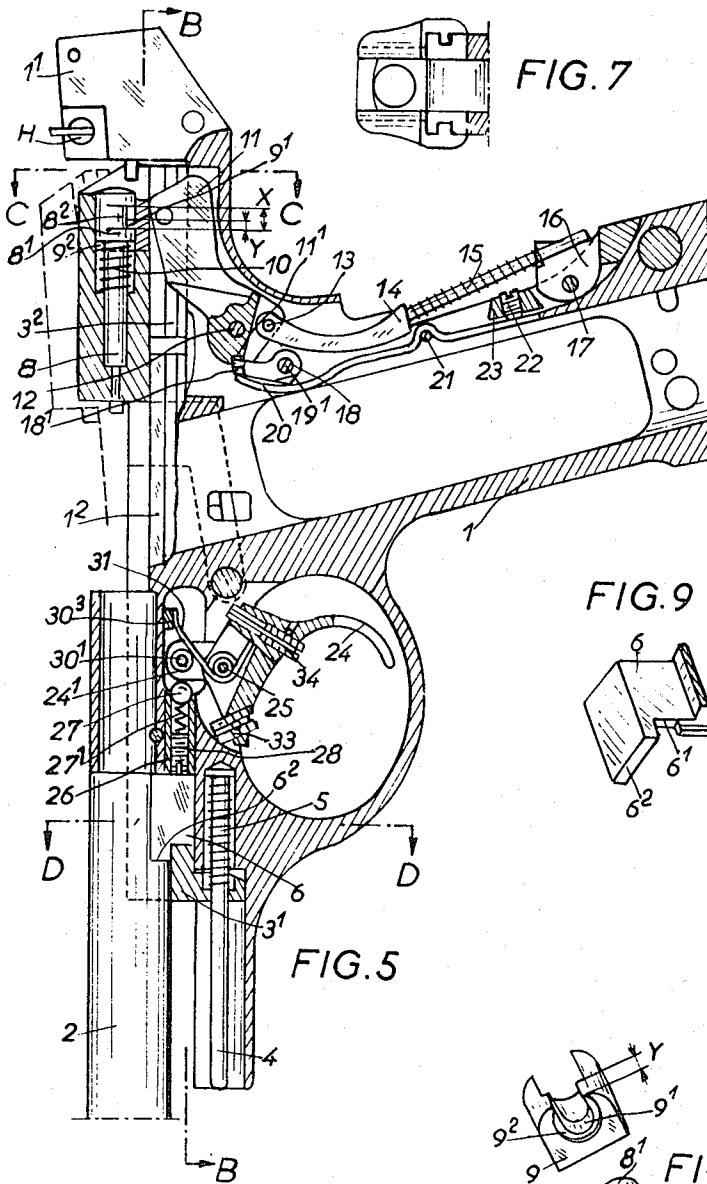


FIG. 5

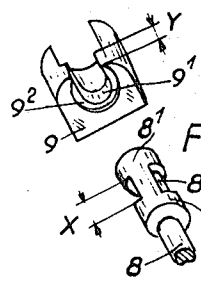
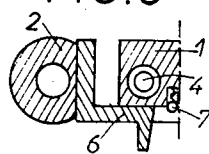
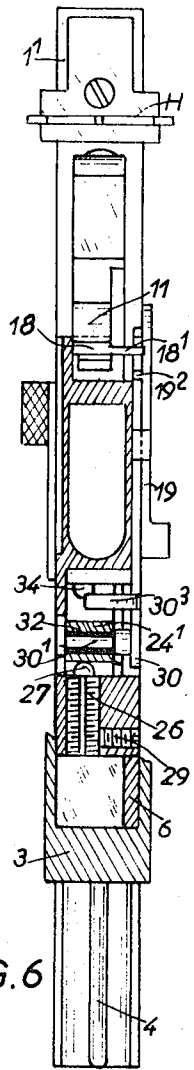
FIG. 7

FIG. 9

FIG. 6

FIG. 8

FIG. 10



# 1 REPEATING PISTOL

This invention relates a repeating pistol provided with a charger and intended for rigidly controlled contest firing.

In presently known pistols of this type, the pull off and striking mechanisms fail to provide an adequate range of adjustments which may be required by the marksman before firing. Furthermore, such prior art mechanisms are excessively intricate and delicate.

The repeating pistol according to our invention obviates such drawbacks in a manner whereby the adjustments performed prior to firing allow, in succession, a modification in the pressure exerted on the trigger in accordance with the load applied, an adjustment of the stroke of said trigger independently of the pressure, an adjustment of the stop provided at the front of the trigger so as to define its idling stroke before it drives the sear through the agency of the intermediate connecting link, and finally the adjustment of a return pressure exerted by a blade spring against the sear.

According to a further feature of our invention, the micrometric back sight is secured directly to a structure formed with the pistol body.

According to a still further feature of our invention, the movable bolt or breech block is adapted to slide longitudinally with reference to the pivotal body and cooperating at its front end with a collapsible latch acting as a stop so as to facilitate its dismantling or lock into position as required.

The setting of the pistol may be obtained by means of an intermediate sliding connecting link inserted between the sear and the trigger, with the connecting link being provided with and displaying adjacent the rear of the pistol, a setting notch adapted to cooperate with a projection on the sear so as to drive the latter, while a safety lever pivotally secured to the pistol body is adapted to release the intermediate connecting link.

According to a further feature, the stroke of a striker which is slidingly carried toward the rear of the movable breech block may be accurately defined so that the striker may engage a collapsible stop position vertically within the breech block, and to thereby lock the stop against movement.

The tang or shoulder engaging the palm, of the marksman's hand is carried by the grip of the pistol and may advantageously be adjusted so as to provide a variable positioning thereof over a large range through the use of an invertible supporting plate.

These features will appear, more readily in the following description of an embodiment of our invention reference being had to the accompanying drawings, wherein:

FIG. 1 is a side view of the pistol, partly in section, the movable breech block being shown in an operative position before firing, and with the grip not being illustrated for clarity;

FIG. 2 illustrates on a smaller scale and in perspective view a section of the grip showing the palm-engaging tang thereon;

FIG. 3 shows larger scale a cross-section through line a-a of FIG. 2, the tang being in its lowermost position;

FIG. 4 is a view similar to FIG. 3, with the tang shown in a higher position following a rotary motion of its supporting plate;

FIG. 5 is a longitudinal sectional view of the pistol, the movable breech block shown in its rearmost re-

tracted position prior to its dismantling, as shown in interrupted lines;

FIG. 6 is a plan view, partly in section taken through line B-B of FIG. 5;

FIG. 7 is an end view, partly in section through line C-C of FIG. 5;

FIG. 8 is a transverse cross-section through line D-D of FIG. 5;

FIG. 9 is a perspective view of the collapsible latch;

FIG. 10 is a perspective exploded view of the striker in alignment with its collapsible stop.

As illustrated, the repeating pistol includes a unitary body 1 at the front end of which may be securely fitted a pistol barrel 2 while its rear end forms an enlarged structure 1' to the upper surface of which is secured a conventional micrometric sight.

The body 1 is provided with laterally extending longitudinal grooves 1<sup>2</sup> along which a movable breech block or bolt 3 is adapted to freely slide. The breech block bears against the rear end of the barrel and includes at its front end a depending rounded tongue 3' which slidingly engages a longitudinal U-shaped opening formed in the front end of the body 1. A guiding rod 4 which is within an axial blind bore formed in the body 1 is surrounded by a coil spring 5 which normally urges the breech block 3 back into its operative position.

In its rearmost retracted position, the movable breech block 3 has its guiding means 3<sup>2</sup> disengaged with reference to the above-mentioned groove 1<sup>2</sup> in the body 1 whereby successive dismantling operations may be effected by means of vertical releasing movements as illustrated in interrupted lines in FIG. 5, and through a manually controlled sequence so as to release the tongue 3' with respect to the cooperating opening in the body 1.

This dismantling is facilitated by a collapsible latch 6 adapted to slide vertically along one of the lateral surfaces of the body 1 while its front surface 6' allows the extreme retracting motion of the breech block 3 (FIG. 9).

When the latch is in its lowermost position (FIG. 1), its upper part forms a projecting tail-piece 6<sup>2</sup> defining the end of the stroke of the tongue 3' for which it provides a stop so as to prevent disengagement of the guiding means 3<sup>2</sup> on the movable breech block with the body is prevented and to thereby prohibit the dismantling thereof.

The latch 6 is held fast in each of its extreme positions by a ball 7 which is subjected to the action of a spring housed within a hole formed in the body 1.

In the movable breech block 3, a striker 8 may slide axially, the rear end of the striker being formed into a cylindrical head 8' one side of which is cut so as to provide a flat-bottomed transverse groove 8<sup>2</sup>, the length of which, extending longitudinally of the striker, is designated by X. The flat-bottomed groove may be shifted between the projecting edges of a corresponding U-shaped opening 9' formed in a detachable stop or plate 9 fitted vertically in a corresponding recess in the movable breech block 3 (FIG. 10). It is noted that the length of the edges of opening 9' is equal to a value Y which is smaller than the length X of the groove 8<sup>2</sup> so as to accurately define the longitudinal stroke of the striker 8, and with the transverse edges of the groove 8<sup>2</sup> located inside the opening 9' abutting against the transverse ends of the projecting edges of the latter.

The length of such a stroke is thus equal to X-Y as illustrated in FIG. 5.

The front section of the striker 8 carries a coil spring 10 normally urging the striker rearwardly. The spring is housed within a shouldered chamber which is formed in the movable breech 3, and normally urges a cylindrical section 8<sup>3</sup> of the striker head, lying to the front of the groove 8<sup>2</sup>, rearwardly into a chamber, having a corresponding diameter 9<sup>2</sup>, to the front of the opening 9<sup>1</sup> so as to provide a longitudinal fitting which prevents, when the striker has been retracted an undesired release of the stop 9 within the movable block 3.

The release of the stop 9 is effected by pushing the striker 8 so as to move its front section 8<sup>3</sup> out of the chamber 9<sup>2</sup>.

The body 1 is recessed in its upper rear part in order to form a housing for the rocking hammer 11, the latter of which is pivotally secured to a spindle 12. The lower end of the hammer is coupled by means of a pivot 13 with the end of a pusher lever 14, about the outer end of which a coil spring 15 is wound, and the spring axially engaging a cleat 16 retained within a transverse recess of the body 1 by means of a pin 17.

Along its lower rounded edge, the hammer 11 includes a notch 11<sup>1</sup> which is adapted to be engaged when the pistol is being set, the projecting nose on a sear 18 being pivotally secured to a rod 19<sup>1</sup> which is rigidly formed with a safety lever 19 (FIG. 1). 1).

A spring 20 is inserted vertically in a blade recess formed in the body 1 and shaped at its mid-length to provide a loop bearing on a transverse pin 21. The upper section of the spring 20 is shaped so as to engage the upper front surface of the sear 18, while the opposite end of the spring is urged into abutment with the body by the tip of a screw 22 positioned within a transverse dove-tailed cleat 23 in the body 1.

Through this arrangement it is apparent that the turning of the screw 22 by a predetermined amount produces a suitable tensioning of the lower end of the spring 20, and consequently, an adjustable stress is exerted in the opposite direction against the sear 18 which is thereby thrust forwardly to ensure the required hooking engagement with the hammer 11.

It is noted that the screw 22 is provided at its outer end with longitudinal grooves which cooperate with spring biased positioning balls housed within holes provided in the cleat 23.

It is further noted that the sear 18 extends transversely along the outside of the body 2 so as to form a projection 18<sup>1</sup> cooperating with a hitch in an intermediate connecting link 30 as disclosed hereinafter.

A trigger 24 is pivotally secured to the body at 25 and includes a head 24<sup>1</sup> engaging a shaped groove in the body 1. The head 24<sup>1</sup> provides at its end a permanent surface for a thrust-exerting ball 27 which is housed in the axial bore of a sleeve 26, the latter of which is longitudinally screwed into the front end of the pistol body 1. The action of a coil spring 27<sup>1</sup> urges the ball 27 towards the trigger head 24<sup>1</sup>, and may be adjusted by a screw 28 screwed into the tapped bore of the sleeve 26, so as to provide for the adjustment of the pressure exerted on the trigger 24 in accordance with the load prescribed for competition purposes.

Furthermore, the sleeve 26 is locked by means of a transverse screw 29 threaded into the body 1. As in the case of the screw 22, the screw 28 is provided with exterior longitudinal grooves which cooperate as illus-

trated in FIG. 6 with the screw 29 so as to prevent an undesired release of the screw 28. Thus, it is apparent that the adjustment of the pressure exerted on the trigger 24 is completely independent of the means returning the sear into its inoperative position.

The head 24<sup>1</sup> of the trigger 24 carries a transverse sleeve 32 into which is fitted a stud 30<sup>1</sup> which is rigidly connected with an intermediate connecting link 30 so as to permit the latter to be shifted longitudinally.

The lateral connecting link 30 (FIG. 1) 1) is provided at its rear end with a U-shaped notch 30<sup>2</sup> which engages the lateral projection 18<sup>1</sup> on the sear 18 so as to ensure the engagement of the latter. The length L of the notch 30<sup>2</sup> is, however, greater than the length D of the projection 18<sup>1</sup> so as to allow the connecting link 30 to execute an adjustable longitudined idling stroke without effecting movement of the sear 18.

It is noted that the continuous contact between the bottom of the notch 30<sup>2</sup> and the projection 18<sup>1</sup> is obtained by a thrust in the direction of the arrow F, which is provided by a hairpin-shaped spring 31 secured to the sleeve engaging the pivot of the trigger 24, and with the upper resilient section of the spring 31 bearing against a transverse tongue 30<sup>3</sup> formed in the front section of the connecting link 30.

It is apparent that upon firing a suitable gradual force exerted on the trigger 24 provide for a shifting of the intermediate connecting link 30 which executes an adjustable idling stroke, at the end of which the link drives the sear 18 in opposition to the action of the spring 20 so as to allow the nose therein to disengage from the hammer notch 11<sup>1</sup>.

The hammer is thereby released and rocks so as to impinge against the striker, the movable breech block being thereby moved into its operative position.

The idling stroke for the connecting link 30 may be adjusted by means of the front abutting point of the trigger 24, the point being defined by the inner end of a screw 33 extending obliquely through the front end of the trigger so as to adjustably engage the registering in the body 1. The screw 33 is also provided with exterior longitudinal grooves adapted to cooperate with a positioning ball. Similarly, the outer rear end of the trigger 24 is provided with an adjustable stop so as to provide for a pivotal motion having a predetermined amplitude, with the stop being constituted by a screw 34 the tip of which is also adapted to engage the cooperating groove in the body 1.

In order to prevent the occurrence of continuous firing in the event that the marksman leaves his finger on the trigger 24, it is necessary for the connecting link 30 to automatically lower whenever the movable breech block 3 is shifted, this action being facilitated by the engagement of a boss 30<sup>4</sup> on the upper surface of the connecting link 30 with a longitudinally shaped groove formed on one side of the movable breech block 3. A release in the direction of the arrow F1 disengages the notch 30<sup>2</sup> formed in the link from the projection 18<sup>1</sup> on the sear which automatically permits the sear 18 to be reset each time the hammer recedes after firing. For providing the operative position of the movable breech block 3, the boss 30<sup>4</sup> on the upper surface of the connecting rod engages a notch 3<sup>4</sup> in the breech block so as to interengage the breech block and connecting link. The manually controlled safety lever 19 which pivots a 19<sup>1</sup> coaxially with the sear 18, carries at its upper end a projection 19<sup>2</sup> (FIG. 5) adapted to shift the connect-

ing link 30 downwardly so as to release the latter by disengaging the notch 30<sup>2</sup> in the link with respect to the projection 18<sup>1</sup>. The lever is held fast in either of its extreme positions by means of positioning balls, which are not illustrated.

Below the micrometric sight, an axial abutment rod 36 (FIGS. 1,6) is located the flat free end of which registers with the hammer 11 so as to limit the path followed by the latter. When set in the position illustrated in interrupted lines in FIG. 1. Such an arrangement is of interest for blank firing, when the cartridge is not ignited. Actual firing is executed after an unscrewing of the abutment rod 36, which is also tensioned and positioned by a spring-urged ball, as shown in FIG. 1, located within the rod and adapted to engage at least one recess in the raised structure 1<sup>1</sup>.

According to our invention there is rigidly secured to one half of a grip 37 of the pistol, either on the right-hand side or on the left-hand side, a plate 38 which is provided with a T-shaped recess forming an annular slideway for a link 39 frictionally held in an adjusted position by a screw 40. This link is rigidly connected with a cylindrical locking nut 41. This provides means for the vertical adjustment of the tang 43 with respect to the grip section 37. This adjustment has a wide range and extends between the extreme positions in which the nut 41 secures the link 39, as illustrated in FIG. 3 for the outer lower position of the tang 43 and in FIG. 4 for the inner upper position of the tail-piece.

Obviously the parts of the pistol which have not been described such as the stop for the charger, the stop for the breech block when the charger is empty and the foresight, are constructed in the usual manner known in the art.

Our invention is not limited to the embodiment and details thereof which have been particularly described hereinabove and it covers all the modifications thereof falling within the scope of the accompanying claims.

What we claim is:

1. A repeating pistol including a body, a breech block longitudinally movable therein and a grip, comprising the combination of a hammer pivotally secured to a point in the upper rear portion of said body, a coil spring bearing against said body and urging said hammer into its operative position, a sear pivotally secured to said body for engaging said hammer when setting the pistol, a blade spring urging said sear into an operative position, first means for adjusting the tensioning of said blade spring, a trigger, second means for adjusting the length of the stroke of said trigger and the pressure to be applied to it, an intermediate connecting link eccentrically carried by said trigger and controlling said sear, a raised structure at the rear end of said body, and an abutment rod extending longitudinally through said raised structure, the front end of said abutment rod registering with said hammer to limit the stroke of the latter for blank firing purposes, said abutment rod being slidably lodged in a passage provided in said raised structure, said abutment rod having a partial transversal recess in the rear portion thereof, with a spring-urged ball lodged in said transversal recess, said passage having therein at least one lateral recess adapted partly to receive said spring-urged ball to hold said abutment rod longitudinally fast when extended toward said breech block.

2. The pistol as defined in claim 1, wherein said connecting link is provided at its rear end with a notch for

releasably engaging said sear, a spring urging said connecting link upwardly to operatively engage said notch with said sear, a hand-operable safety lever pivoting coaxially with said sear for depressing said connecting link and releasing it with reference to said sear, and a boss rigid with said connecting link and engaging said breech block, to be depressed thereby together with said connecting link when said breech block is in its rearmost position.

3. The pistol as defined in claim 1, wherein said second adjusting means include a ball, a coil spring urging said ball against the inner end of said trigger, a sleeve enclosing said coil spring and slidingly engaging said body, a screw engaging said sleeve to adjust the pressure of said coil spring, and a further screw extending transversely of said sleeve to hold the latter in an adjusted position.

4. The pistol as defined in claim 1, wherein said second adjusting means include, for adjustment of the rear end of said stroke of the trigger, a screw extending through the rear outer end of said trigger and engaging said body.

5. The pistol as defined in claim 1, further comprising a plurality of screws forming part of said first and said second adjusting means, provided with outer longitudinal grooves and spring-urged balls housed within said body and engaging said longitudinal grooves to hold said screws fast in their adjusted positions.

6. A repeating pistol including a body, a breech block longitudinally movable therein and a grip, comprising the combination of a hammer pivotally secured to a point in the upper rear portion of said body, a coil spring bearing against said body and urging said hammer into its operative position, a sear pivotally secured to said body for engaging said hammer when setting the pistol, a blade spring urging said sear into an operative position, first means for adjusting the tensioning of said blade spring, a trigger, second means for adjusting the length of the stroke of said trigger and the pressure to be applied to it, an intermediate connecting link eccentrically carried by said trigger and controlling said sear, a striker adapted to slide longitudinally of said breech block and including at its rear end a cylindrical head provided with a vertical transverse flat-bottomed groove, and a detachable stop provided with a U-shaped opening for engaging the part of said striker head provided with said groove and defining the stroke of said striker between two abutting surfaces, said stop being provided furthermore at its front end with a cylindrical chamber engaged by the front section of said striker head, whereby said stop is securely held in its upper inoperative position.

7. The pistol as defined in claim 6, wherein said second adjusting means include, for adjustment of the front end of said stroke of the trigger, an adjustable screw extending obliquely through the front inner end of said trigger and engaging said body, said connecting link and said sear controlled thereby including cooperating interengaging parts, the relative sliding movement of which is associated with an idle shifting for a predetermined range of adjustments of said front end of the trigger stroke.

8. The pistol as defined in claim 6, wherein said first adjusting means include a pivot on said body, engaging a point of the length of said coil spring, an adjustable screw acting on the lower outer end of said spring, and a cleat secured to said body and engaged by said screw.

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