Feb. 12, 1952 W. B. RUGER 2,585,275

RECEIVER AND GRIP CONNECTION FOR AUTOLOADING PISTOLS

Filed Aug. 10, 1949 2 SHEETS—SHEET 1

FIG. 1

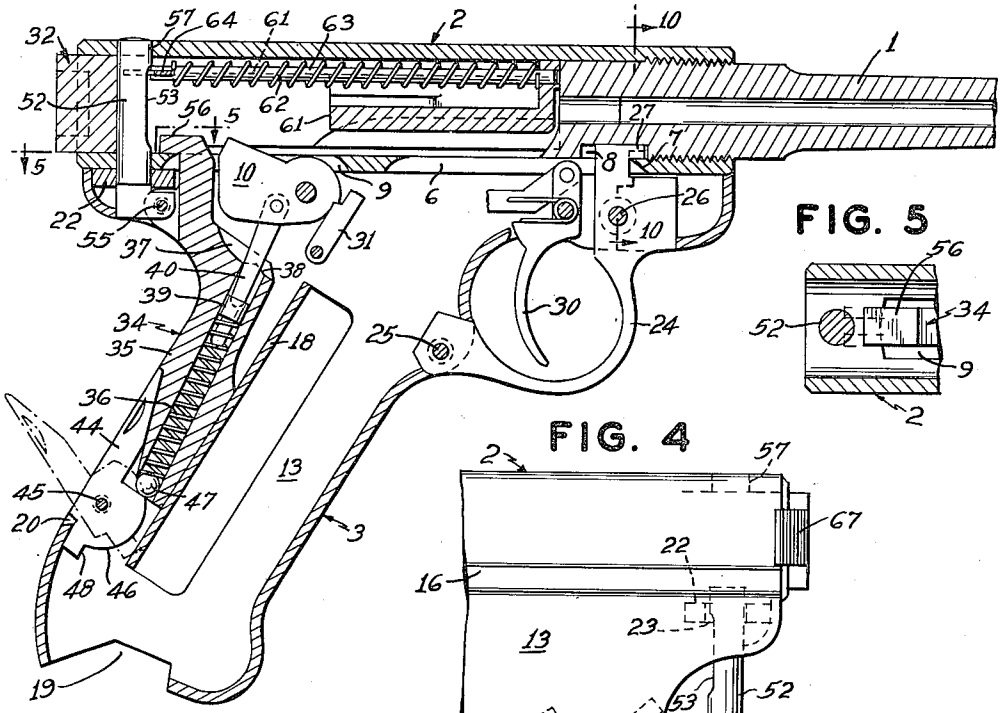


FIG. 5

FIG. 4

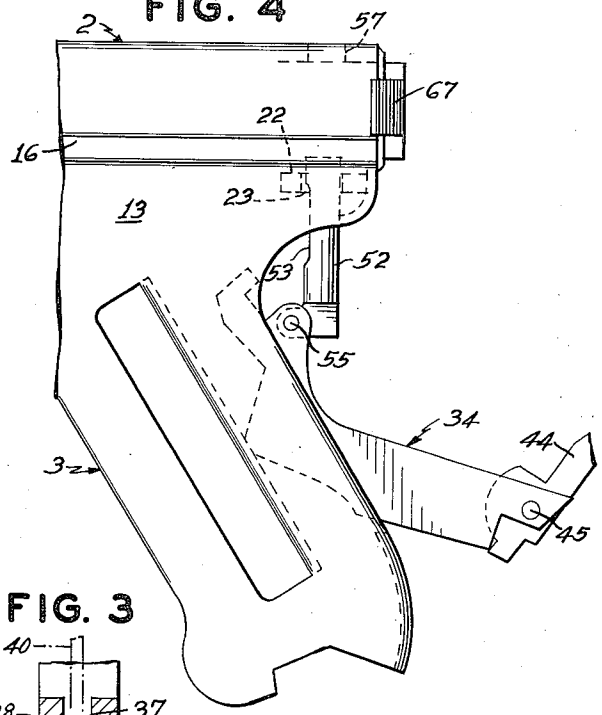


FIG. 2

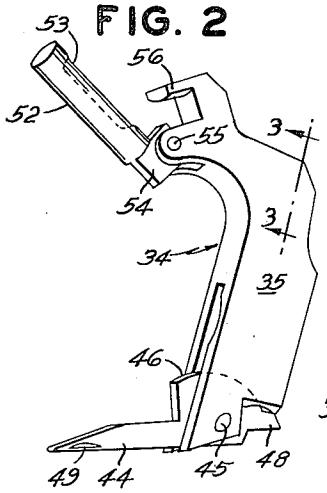
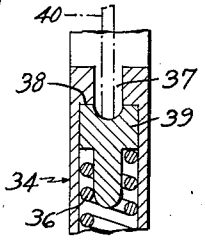


FIG. 3



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RECEIVER AND GRIP CONNECTION FOR AUTOLOADING PISTOLS

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FIG. 6

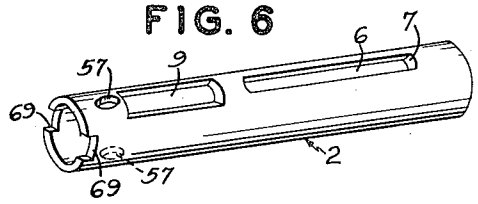


FIG. 7

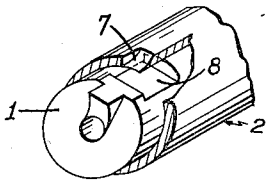


FIG. 8

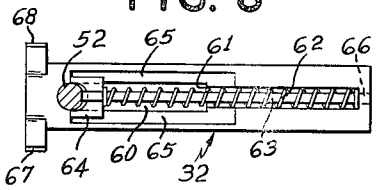


FIG. 9

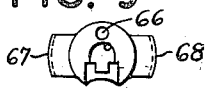


FIG. 10

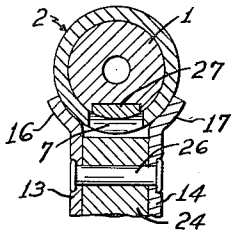


FIG. 11

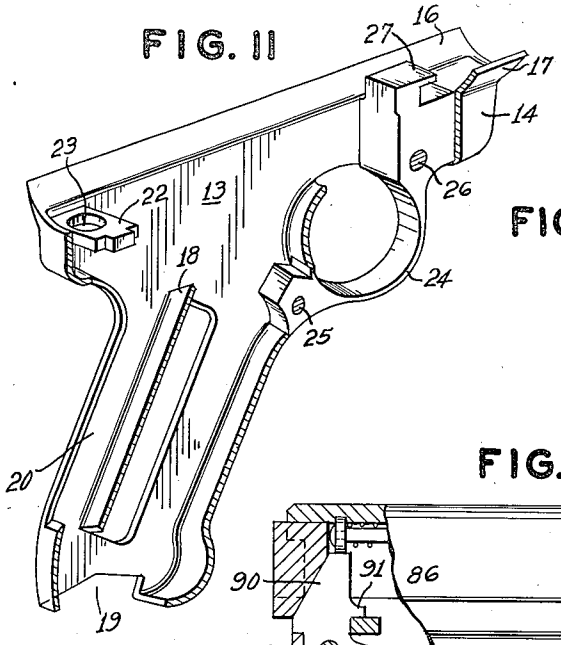


FIG. 12

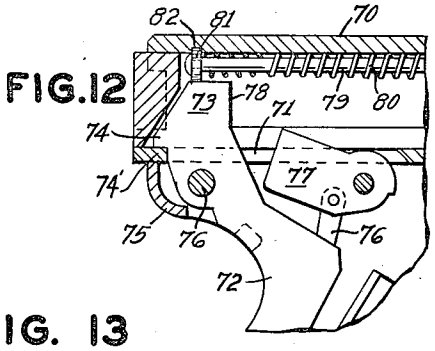


FIG. 13

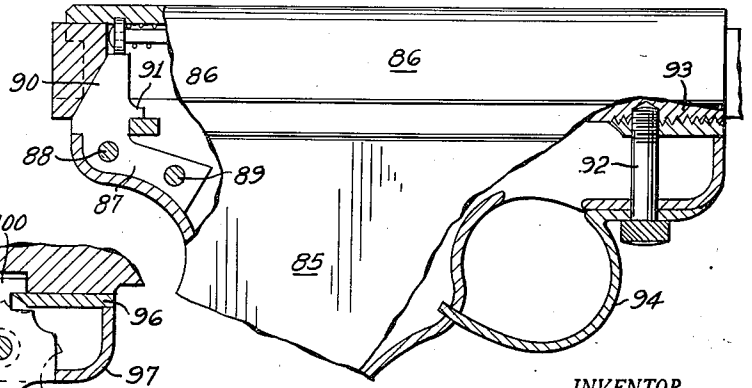
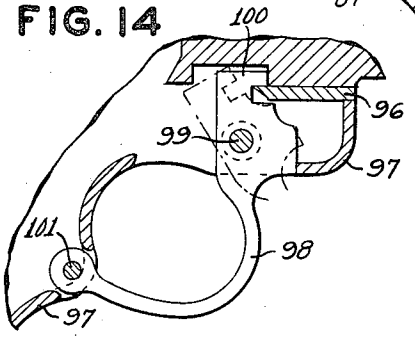


FIG. 14



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UNITED STATES PATENT OFFICE

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RECEIVER AND GRIP CONNECTION FOR AUTOLOADING PISTOLS

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Application August 10, 1949, Serial No. 109,491

7 Claims. (Cl. 42—75)

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This invention relates to autoloading pistols and has for its object the provision of certain improvements in such guns. My invention is concerned with pistols generally but is most advantageously applicable to pistols of the blow-back type.

My invention provides a pistol comprising as essential members a tubular receiver secured to the barrel, a breech bolt operable within the receiver, and a grip member removably attached to the receiver and in which are mounted the magazine and the hammer and trigger assemblies. My invention is primarily concerned with improved means for removably securing the grip member to the receiver and means for blocking the rearward travel of the breech bolt. In one embodiment of my invention, I provide a single means for effecting both the removable attachment of the grip member to the receiver and for blocking the rearward travel of the breech bolt, and spring means for applying a constant pressure between the grip member and receiver to maintain tightness between them. In one adaptation of the invention, I provide means for effecting the removable attachment and blocking the breech bolt having a single spring which operates the hammer and draws the grip member into snug engagement with the receiver, eliminating slack or play between the connected members due to the continuous bearing pressure of the spring. I may use a locking latch operated by the same spring to lock the attaching and blocking means in position. In one of its preferred embodiments, the invention comprises means for attaching the front part of the grip member to the front part of the receiver and means for attaching the rear part of the grip member to the rear part of the receiver with means for urging them in opposition to prevent displacement.

In still another form of the invention, I use a blocking member which is fixed to the rear of the grip member and which removably secures the same to the rear of the receiver, and a pivoted trigger guard having an integral receiver attachment, whereby the grip member may be secured to or removed from the receiver by swinging the trigger guard to or from its normal operative position.

These and other novel features of the invention will be better understood after considering the following discussion taken in conjunction with the accompanying drawings, in which:

Fig. 1 is a sectional elevation of an autoloading pistol with non-essential parts omitted, embodying my invention;

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Fig. 2 is a perspective view of the grip member and receiver attachment means of Fig. 1;

Fig. 3 is a sectional view at 3—3 of Fig. 2;

Fig. 4 illustrates the insertion or removal of the attachment means;

Fig. 5 is a view at 5—5 of Fig. 1;

Fig. 6 is a perspective view of the receiver from below;

Fig. 7 is a perspective view of the chamber end of the barrel;

Fig. 8 is a plan view of the breech bolt;

Fig. 9 is a front view of the breech bolt;

Fig. 10 is a view at 10—10 of Fig. 1;

Fig. 11 is a perspective view of the grip member of Fig. 1 with parts removed;

Fig. 12 is a fragmentary sectional view at the rear of a receiver and grip member illustrating a modification of the invention;

Fig. 13 is a fragmentary view with parts in section of a receiver and grip member illustrating another modification, and

Fig. 14 is a fragmentary sectional view of the front portions of a receiver and grip member illustrating another modification of the invention.

In that embodiment of my invention illustrated in Figs. 1 to 11, the pistol comprises a barrel 1 threaded into and thus secured to the tubular receiver 2. The receiver is preferably formed of steel and is cylindrical interiorly and exteriorly. The receiver, as best shown in Fig. 6, has a slot 6 for entry of the magazine and cartridges which leaves a lip or edge 7 extending over the barrel undercut 8 leaving a space for entry of the grip member coupling means. The slot 9 is for clearance of the hammer 10.

The grip member 3 may be formed in any suitable way, such as by casting, stamping, drawing or machining. As shown in the drawings, the grip member is formed of two mating half portions 13 and 14 welded together along their contacting edges which advantageously embrace a plane vertically bisecting the grip member. As best shown in Fig. 11, the grip member has arcuate-shaped outwardly projecting side flanges 16 and 17 within which the receiver is nested, as best shown in Fig. 10. The grip member half 13 has an inwardly pressed flange 18 which forms a partition and also a base guide for the magazine (not shown) which is inserted from below through the opening 19. The rearward portion of the grip member has a slot 20 in which is inserted a coupling member later to be described. The reenforcing bar 22 with a central hole 23 therein

is mounted in slots in the sides of the grip member and provides reenforcement for the coupling member.

The front portions of the grip member are left open, as best shown in Figs. 1 and 11, for the insertion therein of the trigger guard 24 which is permanently attached to the grip member by the rivets or pins 25 and 26. The upper portion of the trigger guard has a projecting lug 27 having an arcuate bearing surface which enters the undercut 8 in the barrel and hooks over the receiver lip 7, as shown in Fig. 1. The contacting edges of the two mating halves of the grip member are first welded and then finished resulting in an integral or unitary sheet metal grip member.

The pistol illustrated in Figs. 1 to 11 comprises a trigger 30 with means (not shown) for operating the sear 31 in the usual semi-automatic manner and a breech bolt 32 of the blow-back type which is reciprocably mounted in the tubular receiver 2. The rearward parts of the receiver and grip member are detachably connected together by means of the coupling member 34. This coupling member comprises a relatively heavy and rugged base 35 having a bore therein in which is mounted the combination spring 36. The bore extends completely through the base at the bottom but not at the top. At the top a milling cut 37 enters the bore, thus providing a shoulder or stop 38 for the spring head 39 against which the hammer strut 40 bears. The lower portion of the base is notched to receive the latch 44 which is pivotally connected thereto by the pin 45. The latch has a curved cam surface 46 which engages the ball 47 at the end of the spring 36, a latching lug 48 which engages the grip member to lock the coupling member in place, as shown in Fig. 1, and an operating arm with a nail or coin slot 49 for lifting the latch out of its locked position, shown in full lines, to the unlocked position shown in broken lines in Fig. 1. The upper portion of the base member has a blocking bar 52 with a flat bolt-striking side 53 and a flat extension 54 by means of which it is pivotally connected with pin 55 to the base. The projecting lug 56 having an arcuate bearing undersurface is projected through the undercut 9 and hooks over the receiver securing it in position (Fig. 1).

Fig. 4 illustrates the manner in which the coupling member is removed from or inserted into the slot 20 with the bar 52 being inserted upwardly through the hole 23 and through the hole 57 in the receiver. The flat strut 40 is, of course, guided into the narrow slot 37 with the end bearing against the cupped upper surface of the spring head 39. When the coupling member assumes the position shown in Fig. 1 with the latch open, as shown in broken lines, it is ready to be locked in position merely by pressing the latch arm downward to the position shown in full lines. The combination spring 36 is very powerful and bears at the lower end against the ball 47 which engages the cam surface 46 and thereby presses the latch into its locked position. It will be noted that the spring bears upwardly against the hammer and that the downward motion is opposed by the pressure of the lug 56 on the receiver. The receiver is accordingly permanently held with a resilient pressure against the grip member and looseness or play is thereby prevented, regardless of the accuracy of the initial fit or changes due to subsequent wear.

The breech bolt, as best shown in Fig. 8, has a

longitudinal slot 60 through which the blocking bar 57 is inserted and which guides the bolt in its rearward movement, maintaining it in a non-rotating position. At the rearward end of its travel, the flat edge 61 of the bolt strikes the flat face 53 of bar 52 and its rearward travel is thus stopped. The action or return spring 62 is mounted over the follower rod 63, both of which are inserted in a recessed portion of the bolt. The rear end of the rod has a wing-shaped plate 64 attached to the end which rides on the flat surfaces 65 of the bolt and the end of the follower rod is held in bearing contact with the bar 52 (Fig. 8). On the rearward travel of the breech bolt, the follower rod 63 remains stationary, and as the action spring is compressed, the breech bolt slides over the follower rod which passes through the hole 66. The breech bolt may be operated manually by engaging the knurled ears 67 and 68 which extend beyond the transverse slot 69 in the receiver. The flat surface 61 receives the blow of the hammer after the hammer has driven the firing pin ahead to fire the cartridge.

In that modification of the invention illustrated in Fig. 12, the receiver 70 has an undercut 71 for the swing of the hammer 77 and the insertion therethrough of the rear coupling member 72. This coupling member has an upwardly extending post 73 which enters a vertical slot in the breech bolt and which serves as a rigid block for the rearward travel of the breech bolt. Otherwise this coupling member is similar to the coupling member 34. It has a rearwardly projecting lug 74 which hooks over the receiver when the coupler is swung on the pivot pin 76, holding it in a secure but detachable connection to the grip member 75. The coupling member has an interior hammer spring (not shown) which operates the strut 76 of the hammer 77. The flat face 78 is the buffer surface for the breech bolt. The follower rod 79 for the action spring 80 has an annular base plate 81 which enters a slot 82 in the receiver and is held in the position shown by the top of the post 73. The end of the rod is riveted over the plate. The front portions of the grip member and the receiver may be detachably connected together in any suitable manner, for example by the means illustrated in Fig. 11.

In that modification shown in Fig. 13, the grip member 85 is connected to the receiver 86 at the rear by the coupling member 87 which is permanently attached to the grip member by the pins or rivets 88 and 89. This coupling member has an upwardly extending post 90 which enters a slot in the receiver from the rear and serves as a rigid stop for the rearward travel of the breech bolt, as previously described. It has a forwardly extending lug 91 which hooks inside the receiver and secures it in its detachable connection to the grip member. The forward ends of the grip member and receiver are detachably connected together by the bolt 92 which is threaded into the barrel 93. The trigger guard 94 is welded to the grip member.

In the modification shown in Fig. 14, the forward ends of the receiver 96 and grip member 97 are held together by the trigger guard 98 which is pivotally connected by the pin 99 to the grip member. The upper end of the trigger guard has a hook or lug 100 which slips over the receiver, as shown in full lines. The opposite end of the trigger guard has a hole which coincides with another hole in the grip member and through

which a removable pin 101 is inserted to hold it in the position shown in full lines. When the pin is removed and the trigger guard is swung to the position shown in broken lines, the grip member may be detached from the receiver. The trigger guard may be made of spring steel and the hook 100 so located with respect to the engaging lip of the receiver that a constant spring tension is applied to the coupling when the trigger guard is in the position shown in full lines.

In the pistol of Fig. 1 the barrel and receiver are removed from the grip member by removing the coupling member in the manner illustrated in Fig. 4 and moving the barrel and receiver forward to uncouple the connection of the lug 27 with the edge portion 7. To uncouple the receiver 70 from the grip member 75 in the modification of Fig. 12, the coupling member 72 is swung on the pivot 76 until the lug 74 is clear of the rearward wall 74' of the receiver and the barrel is moved forward until the lug 27 (Fig. 11) is disconnected from the edge 7 (Fig. 7). In the modification of Fig. 13, after the bolt 92 is removed the receiver is pushed forward to remove it from connection with the lug 91.

I claim:

1. In an autoloading pistol having a barrel attached to a receiver and a grip member with means for mounting the hammer, trigger and magazine therein, the improvement which comprises means for removably attaching the front end of the grip member to the receiver including a lip on the receiver which engages a lug on the grip member, and means for removably attaching the rear end of the grip member to the rear end of the receiver which applies a constant resilient pressure preventing looseness therebetween.

2. In an autoloading pistol having a barrel attached to a receiver and a grip member with means for mounting the hammer, trigger and magazine therein, the improvement which comprises means for removably attaching the front end of the grip member to the receiver including a lip on the receiver which engages a lug on the grip member, a removable coupling member for attaching the rear end of the grip member to the rear end of the receiver which has a spring therein for applying a constant pressure therebetween preventing looseness, a hammer, means for operating the hammer by said spring, and a latch for securing the coupling member to the grip member in which the spring holds the latch locked.

3. In an autoloading pistol having a barrel attached to a receiver and a grip member with means for mounting the hammer, trigger and magazine therein, the improvement which comprises means for slidably attaching the front end of the grip member to the receiver, a breech bolt operable in the receiver, and means for removably attaching the rear end of the grip member to the rear end of the receiver which comprises a bar which is removably inserted through the grip member and receiver for stopping the rearward travel of the breech bolt and a latch for removably securing said bar in its inserted position.

4. An autoloading pistol of the blow-back type which comprises a tubular receiver attached to a barrel, a breech bolt operable in the receiver, a grip member formed of thin metal as an integral structure, means for removably attaching the grip member to the receiver front and rear, the means for attaching the grip member to the receiver at the rear comprising a block for the rearward travel of the breech bolt, said receiver comprising undercuts for the cartridges to enter from the magazine and for the swing of the hammer, said undercuts leaving lips on which the attaching means of the grip member make contact, and resilient means for maintaining constant pressure between the receiver and grip member to eliminate looseness.

5. In an autoloading pistol having a barrel attached to a receiver and a grip member with means for mounting the hammer, trigger and magazine therein, the improvement which comprises a pivoted trigger guard with an engaging lug thereon which engages the receiver to removably attach the front end of the grip member to the receiver, and means for removably attaching the rear end of the grip member to the rear end of the receiver which applies a constant resilient pressure preventing looseness therebetween.

6. In an autoloading pistol having a barrel attached to a receiver and a grip member with means for mounting the hammer, trigger and magazine therein, the improvement which comprises means for removably attaching the front end of the grip member to the receiver which applies a constant yielding pressure preventing looseness between the grip member and receiver at the front, and means for removably attaching the rear end of the grip member to the rear end of the receiver which applies a constant resilient pressure preventing looseness therebetween.

7. In an autoloading pistol having a barrel attached to a receiver and a grip member with means for mounting the hammer, trigger and magazine therein, the improvement which comprises means for removably attaching the front end of the grip member to the receiver, a vertically disposed hole in the rear end of the receiver, a coincident hole in the rear end of the grip member, a coupling member removably attached to the grip member having a pivotally connected bar, said bar being insertable through said coincident holes, said coupling member being pivotal in the grip member with respect to said inserted bar and having a lug which swings into coupling engagement with said receiver, whereby the rear end of the receiver is detachably connected to the grip member.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
956,431	Schmeisser	Apr. 26, 1910
2,136,396	Savage	Nov. 15, 1938

FOREIGN PATENTS

Number	Country	Date
160,771	Great Britain	Feb. 2, 1922