Aug. 4, 1925.

1,548,236

F. ZEHNER

SELF LOADING PISTOL

Filed Oct. 17, 1923

3 Sheets-Sheet 1

Fig. 1.

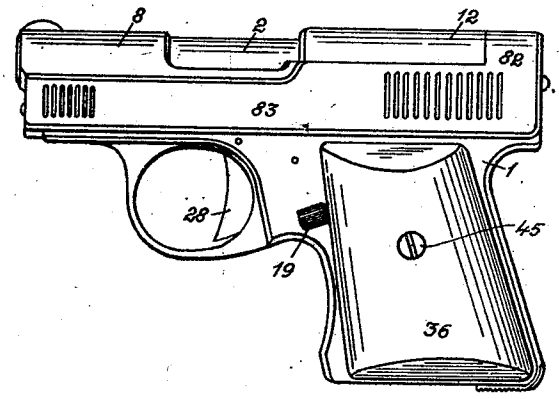


Fig. 1a

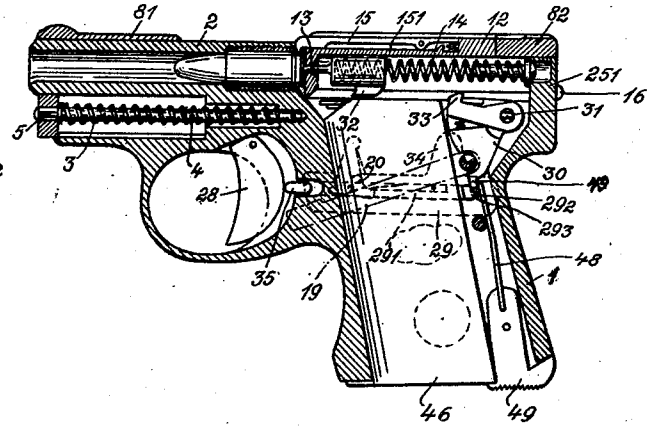
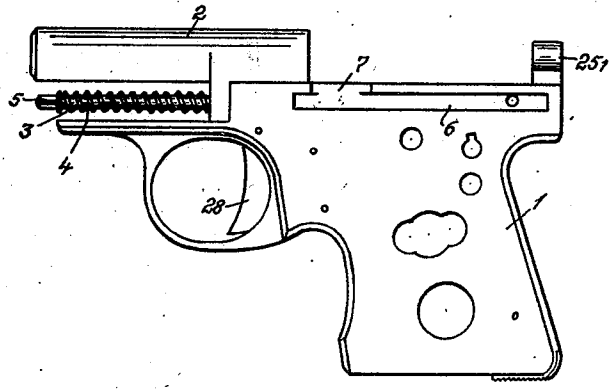


Fig. 2.



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Fig. 3.

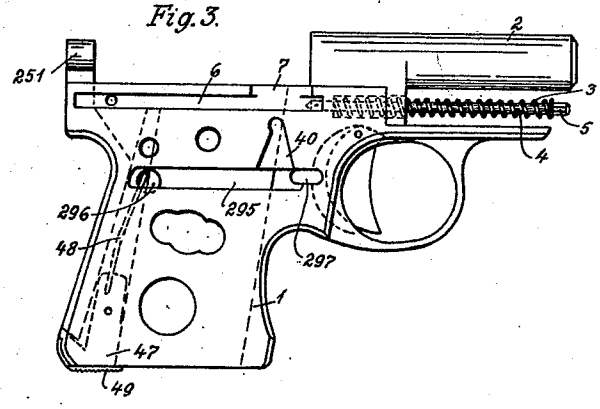


Fig. 4.

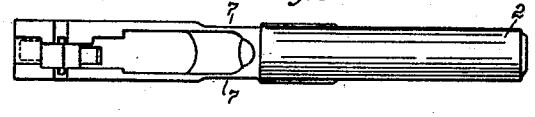


Fig. 6.



Fig. 5.

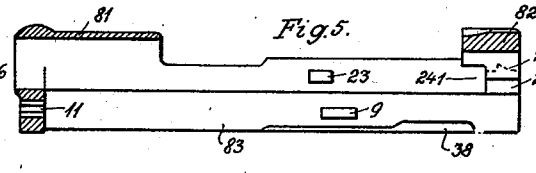


Fig. 7.

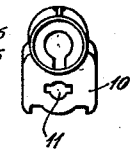


Fig. 8.

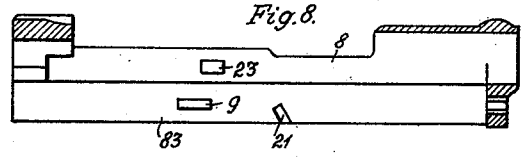


Fig. 9.

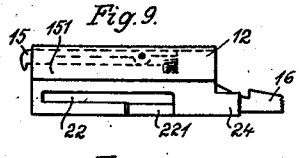


Fig. 11.

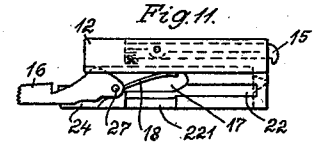


Fig. 13.



Fig. 10.

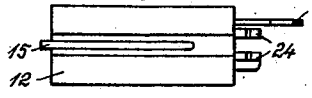
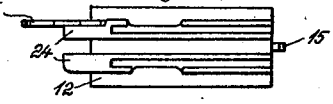


Fig. 12.



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Fig. 14.



Fig. 15.



Fig. 16.

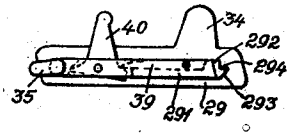


Fig. 16a



Fig. 17.

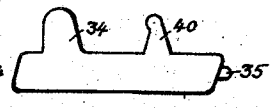


Fig. 18.

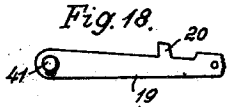


Fig. 19.

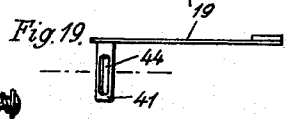


Fig. 20.

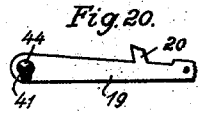


Fig. 21.

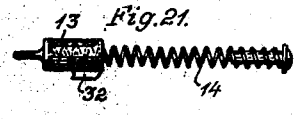


Fig. 22.

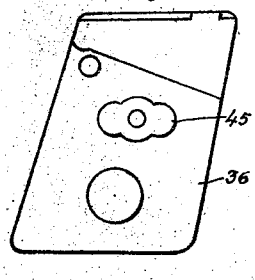


Fig. 23.

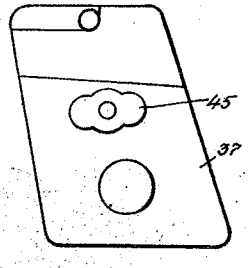
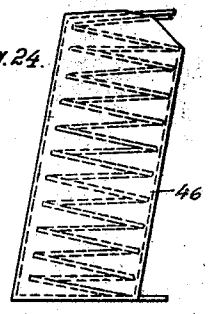


Fig. 24.



Fritz Zehner
By David Davis
Atty.

Patented Aug. 4, 1925. 1,548,236

UNITED STATES PATENT OFFICE.

FRITZ ZEHNER, OF SUHL, GERMANY.

SELF-LOADING PISTOL.

Application filed October 17, 1923. Serial No. 669,114.

To all whom it may concern:

Be it known that I, FRITZ ZEHNER, a citizen of Germany, residing at Suhl, in the State of Prussia, Germany, have invented certain new and useful Improvements in Self-Loading Pistols; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in self-loading pistols, and the obect of the improvements is to provide a pistol in which the parts may be readily taken apart or assembled. With this object in view my invention consists in constructing the guide members for the breech slide or receiver and its return spring so that the said receiver may be placed on the body of the pistol in a direction perpendicular to the axis of the barrel, and that when thus mounting the receiver the return spring need not be compressed. Another object of the improvements is to provide a pistol in which the receiver is locked in position when inserting the breech block. Another object of the improvements is to provide a pistol in which the breech block can be disconnected from the breech slide only in the retracted position of the latter. Finally my invention relates to means for preventing full expansion of the return spring so that the said receiver may be inserted while the spring does not act on the same.

In order that my invention be more clearly understood an example embodying the same has been shown in the accompanying drawings, in which the same reference characters have been used in all the views to indicate corresponding parts. In said drawings,—

Fig. 1, is an elevation of the pistol,

Fig. 1ª, is a sectional elevation of the pistol showing all the parts assembled.

Fig. 2, is a similar elevation showing the barrel, the butt portion of the pistol and the return spring, the other parts being removed,

Fig. 3, is an elevation of the parts shown in Fig. 2 and some parts disposed within the butt portion and looking from the opposite side from Fig. 2,

Fig. 4, is a top plan view of Fig. 3,

Fig. 5, is a detail sectional view showing the longitudinally sliding breech slide or receiver,

Fig. 6, is an elevation looking from the right in Fig. 5,

Fig. 7, is a similar elevation looking from the left in Fig. 5,

Fig. 8, a sectional view of the receiver shown in Figs. 5 to 7 looking from the opposite side as compared to Fig. 5,

Fig. 9, is a detail view showing the breech block and the parts mounted thereon,

Fig. 10, is a plan view of Fig. 9,

Fig. 11, is an elevation similar to that shown in Fig. 9 and looking from the opposite side,

Fig. 12, is a bottom view of Fig. 11,

Fig. 13, is an elevation looking from the left in Fig. 11,

Fig. 14, is a detail view showing the sear and the rocker carrying the same,

Fig. 15, is a plan view of Fig. 14,

Fig. 16, is an elevation showing the trigger bar,

Fig. 16ª, is a plan view of Fig. 16,

Fig. 17, is a similar view looking from the opposite side of the trigger bar,

Fig. 18, is an elevation showing the safety catch,

Fig. 19, is a plan view of Fig. 18,

Fig. 20, is an elevation of the part illustrated in Figs. 18 and 20 and showing the locking pin in section,

Fig. 21, is a detail view showing the firing-pin and its spring,

Figs. 22 and 23, are detail views showing the shells of the butt,

Fig. 24, is an elevation showing the magazine, and

In the example shown in the drawings the barrel 2 is rigidly connected with the butt 1, and the rod 4 of the return spring is secured to the butt. At its front end the rod 4 is provided with two noses 5 engaged by the front end of the spring and limiting the expansion thereof. At the rear of the barrel the body of the butt 1 shows longitudinal guide grooves 6 the upper walls of which are formed with recesses 7. The rear end of the body of the butt shows a lug 251 formed with an enlarged cylindrical head.

In Figs. 5 to 8 I have shown the longitudinally slidable breech slide or receiver 8. As shown the said receiver consists at its front and rear ends of semi-cylindrical portions 81

and 82 which are open at their bottoms, and flanges 83 depending from and connecting the front and rear portions. The flanges 83 are formed at their inner sides with lugs 9 adapted to be passed through the recesses 7 when assembling the gun and to slide in the guide grooves 6 of the body of the butt. At the front end the flanges are connected by a lug 10 provided with an opening 11 for the passage of the rod 4 and its noses 5 therethrough. The cylindrical rear portion 82 shows a notch 25 corresponding to and guided on the head 251. In assembling the gun the receiver 8 is placed on the barrel from above with the semi-cylindrical part 81 projecting beyond the barrel and the lugs 9 passing through the recesses 7 and into the guide grooves 6, whereupon the receiver is shifted rearwardly, the notch 25 engaging the lug 251.

The open part of the receiver is adapted to have the breech block 12 mounted therein. As appears from Figs. 9–13 the breech block is formed with an axial bore receiving the firing-pin 13 and its spring 14 (Fig. 21), which bore opens to the bottom side to accommodate a lug 32 of the firing-pin adapted for engagement by the sear 33. In the assembled position of the parts the spring 14 bears on the cylindrical lug 251. At one side the breech-block shows a recess 17 receiving a catch 16 adapted to lock the breech block in the rear position within the receiver. The catch 16 is rockingly mounted on a pin 27 and it is acted upon by a leaf spring 18 tending to force the same with its rear end upwardly. The top of the breech block is formed with a groove 151 accommodating an extractor 15. The side faces are each formed with a longitudinal groove 22 the bottom walls of which are recessed, as is shown at 221.

For inserting the breech block 12 the receiver 8 is shifted rearwardly until it is locked in position by a catch 19 to be described hereafter, a nose 20 of the said catch engaging in a notch 21 of the receiver. Now the breech block is inserted into the receiver from above, the recesses 221 permitting the passage of lugs 23 formed on the inner walls of the flanges 83, which lugs engage the grooves 22. The block is shifted rearwardly and rigidly connected with the receiver by the catch 16 engaging in a slot 26 and two lugs 24 of the block engaging in a cut out portion 241 of the receiver.

If now the receiver 8 is released and allowed to move forwardly, the catch 16 is supported on the body of the butt so as to be locked thereby in engagement with the receiver. Therefore the catch can not be set in non-locking position without first retracting and locking the receiver, and the breech block and receiver are locked in a reliable way.

The trigger 28 acts on a trigger rod 29 for shifting the same and rocking a sear rocker 30 about its axis 31. On the said axis a sear 33 is mounted which is adapted to lock the firing-pin in cocked position by engaging a lug 32 of the said bolt.

The trigger rod has been illustrated in Figs. 3, 16, 16ª and 17. As shown in the said figures it is formed with an arm 34 engaging in a recess 38 of one of the flanges 83 of the receiver. To one side of the rod 29 a plate 291 is secured which is formed at its front end with a projection 35 in the form of a hook adapted for engagement by the trigger, and at its rear end with a laterally projecting nose 292 having a beveled rear face 293 and a notch 294. The plate 291 is fitted in a slot 295 made in one of the side walls of the butt, and the projections 35 and 292 pass through holes 296 and 297 into the inner part of the butt. By thus constructing the rod it is held in position on the body of the butt even if the shells 36 and 38 are dismounted, and it can be removed only after dismounting the receiver. On the rod 29 an arm 40 is rockingly mounted which is acted upon by a spring 39 and embedded in a recess 297 of the body of the butt. By the arm 40 the rod 29 is forced forwardly. The notch 294 is engaged by a finger 49 of the sear rocker 30.

For locking the firing-pin a lever 19 is made integral with a spindle 41, which spindle extends through a cut-out portion 42 of the sear rocker 30. The spindle is formed with a recess 44, and in the non-locking position a nose 43 of the rocker 30 is adapted to engage in the said recess so as to retract the sear 33 from the nose 32 of the firing-pin. For setting the safety the spindle 41 is rocked by means of the arm 19 into the position in which the nose 43 bears on the circumference of the spindle, so that the said rocker can not be operated by the rod 29 for retracting the sear.

The shells 36 and 37 are secured to the body 1 of the butt by means of nuts 45. The construction of the magazine is known in the art. It is held in position by means of a spring pressed rocker 47 having a nose 49 engaging below the rear edge of the magazine. A spring 48 secured to the said rocker bears on the rear end 49 of the rocker 30 for elastically forcing the same upwardly.

For dismounting the parts of the gun I proceed as follows: After removing the magazine 46 I retract the receiver 8 and I press the lever 19 upwardly by means of the thumb of the right hand, until the nose 20 of the said lever engages in the notch 21 of the receiver so as to lock the same in retracted position. Now the catch 16 is pressed downwardly for releasing the breech block 16 which is shifted forwardly with its front face engaging the rear end of

the barrel. Ordinarily the spring 14 of the firing-pin will thus shift the block. The block 12 and the parts mounted thereon are lifted out of the receiver and through the open portion provided between the rear end of the barrel and the rear part 83 of the receiver. Now the lever 19 is pressed downwardly and the receiver is held by the hand and allowed slowly to be moved forwardly by the return spring 3, so that the lugs 23 are slowly brought in contact with the rear face of the barrel. The receiver 8 is now in its end position at the front part of the gun, and it is lifted away from the barrel and butt with its axis remaining parallel to the axis of the barrel. By means of a screw driver the shells 36, 37 are unscrewed, the nuts 45 being turned to the right or left through an angle of 90 degrees. By pressing the trigger rearwardly the trigger rod is removed, the locking lever 19 is turned rearwardly through an angle of about 180° and into a position parallel to the axis of the barrel and lifted upwardly, the sear rocker 30 and the sear 33 are rocked upwardly until the sear makes contact with the portion 82 and finally all the parts are lifted out of the butt. Now all the parts are dismounted.

As appears from the description of the gun the parts are readily dismounted. The gun is reliable in operation. Even if it is taken apart when loaded and cocked the breech bolt 13 is not accidentally thrown forwardly when in position for firing the cartridge, such forward movement of the bolt being possible only after the breech block 12 has been lifted out of the receiver so far that the point of the breech bolt can not meet any more the fuse of the cartridge.

While in describing the invention reference has been made to a particular example embodying the same, I wish it to be understood that my invention is not limited to the construction shown in the drawings, and that various changes may be made in the general arrangement of the gun and the construction of its parts without departing from the invention.

I claim:

1. In a self-loading gun, the combination, with the barrel, and a frame supporting the same and formed with longitudinal guide grooves down both sides of the barrel, the upper walls bounding said guide grooves being each formed with a lug passage, of a breech slide around said barrel and at the rear thereof and formed with lugs guided in said grooves and adapted to pass through said passage, the position and dimensions of said recesses and lugs being such as to permit the slide when shifted forwardly to be lifted away from said frame.

2. In a self-loading gun, the combination, with the barrel, and a frame supporting the same, of a breech slide or receiver guided on said frame for moving longitudinally of the barrel, a return spring connected with said breech slide or receiver, the guide of the receiver being provided with portions permitting the receiver when in its front position to be removed from the frame with its axis remaining parallel to the axis of the barrel, and means to limit the expansion of said spring so that the breech slide when in its forward position is not acted upon by the spring.

3. In a self-loading gun, the combination, with the barrel, and a frame supporting the same, of a breech slide or receiver guided on said frame for moving longitudinally of the barrel, a return spring connected with said breech slide or receiver, and a rod on which said spring is mounted and formed with a shoulder for limiting the expansion of the spring, the guide of the receiver being provided with portions permitting the receiver when in its front position to be removed from the frame with its axis remaining parallel to the axis of the barrel, and said shoulder being located so that the breech slide when in its forward position is not acted upon by said spring.

4. In a self-loading gun, the combination, with the barrel, and a frame supporting the same, of a breech slide or receiver guided on said frame for moving longitudinally of the barrel, a breech block removably mounted in said breech slide or receiver, and means for locking said block to the slide, said means being releasable only in the retracted position of the slide.

5. In a self-loading gun, the combination, with the barrel, and a frame supporting the same, of a breech slide or receiver guided on said frame for moving longitudinally of the barrel, a breech block removably mounted in said breech slide or receiver, and a rockable catch on said block adapted to lock the same to the receiver, said frame being provided with a longitudinal surface on which said catch bears for being held in locking position.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

FRITZ ZEHNER.

Witnesses:
E. KLYGIL,
MARLIN BAERENS.