

J. H. WESSON.
 FIREARM.
 APPLICATION FILED NOV. 6, 1912.

1,146,984.

Patented July 20, 1915.

Fig. 1.

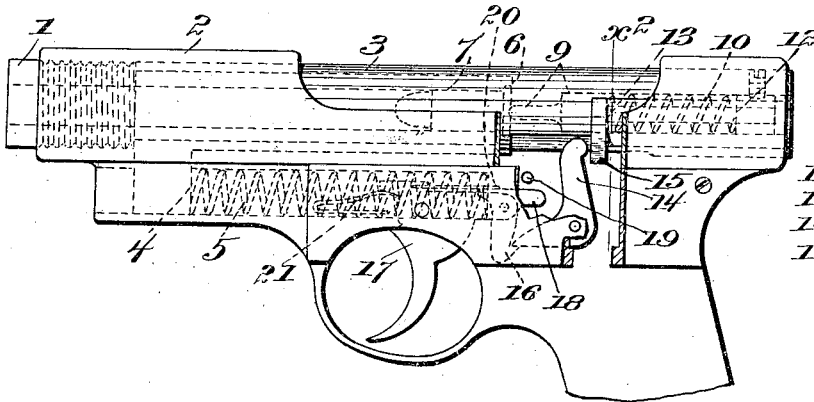


Fig. 2.

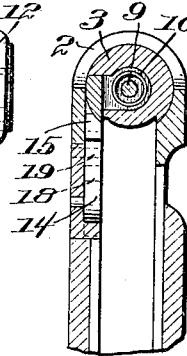


Fig. 3.

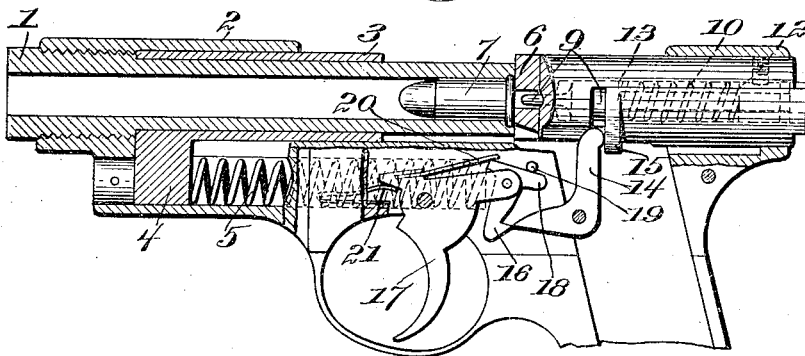
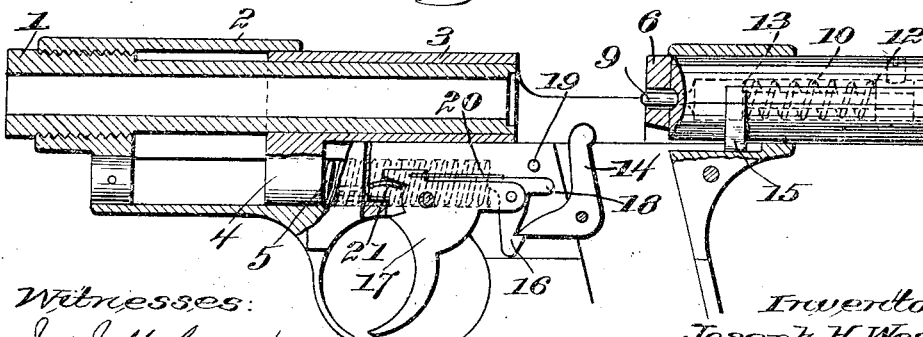


Fig. 4.



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UNITED STATES PATENT OFFICE.

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FIREARM.

1,146,984.

Specification of Letters Patent.

Patented July 20, 1915.

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To all whom it may concern:

Be it known that I, JOSEPH H. WESSON, a citizen of the United States, residing in Springfield, in the county of Hampden and State of Massachusetts, have invented an Improvement in Firearms, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

The present invention relates to an automatic fire arm of the so-called blow back type in which the reaction of the gases causes the breech bolt to move back when the fire arm is discharged, allowing the empty shell to be ejected and a new cartridge inserted from the magazine. It has been the usual practice in fire arms of this kind to utilize the recoil movement of the breech bolt to cock the hammer; and in this case it is necessary to provide the lock with automatic latching mechanism independent of the trigger to hold the hammer cocked, because the automatic action is so rapid that it is impossible to relax the muscular effort employed in pulling the trigger in time to catch the hammer if the catching of the hammer depends upon the restoration of the trigger to its normal position. The automatic mechanism employed to catch the hammer must of necessity be so delicate that in some cases it may fail to operate, the result being that several and perhaps all of the cartridges are discharged in rapid succession after the trigger has been once pulled, so that it is more or less dangerous to use the weapon. Furthermore, in a weapon of this kind after the first discharge, the hammer is left at full cock if everything operates normally, so that it is dangerous to carry the weapon, because a pull on the trigger will produce a discharge under these circumstances.

It is the purpose of the present invention to utilize the blow back principle for ejecting the spent shell and reloading, without cocking the hammer or compressing the hammer spring. In accordance with the invention, the hammer or firing pin, or any equivalent device, is entirely inactive after the pistol has been fired, the operation of the hammer being solely under the control of the trigger, the pull of which compresses the hammer spring or its equivalent and releases the same to fire the pistol after the

manner of the well known self cocking revolver.

In carrying out the invention, the hammer or firing pin, together with its spring or equivalent actuating device, is wholly contained in the movable breech bolt, the whole of this mechanism being movable with the breech bolt so that the spring which has been relaxed in the firing operation remains relaxed during the reciprocating movement of the breech bolt which takes care of the ejection of the spent shell and the insertion of the cartridge. When, therefore, the breech bolt moves forward to push the new cartridge into the chamber, the hammer spring is inactive, and has no tendency to force the hammer against the primer as the breech bolt moves forward. The trigger is arranged so that at each operation when the pistol is loaded and the breech bolt is in firing position it will operate on the hammer spring or its equivalent to compress and release the same, thus causing the pistol to be fired, there being, however, no connection between the trigger and the firing pin or hammer, and the breech bolt during the recoil operation.

Figure 1 is a side elevation of a pistol embodying the invention, shown partly in section; Fig. 2 is a transverse section on the line $x-x$ of Fig. 1; Fig. 3 is a longitudinal section showing the pistol with the trigger pulled nearly to its firing position; and Fig. 4 is a similar section showing the pistol with the parts in the position which they would commonly assume after the cartridge had been fired.

Referring to Figs. 1, 3 and 4, the barrel 1 is stationary with relation to the pistol frame, which is provided with a guide sleeve 2 surrounding the reciprocating breech bolt 3, which is provided on its under surface with a shoulder 4 to engage the outer end of the recoil, or reaction spring, 5, which is located in a recess in the frame below the barrel.

The reciprocating bolt is mainly in the form of a cylinder, the forward end being sleeved on the barrel, while the rear end has a face 6 to close the breech of the barrel, and a recess which contains the hammer or firing pin and its spring. The sleeve portion in front of the breech closing face is provided with an opening through which

the spent shell is ejected while the bolt is blown back.

In the normal position shown in Figs. 1 and 3, the bolt is forward with the breech closing face in engagement with the rear end of the barrel which contains the cartridge 7. The operation of the pistol is substantially like that of any other automatic pistol of the blow back type, the bolt being forced back against the action of the spring 5 by the reaction of the forces when the cartridge is fired, the spent shell being ejected and a new shell inserted through the action of the usual ejector mechanism and magazine, which have not been herein shown, since they form no part of the present invention. With the pistol in the firing condition shown in Figs. 1 and 3, however, the hammer or its equivalent is not cocked and is incapable of any automatic movement whatever, being in fact entirely inactive and wholly dependent for its action upon a pull of the trigger or equivalent device the operation of which is necessary in order to produce the result.

As herein shown, the pistol is provided with a firing pin 9 which is contained in the rear end of the bolt, and is adapted to be acted upon by a spring 10, which, as shown in Figs. 1 and 4, is normally relaxed and capable of being compressed only by the action of the trigger or its equivalent in firing the weapon. The spring 10 is shown as located between a stationary shoulder 12 at the end of a recess in the bolt, and a movable shoulder 13 which is connected with the firing pin 9. So long, therefore, as the shoulder 13 is not acted upon by any outside element, the spring 10 will not be compressed, and the firing pin will merely move back and forth with the bolt, having no tendency to act independently thereof on a cartridge which may be in the chamber.

To fire the pistol, the trigger or its equivalent is provided with means for compressing the firing pin spring 10 during the first part of the trigger movement, and releasing the said spring by a continued movement, so that the firing pin can act upon the cartridge in the chamber. In the construction shown, the pistol is provided with an elbow lever 14 pivoted in the frame below the breech bolt, the upper end of said elbow lever lying in front of a projection 15, formed on the firing pin, while the lower end of said elbow lever is engaged by a sear 16 pivotally connected with the trigger 17, the said sear being pivoted to an extension at the rear end of the trigger and provided with a tail 18 adapted to be engaged by a fixed stop 19 when the trigger is pulled, which causes the said sear to be

rocked, as shown in Fig. 3, out of engagement with the elbow lever. In the pull of the trigger 17, therefore, the elbow lever is moved from the position shown in Fig. 1 to the position shown in Fig. 3, and the sear 16 is finally tripped and becomes disengaged from the end of the elbow lever 14, thus allowing the firing pin 9 to move forward under the stress of its spring 10, to explode the cartridge. The elbow lever 14 is then thrown backward to its normal position, and when the trigger 17 has been released, the sear 16 snaps under the end of the elbow lever 14, being normally held in the position shown in Fig. 1 by means of a spring 20. The trigger is shown as provided with a restoring spring 21. After the discharge has taken place, the spring 10 remains inactive and there is no independent movement of the firing pin with relation to the breech member, the breech member, the firing pin and its spring all moving together with the spring relaxed.

In the construction shown, the projection 15 is offset laterally from the firing pin 9, and enters a guideway in the breech bolt which serves to keep the firing pin in position. By this construction, moreover, the firing mechanism is located at one side, so as not to interfere with the delivery of the cartridges from the magazine, which is located in the grip.

What I claim is:

In an automatic pistol of the blow-back type, the combination with a breech bolt adapted to close the breech end of the barrel when the pistol is in condition to be fired; of a firing pin contained in the breech bolt and having a lateral shoulder projecting through the same; a spring located in the breech bolt between the shoulder on the firing pin and a fixed shoulder in said breech bolt; an elbow lever pivoted in the frame, one member of said elbow lever lying in the path of the lateral shoulder of the firing pin when the barrel is closed; a trigger; a sear pivotally connected with the rear end of said trigger and having a rearward extension and a latch projecting downward to engage the other member of said elbow lever; a sear spring also connected with the trigger; and a stop to engage the rearward extension of the said sear.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH H. WESSON.

Witnesses:

GEORGE P. CHAPIN,
ARTHUR F. ROWE.