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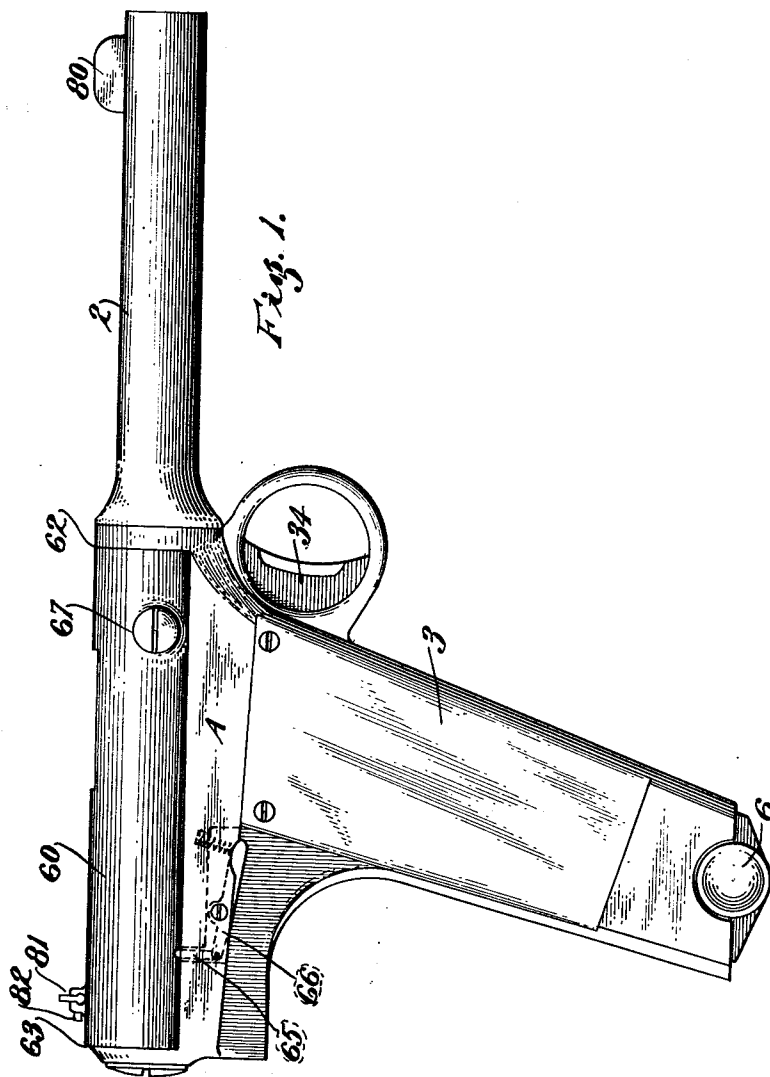
J. H. HINES

1,460,672

AUTOMATIC PISTOL

Filed Jan. 11, 1922

3 Sheets-Sheet 1



INVENTOR  
JOSEPH H. HINES

BY *Chas. E. Townsend*  
ATTY.

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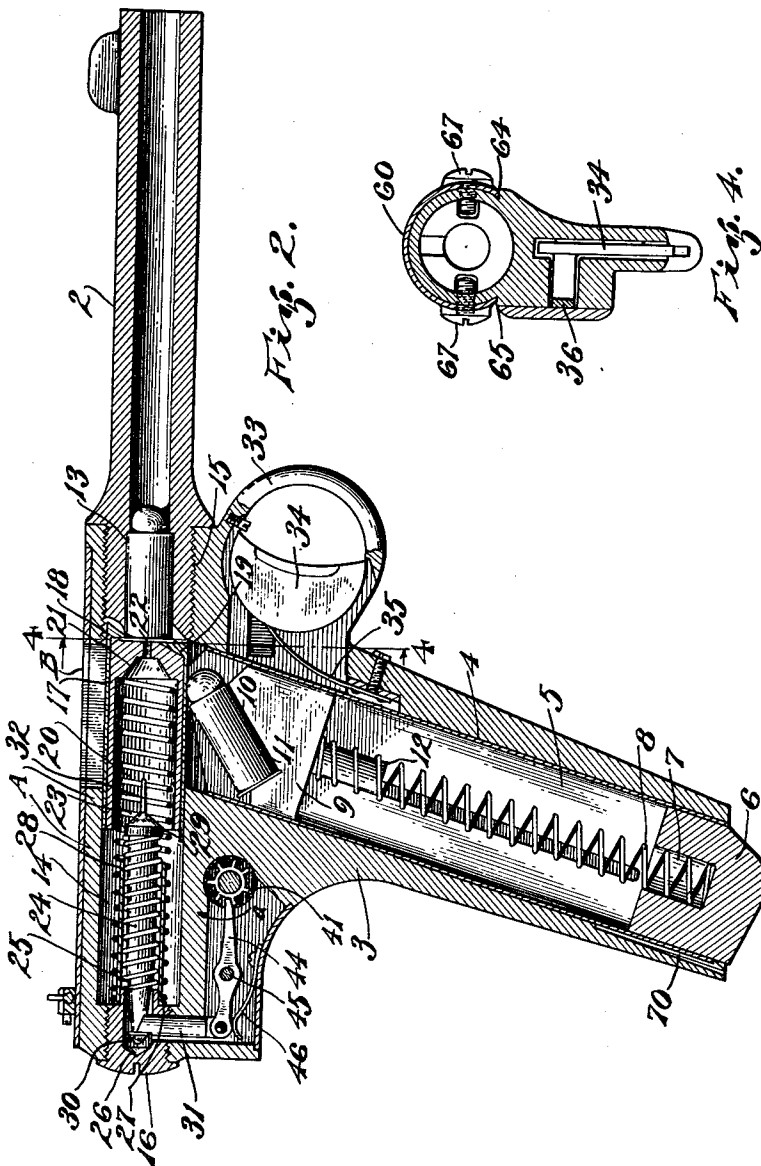
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3 Sheets-Sheet 2



INVENTOR  
JOSEPH H. HINES

By Chas. E. Leonard

ATTY.

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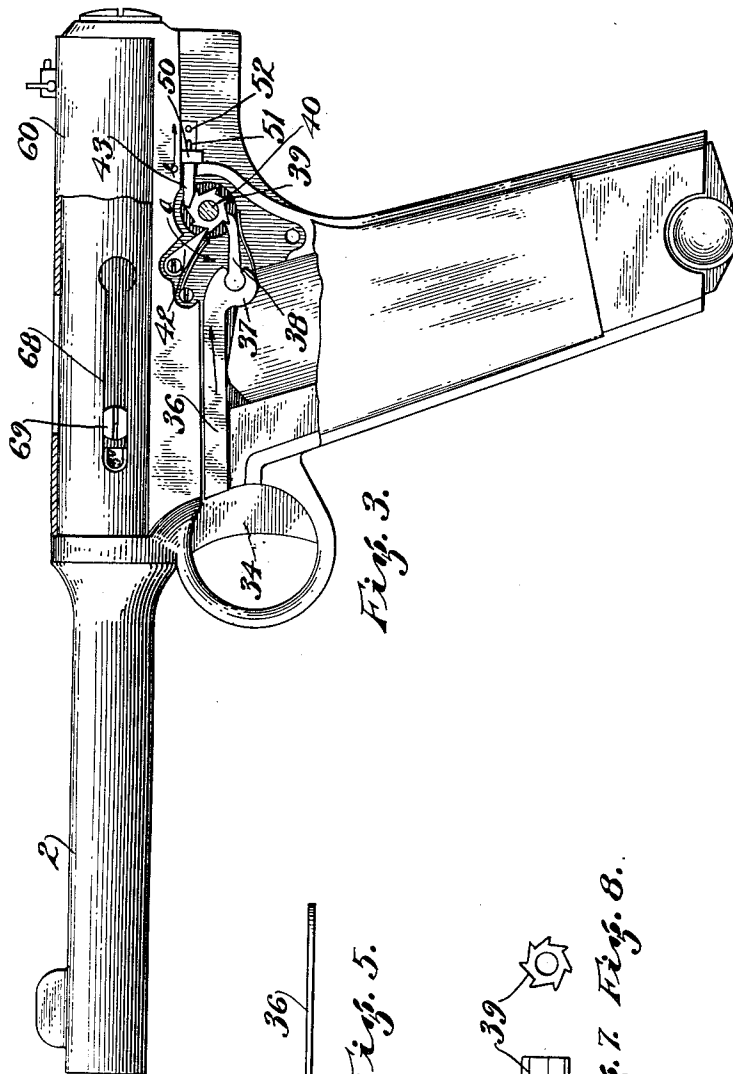
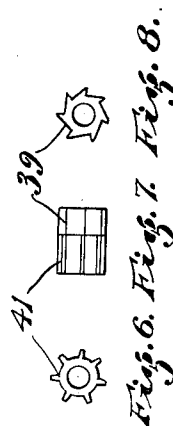
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AUTOMATIC PISTOL

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3 Sheets-Sheet 3



INVENTOR

JOSEPH H. HINES

BY Chas. E. Townsend  
ATTY.

## UNITED STATES PATENT OFFICE.

JOSEPH H. HINES, OF AUBURN, CALIFORNIA.

## AUTOMATIC PISTOL.

Application filed January 11, 1922. Serial No. 528,474.

*To all whom it may concern:*

Be it known that I, JOSEPH H. HINES, a citizen of the United States, residing at Auburn, in the county of Placer and State of California, have invented new and useful Improvements in Automatic Pistols, of which the following is a specification.

This invention relates to a pistol, and especially to an automatic type of pistol, in which the recoil of the explosive charge is employed to eject the fired cartridge and to reload.

The objects of the present invention are to generally improve and simplify pistols of the character described; to design and arrange the recoil mechanism in such a manner that exterior moving parts will be entirely avoided; to provide a novel form of breech block movable interior of the stationary breech; to provide a firing pin having a guide and support independent to the breech block and in conjunction with the firing pin a trigger and an intermediate actuating mechanism. Further objects will hereinafter appear.

The invention consists of the parts and the construction, combination and arrangement of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Fig. 1 is a side elevation of the pistol.

Fig. 2 is a central, vertical, longitudinal section through the pistol.

Fig. 3 is a side elevation partly broken away and partly in section; said side elevation being taken from the opposite side to that shown in Fig. 1.

Fig. 4 is a cross section on line 4—4, Fig. 2.

Fig. 5 is a plan view of the trigger.

Fig. 6 is an end view of one end of a ratchet wheel employed in conjunction with the trigger mechanism.

Fig. 7 is a side elevation of the same ratchet wheel.

Fig. 8 is an end view of the opposite end of the ratchet wheel.

Referring to the drawings in detail, and particularly to Figs. 1 and 2, A indicates the breech of a pistol, 2 the barrel, and 3 the handle or stock. The stock is in this instance provided with an angularly disposed interior chamber or pocket 4, which is provided for the reception of a cartridge clip 5. The clip employed is of more or less standard construction as it consists of an ex-

terior casing which is adapted to fit the pocket 4. The lower end of the casing is closed by a plug 6 which is recessed as at 7 to receive a helical spring 8. Slidably mounted in the shell or casing of the clip is a movable head member 9, and formed on its upper end is a recess or seat 10 for the reception of one or more superposed cartridges as indicated at 11. The lower end of the head member 9 is provided with a pin 12, and interposed between the plug 6 and the head member 9 is the helical spring 8 which gradually advances the head member and thereby automatically feeds the cartridges one by one into the cartridge chamber 13 of the barrel, as will hereinafter be described. The pin 12, together with the recess 7, serves as a guide for the spring 8 and thereby maintains the same in normal alignment. Formed within the breech A is a cylindrical chamber 14. This chamber is arranged in alignment with the barrel and is concentric with relation thereto. The forward end of the chamber is closed by the barrel 2, which is screwed into the breech as shown at 15, the rear end of the chamber being closed by a screw plug 16. Slidably mounted in the breech chamber 14 is a breech block 17. This breech block carries an extractor 18 of standard construction and an ejector 19. The breech block proper is turned out to form a central chamber 20, a seat 21 and a small central orifice 22, which is adapted to receive the firing pin, which will hereinafter be described. The chamber 20 serves two functions, first that of a guide for a recoil spring 23, and secondly that of a seat and guide for a firing pin generally indicated at 24. The breech block and the firing pin are movable independently of each other and are both actuated by separate springs, the breech block by the spring 23, and the firing pin by a spring 25. The screw plug 16 is chambered, as at 26, to receive the rear end of the firing pin when this is retracted. The forward end of the plug is provided with an annular shoulder 27, and this in turn supports a thimble or sleeve 28, which serves two functions, first that of a seat and guide for the main recoil spring 23, and secondly that of a guide for the firing pin and the spring 25 actuating the same.

The firing pin is provided with two head members, one at the forward end, as indicated at 29, which is adapted to engage the

seat 21, and one at the rear end, as indicated at 30, which is adapted to cooperate with a latch pin 31. The head member 29 carries a pin 32, which is adapted to project through the orifice 22 and thereby strike the head of the cartridge during forward projection.

Formed on the forward end of the breech is a trigger guard 33, and mounted interior thereof is a trigger 34, which is normally held in a forward position by means of a trigger spring 35. The trigger proper is segmental in shape and is provided with an offset rearwardly extending bar 36 (see Figs. 3 and 5), which terminates in a head 37. Pivotaly mounted in the head is a pawl 38, and actuated thereby is a ratchet wheel 39, which is turnably mounted on a pin 40. The ratchet wheel is illustrated in detail in Figs. 6, 7 and 8. One end of the ratchet wheel is provided with teeth, such as indicated at 39, (see Figs. 7 and 8) while the opposite end is provided with spur like teeth as indicated at 41. The teeth 39 are engaged by the pawl 38, and also by a pair of secondary pawls indicated at 42 and 43. The pawl 42 is spring actuated as shown in Fig. 3, and is merely provided for the purpose of locking the ratchet against rotation, except in one direction. The pawl 43 is a sliding pawl and will hereinafter be referred to as a safety pawl as it is only employed for the purpose of locking the ratchet against rotation when it is desired to prevent operation of the trigger. By referring to Fig. 2, it will be seen that the opposite end of the ratchet 39 is provided with spur teeth, such as shown at 41, and that these teeth are adapted to successively engage a rocker arm 44 pivotaly mounted within the breech as illustrated at 45. The opposite end of the rocker arm carries the latch pin 31, previously referred to, and this latch pin, together with the rocker arm, is normally held in the position shown in Fig. 2 by means of a spring 46.

The operation of the mechanism so far described will be substantially as follows: If it is desired to fire the pistol, it will only be necessary to pull the trigger 34. (See Figs. 2 and 3.) A rearward pull on the trigger will force the bar 36 in the direction of the arrow and will therefore advance the pawl 38 in such a direction that the ratchet 39 will be partially rotated in the direction of arrow *a*. During such rotation, one of the spur teeth 41 of the ratchet will engage the free end of the rocker arm 44, and the latch pin 31 will therefore be retracted with relation to the head 30 of the firing pin. The firing pin will thus be released and will instantly be projected by the spring 25, thus permitting it to impinge against the head of the cartridge with sufficient force to fire the same. The force exerted by the explosion of the charge in the cartridge is such that the breech block, together with the firing pin, will re-

coil, that is the breech block, together with the firing pin, will slide rearwardly in the breech block chamber to a point where the head 30 will ride over the latch pin and become interlocked with relation to the same. During this rearward movement of the firing pin and the breech block, the fired cartridge will be ejected in the usual manner, and during the forward movement, a fresh cartridge will be projected into the breech chamber and forced into the barrel during the forward movement of the breech block; this forward movement being caused by the compression of the main recoil spring 23. The extracted or fired cartridge is projected through a slot or opening B formed in the upper side of the breech and the fresh cartridge will of course enter the breech chamber at a point directly below the opening B as the upper end of the pocket 4 opens into the breech chamber.

The pistol is provided with one safety latch such as indicated at 43. One end of the latch is adapted to engage the ratchet teeth 39, and the opposite end is provided with a head 50, which projects through a slot in the breech block. When the safety latch assumes the position shown in Fig. 3, rotation of the ratchet will be prevented as the point 43 will engage the teeth and thereby prevent rotation of the ratchet and consequently movement of the trigger. If it is desired to release the trigger, it is merely necessary to grasp the head 50 and pull the member 43 in the direction of arrow *b*. This brings the point 43 out of engagement with the ratchet teeth and thereby permits rotation of the same and normal operation of the trigger. The head member 50 is provided with a spring projection 51, which is engageable with recesses 52 formed in the side of the breech; the spring member 51 and the recesses 52 serving as a pawl and rack to lock the safety catch, either in closed or open position.

To facilitate loading of the pistol when a new clip is inserted, it is necessary to retract the breech block so that the uppermost cartridge in the clip can be transferred to the breech block chamber, and then advanced to the cartridge chamber 13 in the barrel. To accomplish this an exterior sliding breech shell has been provided. This shell is indicated at 60 and covers the entire upper position of the breech. The breech shell, (see Figs. 1 and 3,) extend from the barrel, or the point indicated at 62, to the rear end as shown at 63 and then extends down the side of the breech to the points indicated at 64 and 65. The breech shell, as previously stated, is slidably mounted on the breech proper and serves two functions, first that of retracting the breech block to permit insertion of the first cartridge or shell, and secondly that of retracting the

breech block to permit quick and ready removal of the barrel 2 for cleaning, inspection or otherwise. The breech shell is normally locked against retraction by means of a latch 65 and a lever 66, whereby it is actuated. The latch 65 normally engages a notch in the lower edge of the breech shell and thereby locks the same against endwise movement, but the latch may be released by depression of the lever 66 whenever desired.

For the purpose of forming a connection between the breech shell and the breech block which will permit the breech block to operate independently of the breech shell, a pair of screws 67 has been provided. These screws are carried by the breech shell, as shown in Figs. 1 and 4, and they project through slots 68 formed in opposite sides of the breech. The inner point of the screws engages the forward end of the breech block and will thus retract the breech block when the breech shell is pulled in a rearward direction. The points of the screws 67 however do not interfere with the normal operation of the breech block as the breech block will, during recoil action, slide backwardly in the breech chamber away from the screws. The slots 68 serve two functions: first that of permitting a connection to be formed between the breech shell 60 and the breech block when this is to be manually retracted, and secondly that of a guide for the breech block to prevent turning of the breech block during normal action. The breech block carries two screws as indicated at 69, one on each side. The heads of the screws project into the slots 68 and thus form guides for the breech block which prevent turning of the same; this being quite essential as the extractor and the ejector should always maintain a fixed position with relation to the barrel and the cartridge chamber formed therein.

From the foregoing description it can be seen that if it is desired to reload the pistol, it is only necessary to release the spring catch, indicated at 70, and to extract the empty cartridge clip by grasping the plug 6 and exerting a downward pull. The clip may then be reloaded and reinserted and the uppermost cartridge in the clip will engage the lower side of the breech block as indicated in Fig. 2. The uppermost cartridge must however be transferred to the cartridge chamber of the barrel before the pistol can function by recoil action. It is for this reason that the sliding breech shell 60 has been provided. This shell is normally stationary, but may be released by means of the lever indicated at 66. When thus released, it is only necessary to grasp the breech shell and exert a rearward pull. The points of the screws 67 will during this rearward pull engage the forward end of the breech block and the uppermost car-

tridge will thus project into the breech block chamber and will then be forced forwardly into the cartridge chamber 13 when the breech shell is released. The firing pin is retracted during this operation and in position to be fired; therefore if it is desired to fire the pistol, it will only be necessary to release the safety latch 43 and to pull the trigger. The force of the explosive charge will then cause the pistol to function in its normal manner, that is each discharge will cause the breech block, together with the firing pin, to recoil, thus causing the fired or empty shell to be retracted and discharged through the opening B, and secondly causes forward projection and reloading of a fresh or unfired shell.

The most important feature of the present invention is the simplicity of design. It should be noted that all moving parts are contained within the breech, thus doing away with all exterior moving parts. The barrel and the breech proper are stationary and the barrel may readily be removed at any time required for cleaning, inspection or repair, by merely unscrewing the same with relation to the forward end of the breech. A standard form of cartridge clip may be employed in conjunction with this pistol and as the remaining parts of the mechanism are entirely enclosed and hidden, it can be seen that breakage, disarrangement or loss of parts should be entirely avoided. The front sight may be fixed or adjustable as indicated at 80, and similarly the rear sight as indicated at 81. The rear sight is in this instance carried by the breech shell and is laterally adjustable; the sight proper being secured when adjusted by means of a small set screw 82.

While certain features of the present invention are more or less specifically illustrated, I wish it understood that various changes in form and proportion may be resorted to within the scope of the appended claims, similarly that the materials and finish of the several parts employed may be such as the experience and judgment of the manufacturer may dictate or various uses may demand.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

1. In a pistol of the character described a breech, a stationary barrel carried thereby, a chamber formed within the breech and in alignment with the barrel, a hollow breech block slidably mounted in said chamber, a firing pin in said chamber guided and slidable independently of the breech block, separate springs arranged interiorly of the breech block and exteriorly of the firing pin for actuating the said parts, and a stationary guide common to both springs.

2. In a pistol of the character described

a breech, a stationary barrel carried thereby, a chamber formed within the breech and in alignment with the barrel, a hollow breech block slidably mounted in said chamber, a firing pin in said chamber guided and slidable independently of the breech block, a recoil spring cooperating with the breech block, a second recoil spring cooperating with the firing pin, and a stationary common guide for both of said springs, located exteriorly of the firing pin and interiorly with respect to the breech block.

3. In a pistol of the character described a breech, a stationary barrel carried thereby, a chamber formed within the breech and in alignment with the barrel, a hollow breech block slidably mounted in said chamber, a firing pin in said chamber guided and slidable independently of the breech block, a recoil spring cooperating with the breech block located interiorly of the same, a second recoil spring cooperating with the firing pin and arranged exteriorly thereof, a stationary common guide for both of said springs interposed between the same and arranged exteriorly of the firing pin, means permitting simultaneous rearward movement of the breech block and firing pin, said means permitting independent movement of the firing pin and breech block in a forward direction, and means for locking the firing pin against forward projection.

4. In a pistol of the character described a breech, a stationary barrel carried thereby, a chamber formed within the breech and in alignment with the barrel, a hollow breech block slidably mounted in said chamber, a firing pin in said chamber guided and slidable independently of the breech block, a recoil spring cooperating with the breech block, a second recoil spring cooperating with the firing pin and arranged exteriorly of the same, a stationary common guide for both of said springs and interposed between the same, means permitting simultaneous rearward movement of the breech block and firing pin, said means permitting independent movement of the firing pin and breech block in a forward direction, means for locking the firing pin against forward projection, and a trigger actuated mechanism for releasing said lock.

5. In a pistol of the character described a breech, a stationary barrel carried thereby, a cylindrical chamber formed in the breech concentric and in alignment with the barrel, a hollow cylindrical shaped breech block slidably mounted in the chamber, a firing pin concentric with the breech block and the chamber, and also slidably mounted in the chamber, a stationary sleeve like guide at the rear end of the chamber for the reception of the firing pin when retracted and arranged exteriorly of the same, a recoil spring surrounding the pin

and contained within the guide, and a second recoil spring exterior of the guide and engaging the breech block interiorly thereof.

6. In a pistol of the character described a breech having an elongated cylindrical chamber formed therein, a barrel carried by the breech and in alignment with said chamber, a hollow breech block slidably mounted in said chamber, said breech block being elongated and cylindrical in shape and having a central chamber formed therein, which is open at the rear end, a head member on the forward end of the breech block having a seat and a central orifice formed therein, an extractor and an ejector carried by the breech block and movable in unison therewith, a firing pin interior of the breech block, a head on the firing pin adapted to engage the seat in the breech block and having a pin on its forward end which is adapted to project through the central orifice in the head of the breech block, a stationary sleeve like guide at the rear end of the breech chamber forming a guide for the firing pin and arranged exteriorly thereof, a recoil spring interior of said guide and engaging the head of the firing pin, and a second recoil spring exterior of said guide and engaging the head of the breech block.

7. In a pistol of the character described a breech having an elongated cylindrical chamber formed therein, a barrel carried by the breech and in alignment with said chamber, a hollow breech block slidably mounted in said chamber, said breech block being elongated and cylindrical in shape and having a central chamber formed therein, which is open at the rear end, a head member on the forward end of the breech block having a seat and a central orifice formed therein, an extractor and an ejector carried by the breech block and movable in unison therewith, a firing pin interior of the breech block, a head on the firing pin adapted to engage the seat in the breech block and having a pin on its forward end which is adapted to project through the central orifice in the head of the breech block, a stationary sleeve like guide at the rear end of the breech chamber forming a guide for the firing pin and arranged exteriorly thereof, a recoil spring interior of said guide and engaging the head of the firing pin, a second recoil spring exterior of said guide and engaging the head of the breech block, a head member on the rear end of the firing pin, a latch pin engageable therewith, and a trigger carried by the breech adapted to release the latch pin.

8. In a pistol of the character described a breech having an elongated cylindrical chamber formed therein, a barrel carried by the breech and in alignment with said cham-

ber, a breech block slidably mounted in said chamber, said breech block being elongated and cylindrical in shape and having a central chamber formed therein which is open  
 5 at the rear end, a head member on the forward end of the breech block having a seat and a central orifice formed therein, an extractor and an ejector carried by the breech block and movable in unison therewith, a  
 10 firing pin interior of the breech block, a head on the firing pin adapted to engage the seat in the breech block and having a pin on its forward end which is adapted to project through the central orifice in the head  
 15 of the breech block, a sleeve like guide at the rear end of the breech chamber forming a guide for the firing pin, a recoil spring interior of said guide and engaging the head of the firing pin, a second recoil spring exterior of said guide and engaging the head  
 20 of the breech block, a head member on the rear end of the firing pin, a latch pin engageable therewith, a trigger carried by the breech, a sliding bar forming an extension  
 25 of the trigger, a pawl pivotally mounted on said bar, a ratchet wheel adapted to be partially rotated by said pawl, a rocker arm pivotally mounted in the breech and connected at one end with the latch pin, and  
 30 an extension on said rocker arm engageable with the teeth of the ratchet wheel.

9. In a pistol of the character described a breech, a cylindrical elongated chamber formed therein, a barrel carried by the  
 35 breech and in alignment with said chamber, a pair of openings formed in the breech one

for the expulsion of cartridges and one for the admission of cartridges, a cylindrical breech block slidably mounted in the chamber and normally forming a closure for the  
 40 last named openings, an extractor and an ejector carried by the breech block, means for securing the breech block against rotation within the breech chamber, recoil  
 45 springs arranged interiorly of the breech block and exteriorly of the firing pin, and a stationary guide sleeve disposed exteriorly of the firing pin and interposed between the said springs.

10. In a pistol of the character described  
 50 a breech, a cylindrical elongated chamber formed therein, a barrel carried by the breech and in alignment with said chamber, a pair of openings formed in the breech, one  
 55 for the expulsion of cartridges and one for the admission of cartridges, a cylindrical breech block slidably mounted in the chamber and normally forming a closure for the last named openings, an extractor and an  
 60 ejector carried by the breech block, a pair of slots formed in opposite sides of the breech and communicating with the chamber, a pair of pins carried by the breech block and projecting into said slots to secure  
 65 the breech block against rotation, a breech shell slidably mounted exterior of the breech, and a pair of pins carried thereby projecting through the slots in the breech and engageable with the forward end of the breech block.

JOSEPH H. HINES.