

Nov. 13, 1934.

J. NICKL

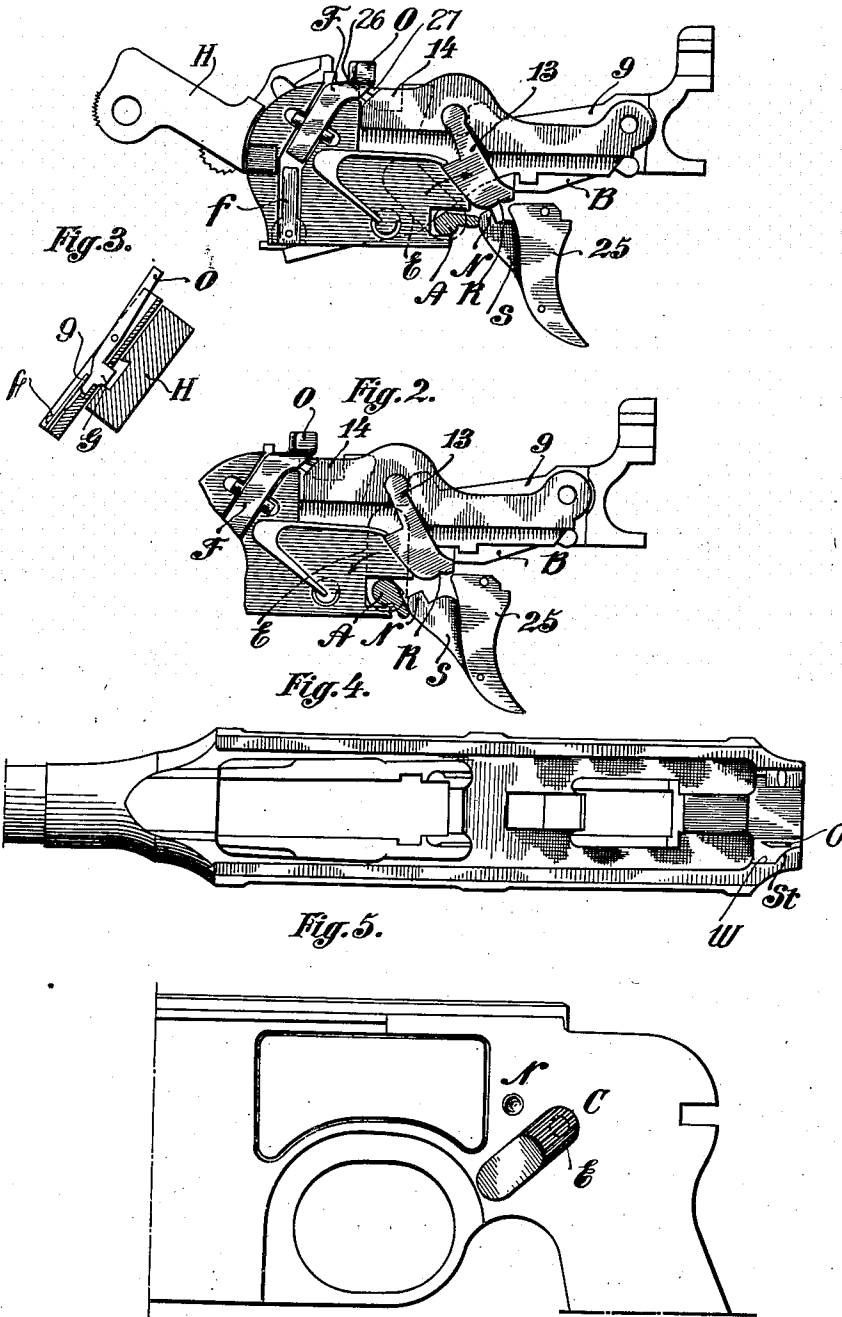
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QUICK FIRING PISTOL

Filed Nov. 17, 1931

3 Sheets-Sheet 1

Fig. 1.



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Nov. 13, 1934.

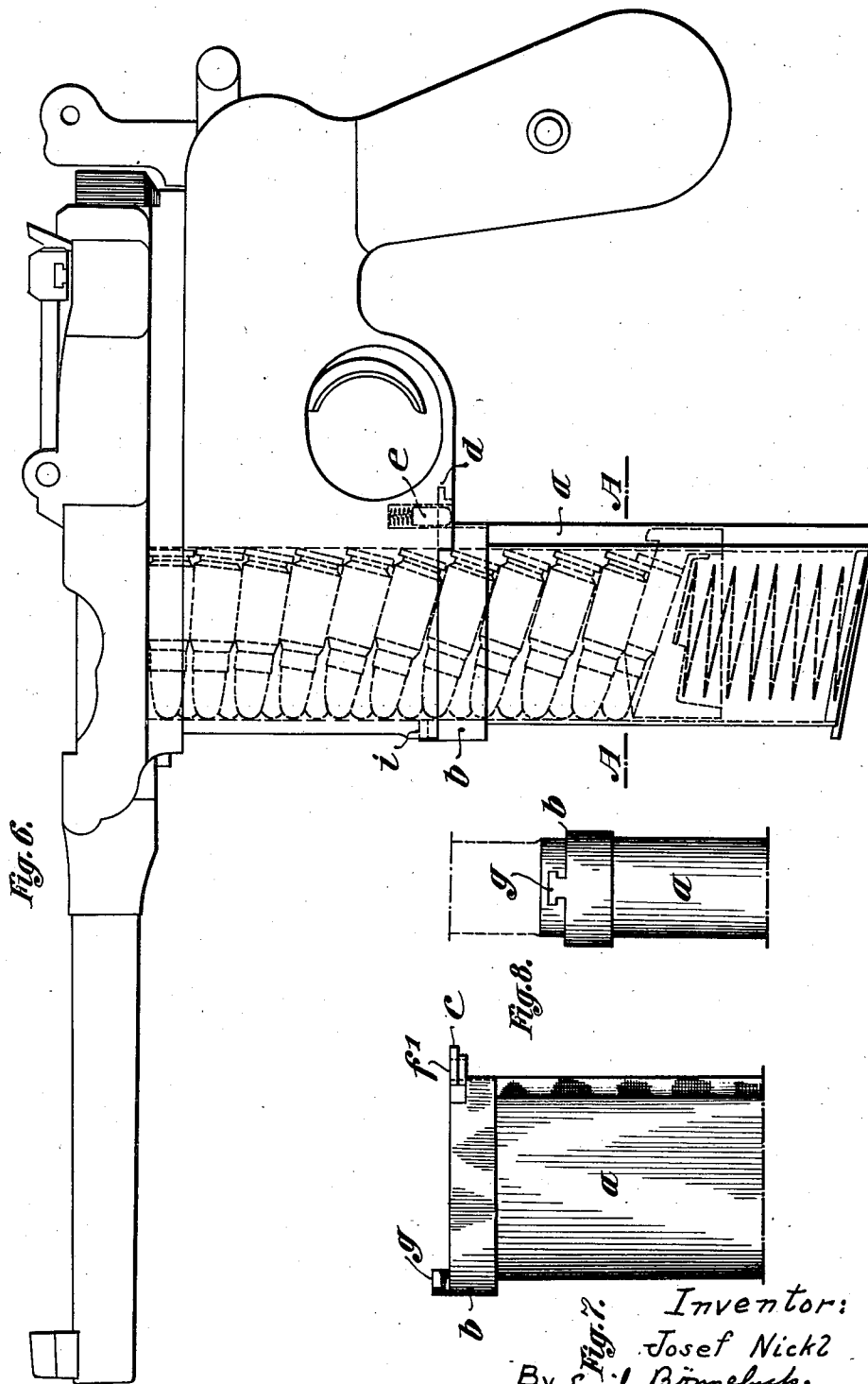
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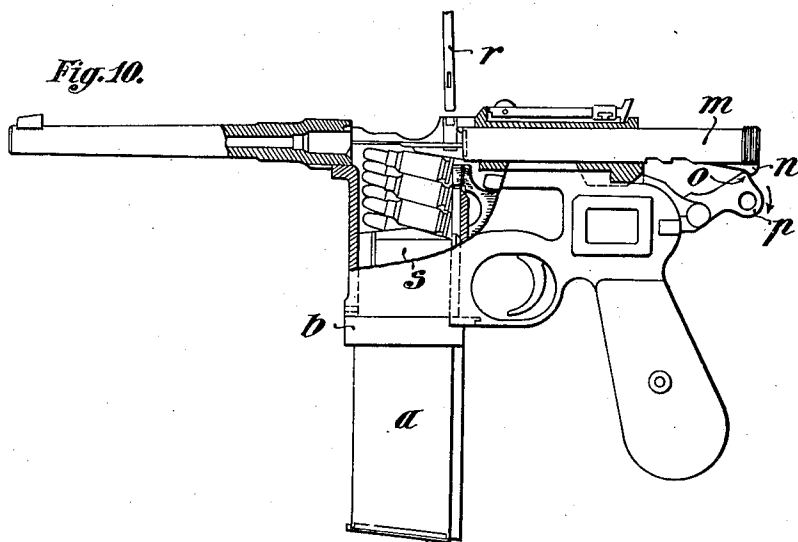
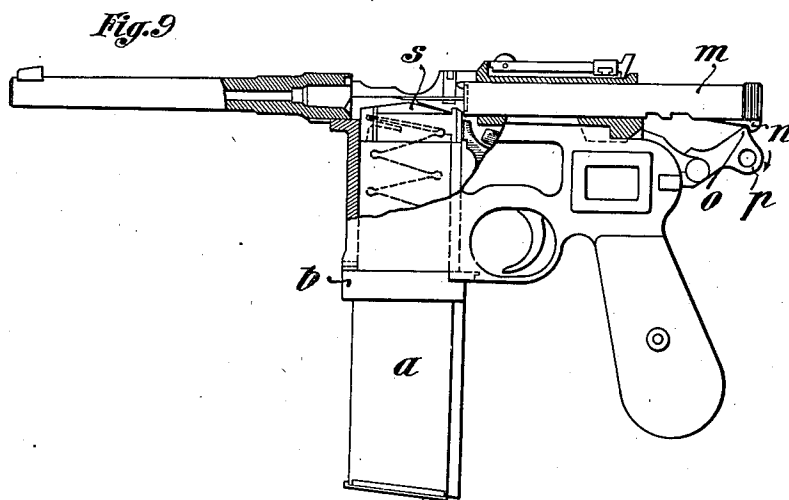
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QUICK FIRING PISTOL

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3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

1,980,874

QUICK-FIRING PISTOL

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Application November 17, 1931, Serial No. 575,618
 In Germany November 25, 1930

3 Claims. (Cl. 42—69)

My invention relates generally to automatic breech-loading firearms and more especially to a quick-firing pistol of the hammer-type adapted to be changed and set from "single" discharge firing to "series" firing and vice versa, a chief feature of the invention also residing in the provision of means for connecting an attachable supplemental cartridge-magazine serving to increase the firing capacity, otherwise limited by the usual stationary cartridge-magazine, and means for locking the breech-bolt in its rearmost position for purposes hereinafter described.

Accordingly a setting lever is provided, in conformity with the present invention at a suitable point on and outside of the handle or grip so as to be adapted, upon actuation, to disengage or release the means provided for preventing "doubling" at each single operation of the trigger, by removing the hammer-locking lever from the path of the hammer. This is accomplished by the said setting lever acting to shift, by means of a projection or nose, a spring-controlled member provided on the trigger for locking a rear pawl, so that the said spring controlled locking member will lie below the said pawl and will be prevented from returning to its former position, while the coupling bolt, on its return movement upon firing, will cause a nose of the said locking member to catch into a dwell of the pawl, whereby the pressure exerted on the trigger will be transmitted to the hammer-locking lever by means of the said locking member and the sear pawl, and the latter will be kept off the path of the hammer as long as pressure on the trigger prevails.

In order that in case of "series"-firing the hammer shall not be caused to fire shots except when the gun is actually desired to so discharge, I have provided a catching lever which is quite independent of the hammer-locking lever and adapted to be turned and to lock the hammer, when the breech is open, by engaging with one of its extremities into a notch of the cocked hammer, while the other end thereof will project into the path of the barrel or the breech casing, so that the said casing when returning into the closing position, will act to disengage the said catching lever from the hammer and firing can occur.

Another novel feature of that class of automatic pistols falling within the scope of my invention and provided with a supplemental cartridge-magazine for the purpose of increasing the stock of available cartridges, for example, from 10 to 20 cartridges, resides in the provision of

means for locking the breech-bolt in its rearmost position immediately by the agency of the hammer. To this end the breech-bolt is provided at its rear end with a shoulder adapted to cooperate with the hammer for the locking purpose and to be released by manually moving down the hammer about its pivot so as to disengage the same from the shoulder. This locking means is particularly useful in preventing the breech-bolt from flying forwards into the closed position upon removal of the first cartridge holder.

Other detailed features of the invention will be hereinafter specifically described and then pointed out in the claims. I shall now proceed to describe the invention more in detail with reference to the accompanying drawings forming a part of this specification and showing, for purposes of exemplification, a preferred form and manner in which the invention may be embodied and practised, but without limiting the claimed invention to such illustrative instance or instances:—

Figure 1 is a right-hand elevation, partly in section, of the lock-mechanism of an automatic hammer-operated breech-loading pistol, with the setting lever set for series-firing or firing several shots in succession; Figure 2 is a similar view showing the parts in position for firing a single shot; Figure 3 is a detail view of parts to be referred to; Figure 4 is a view in top plan of the breech casing constructed according to the present invention; Figure 5 is a view in left-hand side elevation of the part of the pistol on which the setting lever is mounted; Figure 6 is a view in left-hand side elevation of the pistol with the supplemental cartridge-magazine attached thereto; Figure 7 is a side elevation and Figure 8 an end elevation of the supplemental cartridge-magazine; Figure 9 is a view somewhat similar to Figure 6, but taken on a reduced scale and with the breech-bolt locked in its rearmost position; and Figure 10 is a similar view of the pistol with the magazine fitted with cartridges.

The automatic pistol herein shown is provided, as usually, with a lock mechanism for preventing the release of the hammer after each single discharge, until the trigger has been released and is again operated, so that in case of a continued pressure on the trigger several shots in succession will not be fired, since at the commencement of the rearward travel of the breech casing the sear pawl will be forced rearwards by a part of the coupling bolt projecting from the lower part of the lock so as to disengage the pawl from the trigger. When the casing and

breech-bolt have finished their forward movement and the trigger is not released, the sear pawl will not project above the rear top nose of the trigger, but will lie behind the same, so that the trigger cannot actuate the said pawl. As soon, however, as the trigger is released, the sear pawl will project over and above the top nose of the trigger and the latter thus can operate the pawl and the sear or lever co-operating therewith.

With the above described known construction of the usual automatic pistol, therefore, the release of the hammer is prevented after each single discharge so that also the discharge of two or more cartridges at each single operation of the trigger will be prevented, until the trigger has been released and is again operated.

I shall now proceed to describe the means provided according to my invention for the purpose of transposing and setting the pistol from "single" discharge to "series", multiple or continuous firing.

As will be best seen in Figure 5 a setting lever E is provided on the left-hand side of the upper part of the grip or handle of the pistol. When the lever E is set to overlie the nib N, that is the normal position, the pistol will operate as a usual automatic firearm, that is to say, after each discharge the trigger must be released and again operated for firing the next shot. The locking mechanism provided to prevent firing of shots in succession, as above described, constitutes a safeguard against discharging all cartridges of the magazine at a single, continued operation of the trigger.

When, however, the setting lever E is set to overlie the nib or mark R, that is, the continuous or "series" firing position, the described lock mechanism for preventing successive discharges will be disengaged. Consequently shots will be fired in immediate succession as long as a pressure is exerted on the trigger, and firing will be stopped upon release of the trigger.

When the setting lever E is manually turned to move from N to R, that is the continuous firing position, the arm A of the shaft of the lever E will shift the locking member S provided in the trigger 25, to lie below the lower end of the sear pawl 13, see Figure 1, and to secure the same in this position. Upon firing a shot the recoiling coupling bolt B (only partially shown) will act to drive back the sear pawl 13 until the nose N of the locking member S catches into the dwell R of the pawl, whereupon the parts will positively and immovably remain in engagement, until the trigger is released and firing discontinued. Accordingly the pressure on the trigger transmitted by the nose N of the locking member S to the pawl 13 and the hammer-locking lever 14 by means of a projection 27 of the handle H at the surface 26, will shift the lever 14 out of the path of the hammer and remain, therefore, out of engagement with the hammer during the firing of several shots in succession.

When the setting lever E is returned to the normal or N-position the locking member S resiliently mounted in the trigger by means of a spring (not shown), will be inactive, that is to say, prevented from contact with the sear pawl 13. It will thus be seen that the arrangement and means by which the setting lever E will cause, in case of and during the firing of a series of shots in immediate succession, the locking member to remain permanently in contact or engagement with the sear pawl, further will transmit

the pressure exerted on the trigger, onto the hammer-locking lever and lift the latter, so that the hammer cannot be locked in cock-position and consequently a plurality of successive shots are intentionally fired, furthermore the resetting of the lever E to its normal or N-position will return the pistol to the condition of preventing the discharge of two or more cartridges in immediate succession at each single operation of the trigger, constitute the main feature of my invention. The adaptation to "series"-firing or discharging several cartridges in immediate succession without releasing the trigger, necessitates, in addition to that, the provision of a means or arrangement for locking the hammer in its open position brought about by the recoiling of the breech-bolt upon firing, for so long a time until the latter is automatically locked in its closed position again.

The locking of the automatic pistol is completed before the barrel has fully returned to its firing position. Just this peculiarity of the pistol is utilized according to the present invention, in providing a catching lever F, see Figures 1, 2 and 3, for locking the open hammer immediately upon the firing of a shot. The said lever F is entirely independent of the hammer locking lever 14 and adapted to release the hammer in the last moment of the movement of the barrel after the breech has been closed, whereupon the hammer is adapted to be released for the discharge of a cartridge.

As will be seen in Figure 4, the barrel casing is shaped at its rear end to form a curved face St for controlling purposes. The catching lever F in the lock casing 9 shown in Figure 1 and Figure 2 is mounted and adapted to perform a short movement about its pivoted axis in a plane perpendicular to the plane of the Figures 1 and 2. A flat spring f is adapted to retain the catching lever F with pressure in its bearing or seat and to cause the nose G of the lever to catch into a lateral notch of the hammer, see Figure 3, the lug at the one end of the catching lever F, projecting into the curved face St of the barrel casing, while the catching nose G at the other end of the lever F projects into the said lateral notch or recess of the hammer.

The operation of the several parts of my improved automatic pistol has been so fully described in conjunction with the description of their construction that it seems unnecessary to give a detailed description of the operation of the pistol as a whole. It may be said, however, that, as regards the firing operation, when the barrel casing with the locked breech-bolt is in closed position, the catching nose G of the lever F will be outside of the path of the hammer due to the action of the curved face St of the barrel casing, consequently the hammer cannot effect the discharge of a cartridge except when the barrel casing occupies its closed position and the pistol is locked.

Upon firing, the barrel casing, that is, the breech-block or bolt carrier, is moved rearward to open the breech so that the released breech bolt will fly back and the hammer be cocked. Due to the movement of the barrel casing the wide portion W of the curved face St will be placed in front of the lug O of the catching lever F. As this position of the curved face St provides room for the catching lever or its lug O to move therein, the hereinbefore mentioned flat spring will act to move the catching nose G of the lever F into the lateral notch or recess

of the hammer and to retain the same therein, until the breech-bolt reoccupies its forward position in the barrel casing and subsequently the barrel with the locked breech-bolt has been moved into closed position.

The above described arrangement is necessary for preventing the hammer from firing a shot except after the closing and locking of the breech.

As shown in Figure 6 the supplemental cartridge magazine *a* is provided at its upper end or orifice with an attaching collar *b* which is open to allow the cartridges to pass therethrough, and shaped to conform to the contour of the usual bottom plate of the main or stationary cartridge magazine so as to snugly fit in the latter. The collar *b* is equipped at its rear end with a guiding lug *c* adapted to engage in a recess provided in the guard *d* for the attachment of the usual closure or bottom plate of the stationary or main cartridge magazine, a bore or hole *f* being provided in the said lug *c* for the reception of the usual spring-controlled locking pin *e*. The forward end of the attaching collar *b* is equipped with a T-shaped member or hook *g* adapted to engage in a correspondingly shaped groove *i* of the end wall of the stationary cartridge magazine for the attaching purpose.

Normally the pistol is provided with the main or stationary cartridge magazine only the open end of which is closed by the said bottom plate provided with means similar to the described parts *b*, *c* and *f* of the collar, for the connecting purpose. If, however, it is desired to enlarge the capacity of the magazine by attaching a supplemental magazine thereto, as shown in Figure 6, it is necessary only to remove the bottom plate of the main magazine and to substitute therefor the supplemental magazine since the size or contour of the collar and the connecting means thereof are the same as those of the bottom plate.

At the rear end of the breech-bolt *m* there is provided a downward projecting nose or shoulder *n* forming a notch or dwell for the reception of a rounded edge or projection *o* at the top of the hammer *p*, as shown in Figures 9 and 10, whereby the breech bolt will be locked in its rearmost position.

In the construction of the pistol shown in the drawings for purposes of exemplification twenty cartridges are supposed to be accommodated in the two interconnected magazines by means of two cartridge-holders, and during the insertion of the two holders into the magazines the withdrawn breech-bolt will be locked by both the top plate *s* of the magazine acting to transfer the individual cartridges to the barrel, and the hammer *p* cooperating with the shoulder *n* of the breech-bolt. Upon the insertion of the cartridges of the first cartridge-holder *r* the locking of the breech-bolt by means of the top-plate or cartridge-carrier *s* ceases, while the engagement or cooperation of the locking parts *n* and *o* continues to keep the breech-bolt in locked condition.

After the removal of the first cartridge-holder the breech-bolt does not move into its closed position since the same is duly locked by the hammer. Thus the second cartridge-holder may be inserted, the cartridges thereof forced inward and the holder removed. In order to release the hammer from engagement with the breech-bolt a slight downward pressure is to be exerted on the former with the result that the breech-bolt will fly forward into its closed or foremost position after transferring a cartridge to the barrel. On firing a shot the locking action of the hammer is

overcome by the motive energy or momentum of the breech-bolt.

When I use herein the terms "single firing", "series firing" and "doubling", especially in the claims, it will be understood that the word "single" means the discharge of only one cartridge at each single operation of the trigger, the word "series" means a plurality of discharges or shots fired intentionally in rapid succession, as long as the pressure on the trigger is exerted and "doubling" means the firing of several shots in succession, but unintentionally.

By reason of the improved construction and arrangement of the parts which I have devised and described herein I am enabled to charge the firearm with the double amount of cartridges as compared with the cartridge supply in automatic pistols of the type hitherto constructed, simply by attaching a supplemental magazine to the stationary magazine in substitution for the bottom cover of the latter, without causing any interruption or disturbance of the charging operation, since means are provided for preventing the breech-bolt from returning to its foremost or closing position upon the removal of the first cartridge holder.

From the foregoing it is believed that the novel features of my invention will be readily understood and; therefore, further detailed description is deemed unnecessary. The advantages incident to my improved firearm will be apparent to those skilled in the art and it will be obvious that considerable variations may be made in the actual structure employed without departing from the true spirit of the invention and the spirit and scope of the appended claims.

What I claim is:—

1. A quick-firing pistol having a hammer, a hammer-locking lever, a trigger, means adapting said pistol for single discharges and series-discharges, said means, for the purpose of changing from "single" to "series", comprising means to prevent doubling, a setting lever provided on the handle and manually operable to release the means provided for the prevention of doubling, by holding the hammer-locking lever off the path of the hammer as long as a pressure is exerted on the trigger, a trigger-locking means, a sear pawl and a bolt, wherein, for the purpose of rendering the means provided for the prevention of doubling inoperative, the said setting lever can be set to place the trigger-locking member below the sear-pawl so that the said member will be locked and prevented from rearward movement, while the bolt recoiling upon the firing of the shot causes the sear pawl to engage the said locking member for locking the trigger.

2. A quick-firing pistol having a hammer, a hammer-locking lever, a trigger, means adapting said pistol for single discharges and series-discharges, said means, for the purpose of changing from "single" to "series", comprising means to prevent doubling, a setting lever provided on the handle and manually operable to release the means provided for the prevention of doubling, by holding the hammer-locking lever off the path of the hammer as long as a pressure is exerted on the trigger, a spring-controlled trigger-locking means having a lug at its top, a sear pawl having a dwell thereon and a bolt, wherein, for the purpose of rendering the means provided for the prevention of doubling inoperative, the said setting lever is mounted on a shaft having an arm which acts to force and hold the trigger-locking member below the sear-pawl so that the

said member will be locked and prevented from rearward movement, while the bolt recolling upon the firing of the shot causes the said lug on the sear pawl to engage the dwell on the said locking member for locking the trigger.

3. A quick fire pistol comprising a hammer, a breech bolt, a magazine fillable by successive insertion of a plurality of cartridge strips, a magazine plate movable to block return of the breech bolt to closure only when the last cartridge in the magazine is fired and restored to non-blocking position upon insertion of a cartridge strip, and co-operating locking means on said hammer and breech bolt comprising a rounded corner on the hammer extending in an over-cocked position of the same into the path of a projection

on the breech bolt having an oblique on-run surface for said corner and a rounded shoulder, the position of such co-operation of the hammer and projection with respect to the to and fro travel of the breech bolt being such that during firing the breech bolt will have gained enough impetus in its forward travel to overrun the cocked hammer when the projection encounters the corner thereof but when moving forward and blocked by the magazine plate the breech bolt will be automatically held by engagement of the corner of the hammer with said projection, and in a position permitting insertion of the cartridge strip.

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20	95
25	100
30	105
35	110
40	115
45	120
50	125
55	130
60	135
65	140
70	145
75	150