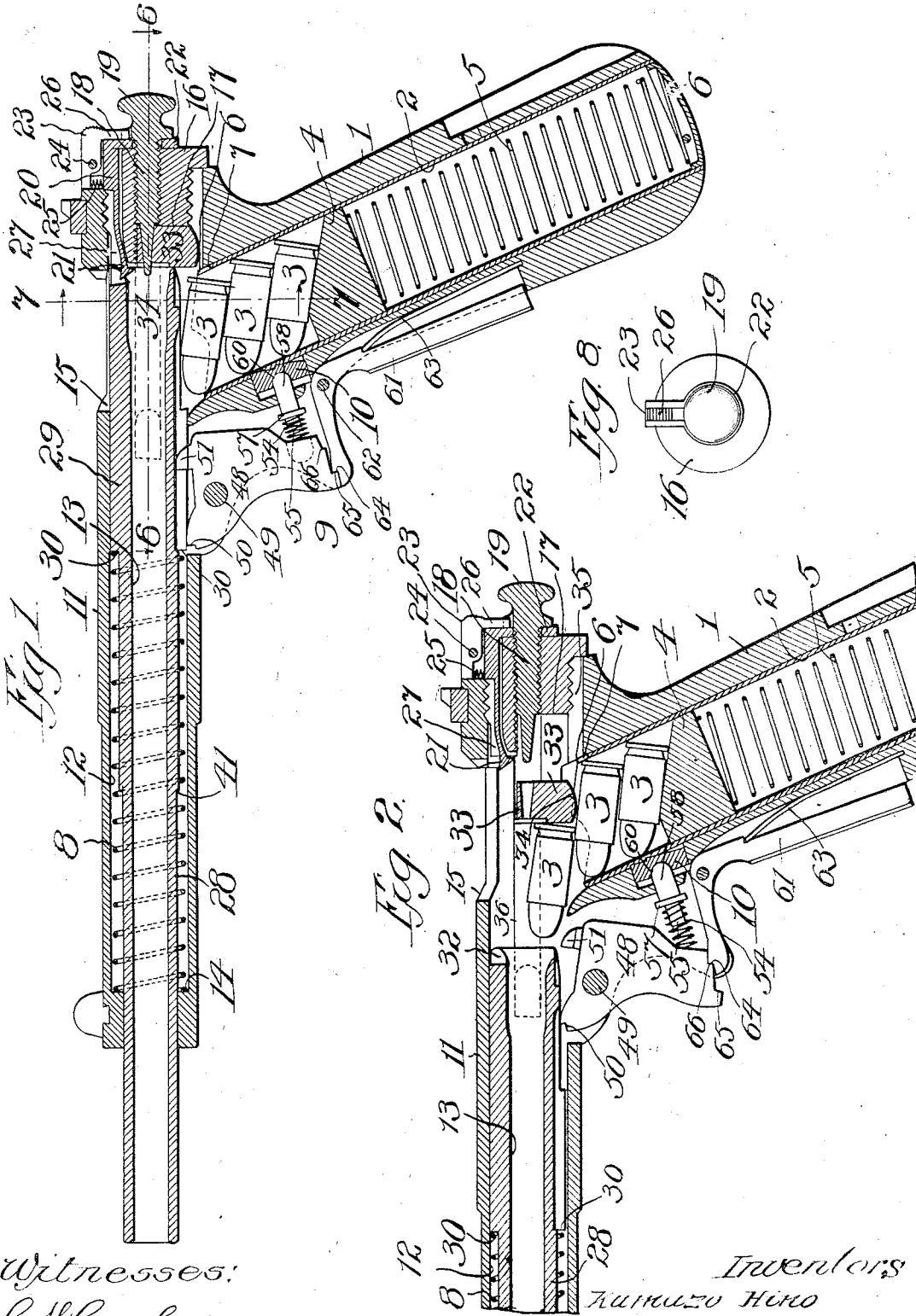


K. HINO & T. KOMURO.

PISTOL.

APPLICATION FILED SEPT. 23, 1904. RENEWED FEB. 7, 1908.

3 SHEETS—SHEET 1.



Witnesses:  
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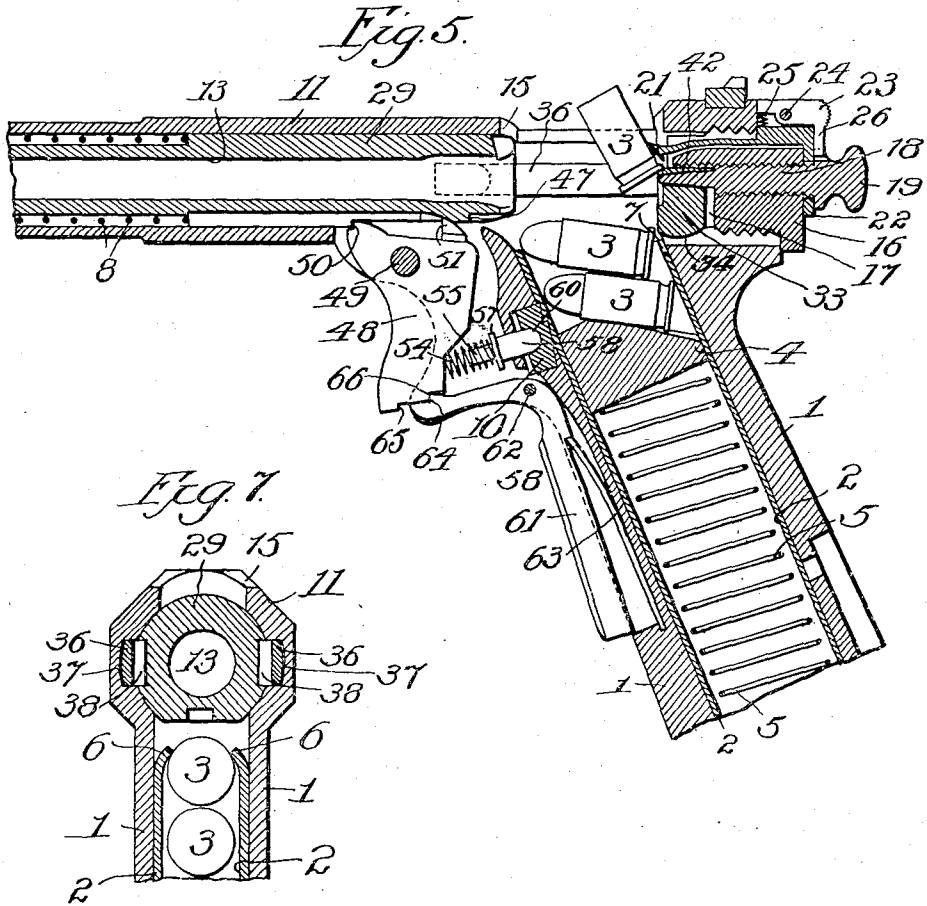


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3 SHEETS—SHEET 3.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

KUMAZO HINO AND TOMIJIRO KOMURO, OF USHIGOME, TOKYO, JAPAN.

## PISTOL.

No. 886,211.

Specification of Letters Patent.

Patented April 28, 1908.

Application filed September 23, 1904, Serial No. 225,681. Renewed February 7, 1908. Serial No. 414,780.

*To all whom it may concern:*

Be it known that we, KUMAZO HINO and TOMIJIRO KOMURO, both subjects of the Emperor of Japan, and residing at Ushigome, of Tokyo, Japan, have invented certain new and useful Improvements in Pistols, of which the following is a specification.

This invention relates to improvements in fire-arms wherein high explosives are used and one object is to neutralize, as far as possible, the shock of the recoil thereby rendering the invention of especial value as applied to pistols.

A further object is to provide a cartridge magazine, a cartridge feed and a shell extractor enabling the user to successively discharge all cartridges contained in the magazine after first cocking the gun by pulling the trigger for each discharge, the cartridges being fed and the spent shells extracted automatically.

According to this invention the barrel is slidably mounted in the stock and operates in firing against the action of the spring, the latter normally maintaining the barrel in a rearward position and yielding, under the shock of the discharge, to permit forward movement of the barrel, the rearward movement effecting discharge of the shell and the succeeding forward movement extracting the spent shell and drawing a fresh cartridge out of the magazine and into a position to be picked up by the barrel in its next rearward movement. To this end there is provided a firing pin and a shell extractor at the rear of the stock together with a cartridge feeder, all arranged in coöperative relation. A cartridge magazine is provided which maintains the cartridges in a position to be picked up by the forwardly moving feeder. In order to hold the barrel in this forward position which is effected by the discharge of a shell and to prevent it, under the action of the spring, from returning and firing a second cartridge prior to pulling the trigger a second time, the latter is movably mounted and provided with firing and retaining detents adapted for engagement with firing and retaining lugs formed on the barrel. When the trigger is released from the barrel permitting the same to retract and fire the cartridge, the said barrel is automatically engaged by the retaining detent in its forward movement to

prevent second firing. There is also provided a main safety device for preventing the accidental discharge of the pistol.

The invention will be more fully described in connection with the accompanying drawings and will be more particularly pointed out and ascertained in and by the appended claims.

In the drawings: Figure 1 is a longitudinal section of a pistol embodying the main features of our invention. Fig. 2 is a like view of a portion of the pistol showing the parts in a position where the barrel is moved forwardly by the operator to draw the first cartridge into position. Fig. 3 is a similar view showing the position of the parts when the barrel has been released by the operator and illustrating the manner in which the firing detent and lug are engaged to retain the barrel in position. Fig. 4 is a similar view showing the position of the parts after the trigger has been pulled and illustrating the barrel in a retracted or firing position, the cartridge having been rammed upon the firing pin and the shell thrust into engagement with the extractor. Fig. 5 is a similar view showing the barrel moving outwardly from the shock of the discharge and the position of the spent shell when extracted from the stock, said figure showing the parts prior to complete outward movement of the barrel. Fig. 6 is a horizontal sectional view on line 6—6 of Fig. 1. Fig. 7 is a sectional view on line 7—7 of Fig. 1. Fig. 8 is a rear view of the breech end of the pistol. Fig. 9 is a sectional view on line 9—9 of Fig. 10. Fig. 10 is a face view of a portion of the magazine. Fig. 11 is a lower face view of the barrel showing in elevation the firing and detent lugs. Fig. 12 is a top view of the trigger.

Like characters of reference designate similar parts throughout the different figures of the drawings.

The structure and operation of the pistol will be described in the order in which the cartridges are fed into and discharged and the empty shells extracted from the pistol, reference being had first to the magazine in which the cartridges are contained. The pistol is provided with a handle 1 in which a magazine 2 is located, said magazine consisting of a casing having an internal cross section of a generally complemental formation

with respect to the cartridges 5. The follower 4 is slidably mounted in the magazine and is normally held in an upward position therein by a spring 5 which engages at its opposite ends the follower 4 and the bottom of the magazine 2. The upper wall of the follower 4 is inclined in order to engage the cartridges in a manner to hold them in a substantially horizontal position when the barrel is in a retracted position as shown in Fig. 1 and to permit said cartridges to be inclined above the horizontal when the barrel is in the position shown in Fig. 5 to permit said cartridges to be fed into the stock.

In order to prevent the cartridges from being automatically fed into the stock by the follower 4, the upper walls of the magazine are bent inwardly as shown at 6 to engage the sides of the uppermost cartridge above its center, said bent portions extending from the rear wall of the magazine forwardly a distance approximately one half the depth thereof and engaging the uppermost cartridge on the rearward portion of its shell. The rear wall of the magazine 2 is cut away at 7 to permit the feeder, hereinafter described, to engage the rear end of the cartridge and slide the same from under the bent portions 6 into the stock as shown in Figs. 2 and 3, the follower serving, after the rear end of the cartridge has passed the forward ends of the bent portions 6, to force the next lowermost cartridge 3 into engagement with said bent portions 6 and thereby quickly forcing the released cartridge into the stock.

In order to hold the magazine 2 in place in the handle 1 the forward face thereof is notched, as shown in Fig. 10 and in the sectional views, as 8 and 9 and is adapted to be engaged by a spring actuated retaining device comprising in part a plate 10 slidably mounted and transversely disposed in a slot in the handle 1. The slot in which said plate is mounted is slightly wider than the thickness of the plate and permits the latter to be rocked or thrust forwardly out of engagement with the notches 8 and 9 to permit the magazine to be withdrawn, the means for holding said plate 10 in a rearward position in the slot and in engagement with the notches 8 or 9 being hereinafter more fully described.

Next describing the construction of the barrel and the stock in which the same is slidably mounted, the construction is as follows: The stock 11 which is mounted on the handle 1 is provided with a bore 12 in which the barrel 13 is inclosed, the said bore being reduced at its forward end forming a shoulder 14. Immediately above the magazine the stock is bent to receive the cartridges and there is also provided an opening 15 in the top of the stock through which the spent shells are ejected. At its rear end the stock is threaded to receive a breech block 16 which is re-

cessed at 17 from a point slightly above its center to its lower periphery to receive the cartridge feeder hereinafter to be described.

A firing pin 18 has threaded engagement in the breech block and projects there-through in a manner to engage the percussion cap of the cartridge when the latter is to be fired. Said firing pin is provided with a recessed flange 19 the recess of which coöperates with parts now to be described to lock the pin in place. An extractor 20 comprises a forwardly projecting extracting arm 21 formed of resilient metal and provided on its forward end with a hook and a slanting nose adapted to automatically engage the rim of the cartridge shell as clearly shown in Fig. 4. Said extractor is provided on its rear end with an apertured lug 22 through which the firing pin 18 projects and against which the flange 19 thereof impinges when the parts are in place, as shown in Fig. 1. A spring actuated locking dog 23 is pivotally mounted at 24 on the extractor and is held in a locking position by a spring 25. Said dog is provided with a locking projection 26 adapted to engage the recess in the flange 19. The breech block 16 is slotted at 27 to permit insertion of the extractor in the manner shown.

Next describing the construction of the barrel 13 the same consists of a reduced forward portion 28 and a relatively enlarged rearward portion 29 forming a shoulder 30 between which and the shoulder 14 is interposed a spring 8 which serves to normally hold the barrel in a retracted position. The rear end of said barrel is notched at 32 to receive the nose 21 of the extractor and the bore of the barrel is flared outwardly at the rear end thereof in order to effectively pick up the cartridge in its return movement. Said barrel operates in connection with feeding mechanism to force the cartridge into place in the following manner. The feeder consists of a block 33 adapted, when in a retracted position, to fit into the recess 17 of the breech block and provided on its lower portion with a feed lug 34 for engagement with the rear end of the cartridge. The stock is slotted at 35 to permit the lug to be withdrawn rearwardly when the pistol is to be cleaned. Said feeder is slidably connected with the barrel 13 by means of forwardly projecting arms 36 which slide in ways 37 formed in the stock and which are provided with lugs 38 adapted to engage slots 39 formed in the barrel. Said slots 39 terminate in shoulders 40, the function of which in connection with said lugs 38 will now be described. When the barrel 13 is in a retracted position as shown in Fig. 1, the lugs 38 occupy a forward position in the slots 39 as shown in Fig. 6. Assuming that the operator desires to draw the first cartridge into place, the barrel is grasped and pulled out-

wardly as shown in Fig. 2, the distance between the inner ends of the lugs 38 and the shoulders 40 permitting movement of the barrel 13 prior to the movement of the feeder 33 a sufficient distance to form a space between the feeder and the barrel slightly greater than the length of the cartridge. When the barrel has been moved forwardly such a distance the lugs 38 will be engaged by the shoulders 40 and subsequent forward movement of the barrel 13 will be accompanied by forward movement of the feeder 33 and the lug 34 will engage the cartridge and slide the same forwardly from under the bent portions 6, the follower 4 through the cartridges 3 forcing the feed cartridge into the stock as shown in Fig. 2. The barrel has then reached the forward limit of its movement bringing a shoulder 41 into engagement with the shoulder 14. The operator then releases the barrel 13 and the spring 31 forces the same rearwardly to the position shown in Fig. 3 which is the cocking position, the barrel being held in such position by the trigger in a manner to be hereinafter described. It will be noted that this rearward movement of the barrel has taken place independently of the feeder, the lugs 38 merely sliding forwardly in the slots 39 and the feeder remaining in substantially the same position as shown in Fig. 2. This rearward movement serves, by means of the flaring end of the barrel, to pick up the cartridge and hold the same in the position shown in Fig. 3. The pistol is now ready to be fired and when the trigger is pulled the spring forces the barrel 13 rearwardly, the said barrel first engaging the feeder arm 33 and thrusting the same into the position shown in Fig. 1. In this movement the extractor 21 is engaged by the rim or flange of the cartridge and is forced upwardly and over said flange and into engagement therewith as clearly shown in Fig. 4.

The feeder 33 is apertured at 42 to receive the firing pin 18 and as the barrel is retracted the percussion cap of the cartridge is forced against the firing pin in a manner to discharge the shell. The load of the cartridge passing outwardly through the bore of the barrel 13, carries the latter forwardly with the following result. As above described when the barrel and feeder are in a retracted position the lugs 38 and shoulders 40 are so disposed as to permit of a prescribed movement of the barrel 13 a distance slightly greater than the length of the cartridge. This movement is shown taking place in Fig. 5, the barrel having been carried forwardly by the discharge of the shell until the play between the lugs 38 and shoulders 40 is taken up. The first movement of the feeder 33 forces the spent shell outwardly and the engagement of the latter by the extractor 21 causes ejection in the manner clearly shown

in Fig. 5. Ejection of the spent shell is quickly followed by engagement of the feeder lug 34 with the rear of the uppermost cartridge 3 forcing the same into the stock to be picked up by the barrel in precisely the same manner as when the pistol is cocked by hand as hereinbefore described.

The trigger mechanism and safety devices and the manner in which the same cooperate with the barrel will next be described. The barrel is provided with firing shoulders 43 which as shown in Fig. 11 are oppositely disposed and are formed by recessing the barrel to provide engaging surfaces 44 extending from the shoulders to the rear end of the barrel. The barrel is centrally grooved at 45 from the shoulder 30 rearwardly to 46 wherein the groove terminates on a plane with the surface 44. A retaining shoulder 47 is formed by recessing the barrel as clearly shown in Fig. 11. The trigger 48 is pivoted at 49 and is provided with a firing detent 50 and a retaining detent 51. The firing detent is preferably formed integral with the trigger and is of sufficient width to span the groove 45 and engage both of said shoulders 43. The retaining detent 51 is sufficiently narrow to permit the barrel to move freely and to prevent engagement between the retaining detent and said firing shoulders, the said detent moving freely in slot 45. Said retaining detent is adapted for engagement with the retaining shoulder 47 formed in the rear end of the barrel. The retaining detent is preferably formed of a part separate from the trigger and is movably mounted therein, the said detent 51 fitting in the recess 52 and being normally held in an upward position by spring 53. In order to prevent the detent from being forced out of the recess by the spring 53 there may be provided any suitable retaining device such as shown in Fig. 3 which may consist of a spring plate 54 rigidly secured to the upper face of the trigger and bifurcated to engage the pin in the manner shown.

Next describing the operation of the trigger it will be noted that the retaining and firing detents are disposed on opposite sides of the pivot 49 so that as the trigger is rocked in opposite directions one detent will be thrown out of operative proximity to the firing or detent shoulders when the remaining detent is engaged therewith. In order to normally hold the detent 50 in engaging proximity with the shoulders 43 there is provided a spring 54. As shown in Fig. 1 when the barrel is drawn forwardly to feed in a cartridge the operator will move the said barrel until the shoulders 41 and 14 are in engagement, in which position the firing shoulders have passed the firing lug and permitted the trigger to be thrown into a cocking position by spring 54. The barrel having been released by the operator will be re-

tracted under the action of spring 8 to the position shown in Fig. 3 wherein the firing detent will engage the shoulders 43. It will be obvious by reference to Figs. 2 and 3 that in the forward movement of the barrel the trigger has been permitted to rock upon its pivot a sufficient distance to throw the retaining detent 51 out of engaging proximity to the retaining shoulder 47 allowing the barrel to retract until the shoulders 43 engage the firing detent 50. When the trigger 48 is pulled to fire, the retaining detent will be forced upwardly into the slot 45 as clearly shown in Fig. 4 immediately after the firing detent has been released from the shoulders 43. A rearward movement of the barrel in firing and its forward movement resulting from the discharge of the shell is effected so quickly that the operator does not release his grip upon the trigger and still retains it in the position shown in Fig. 4. The detent 51 when the barrel travels outwardly will pass over the surface 44 and when the barrel returns will automatically engage the detent 47, this action being taken prior to the operator releasing the trigger and serving to automatically arrest rearward movement of the barrel. After the operator releases the trigger the same is rocked by the spring 54 in a manner to bring the firing detent into engaging proximity with the firing shoulders 43 in time to catch the barrel. In order to insure effective operation in this respect the shoulders 43 and 47 are spaced apart a greater distance than the distance between the firing and retaining detents 50 and 51.

Next explaining the trigger safety the same consists of a lock pin having a flange 57 between which and the recess of the trigger the spring 54 is located. The outer end 58 of said locking pin projects through the handle 1 and engages the plate 10. The said spring 54 serves to normally hold the trigger in a cocked position and also serves to force the plate 10 rearwardly into locking engagement with the magazine 2.

In order to vary the tension of the spring 54 to secure a more effective or a less positive engagement of the plate 10 with the magazine 2 and also to vary the action of the trigger 48 the plate 10 is provided with a groove having a shallow portion 59 and a deep portion 60. Variable tension of the spring may be secured by lateral movement of the plate 10.

The lever safety comprises a bell crank lever 61 pivoted at 62 and having its lower arm engaged by spring 63 and normally held outwardly thereby. Said trigger is provided with a lug 64 adapted to engage lugs 65 and 66 formed on the lower end of the trigger. When the trigger is in the position shown in Fig. 1 the main detent automatically is in this position by engagement of the lug 64 with lug 65 and when the trigger is in

the position shown in Fig. 2 it is automatically locked by engagement of the lug 64 with lug 66.

Having thus described our invention, what we claim and desire to secure by Letters Patent is:—

1. In a pistol, the combination of a stock, a slidable barrel in said stock, a spring for urging said barrel into retracted position, a trigger provided with detents adapted to engage with notches on said barrel, a movable bolt connected with said barrel and adapted to draw a cartridge in position for loading, a magazine cartridge feed, means for extracting the shells, and a firing pin adapted to project through an opening in said bolt.

2. In a device of the character set forth, the combination of a stock, a slidable barrel in said stock, a coiled spring in said stock for urging the barrel backward, a trigger provided with a rigid detent, a movable detent in said trigger, said detent being adapted to engage with said barrel to hold it in forward position after firing, a magazine, means for feeding the cartridges from the magazine to the barrel, means for extracting the shells, and a safeguard comprising a bell crank lever pivoted to the handle, having one end provided with a projection adapted to engage with the trigger and the other end lying along said handle, and a spring for holding said safeguard in normal position to engage with the trigger, substantially as described.

3. In a pistol, the combination of a stock, a spring actuated barrel therefor having engaging members, and a trigger provided with firing and retaining members for engagement with said barrel.

4. In a pistol, the combination of a stock, a spring actuated barrel therefor having engaging portions, and a pivotally mounted trigger provided on opposite sides of its pivot with firing and retaining detents for engagement with said barrel.

5. In a pistol, the combination of a stock, a spring actuated barrel therefor having engaging members, and a pivotally mounted trigger provided on one side of the pivot with a rigid firing detent and on the opposite side with a yieldingly acting retaining detent for engagement with said barrel.

6. In a pistol the combination with a stock, of a spring actuated barrel therefor, a pivotally mounted trigger having firing and retaining detents engaging said barrel and an auxiliary safety serving to lock said trigger in firing and retaining positions.

7. In a pistol, the combination with a stock, of a spring actuated barrel therefor, a pivotally mounted trigger having firing and retaining detents engaging said barrel, and a pivotally mounted auxiliary safety for locking said trigger in firing and retaining positions.

8. In a pistol, the combination of a stock, a  
spring actuated barrel therefor having en-  
gaging shoulders, and a pivotally mounted  
trigger provided on opposite sides of its pivot  
5 with firing and retaining detents for engage-  
ment with said shoulders, said firing detent  
being of greater width than said retaining  
detent, said shoulders being spaced apart  
and grooved to prevent engagement of said  
10 retaining detent with the spaced shoulder  
and said firing detent with the grooved  
shoulders.

9. In a pistol, the combination with a  
stock, of a slidably mounted barrel, a car-

tridge feeder operated by said barrel, and a 15  
shell extractor cooperating with said feeder,  
said feeder serving, upon predetermined  
movement of the barrel, to draw the car-  
tridge into the stock and in connection with  
the extractor simultaneously discharge the 20  
shell therefrom.

In testimony whereof we affix our signa-  
tures in presence of two witnesses.

KUMAZO HINO.

TOMJIRO KOMURO.

Witnesses:

MASUO YOSHIDA,

L. HONDA.