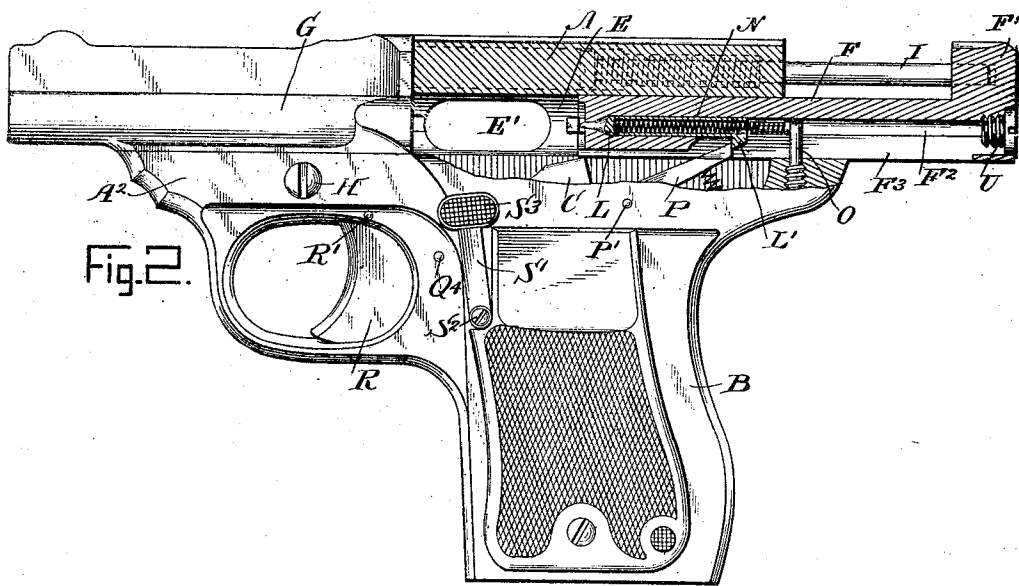
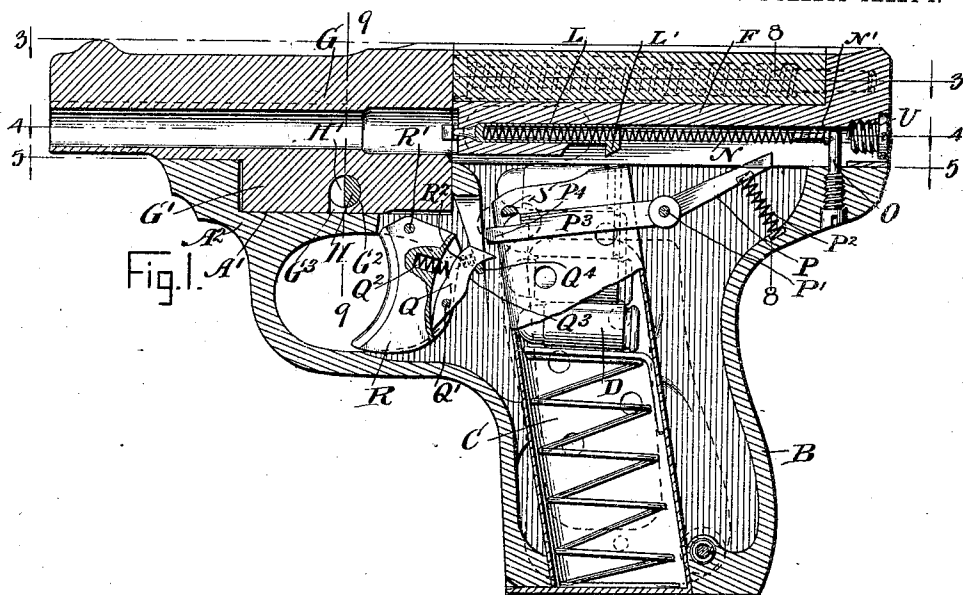


A. FYRBERG.
AUTOMATIC HAND FIREARM.
APPLICATION FILED MAR. 13, 1914.

1,105,416.

Patented July 28, 1914.

2 SHEETS—SHEET 1.



WITNESSES

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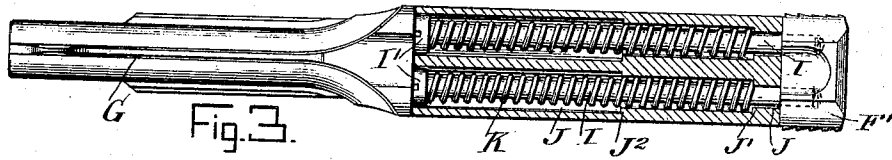


Fig. 3.

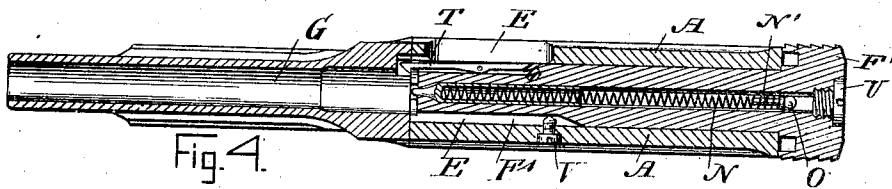


Fig. 4.

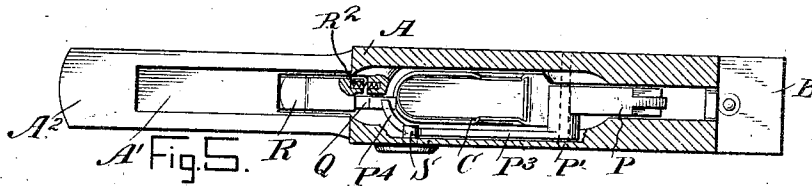


Fig. 5.

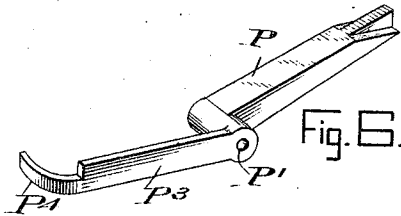


Fig. 6.

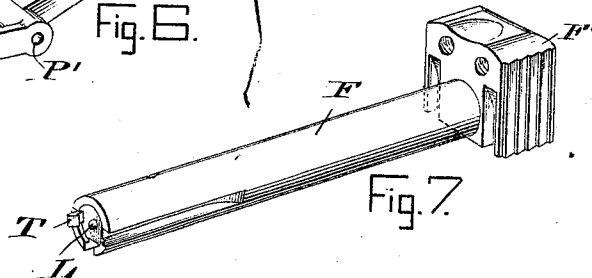


Fig. 7.

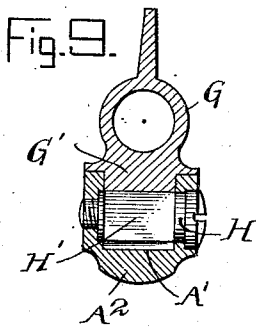


Fig. 8.

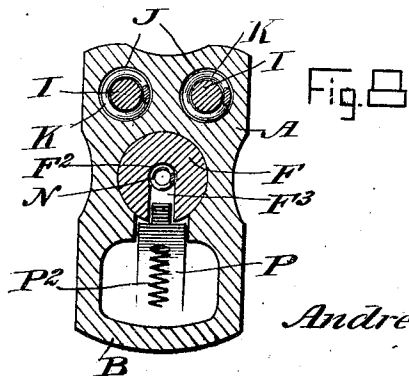


Fig. 9.

WITNESSES

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UNITED STATES PATENT OFFICE.

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AUTOMATIC HAND-FIREARM.

1,105,416.

Specification of Letters Patent.

Patented July 28, 1914.

Application filed March 13, 1914. Serial No. 824,490.

To all whom it may concern:

Be it known that I, ANDREW FYRBERG, a citizen of the United States, and a resident of Worcester, in the county of Worcester and State of Massachusetts, have invented a new and Improved Automatic Hand-Firearm, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved automatic hand firearm arranged to allow of quickly and securely fastening the barrel in position on the frame and allowing removal of the barrel, to engage the sear with the firing pin in the rear of the magazine and to control the sear from the trigger in front of the magazine, to relieve the main recoil spring of the strain incident to firing, to prevent the breech block from blowing out in case of accidental breaking of the spring-pressed breech block guide rods, and to provide a safety device for preventing the sear from rising when the trigger is pulled and to allow instantaneous release of the sear when desired.

The invention consists of novel features and parts and combinations of the same which will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a longitudinal central section of the automatic hand firearm; Fig. 2 is a side elevation of the same with parts in section and with the breech block in recoil position; Fig. 3 is a sectional plan view of the same on the line 3—3 of Fig. 1; Fig. 4 is a similar view of the same on the line 4—4 of Fig. 1; Fig. 5 is a like view of the same on the line 5—5 of Fig. 1; Fig. 6 is a perspective view of the sear; Fig. 7 is a perspective view of the breech block with the recoil rods removed; Fig. 8 is an enlarged cross section of the automatic hand firearm on the section line 8—8 of Fig. 1 and Fig. 9 is an enlarged cross section of the same on the line 9—9 of Fig. 1.

The frame A of the firearm is provided with an integral handle B containing a suitable removable magazine C for carrying a stack of cartridges D delivered successively into the firing end of the bore E formed in the frame A. The breech block F slides in

the bearing E and pushes the cartridge D from the said bore into the barrel G during the return movement of the breech block. The rear end of the barrel G abuts against the forward end of the frame A and the said barrel is provided with a base G' which fits into a recess A' formed in the top of a forward projection A² of the frame A. A screw H passes transversely through an opening G² in the base G' and screws in one side of the projection A², and the said screw H has a portion H' cut out as indicated in Fig. 1, the cut-out portion extending within the base G'. A slot G³ leads from the bottom of the base G' into the opening G² so that when the screw H is given a half turn, then the portion of the screw at the cut-out portion H registers with the slot G³ to allow of lifting the barrel G and its base G' out of the frame A. When the screw H is turned to the position shown in Fig. 1 then the barrel is securely locked in place on the frame A.

The rear end of the breech block F is provided with a head F' normally resting against the rear end of the frame A, and the said head F' is provided at its upper portion with forwardly-extending coil rods I slidably engaging bores J formed in the upper portion of the frame A, as plainly indicated in Figs. 3 and 8. The forward ends of the rods I are provided with heads I' normally abutting against the rear end of the barrel G and on the said rods are coiled springs K for normally holding the breech block F in forward position. The bores J are provided near their rear ends with shoulders J' on which are seated the rear ends of the springs K, and the said bores J are provided intermediate their ends with shoulders J² adapted to be engaged by the heads I' to limit the rearward or recoil movement of the breech block F. The recoil rods I are passed into the bores J from their front ends at the time the barrel G is removed from the frame and the rear ends of the said recoil rods I are screwed or otherwise fastened in the head F' of the breech block. It will be noticed that by the arrangement described the breech block F is properly guided in its bearing F² by providing the head F' with spring-pressed recoil rods engaging the bearings or bores J separate from the bearing E.

The breech block F is provided with a central bore F² in the forward end of which

is mounted to slide a firing pin L pressed on by a spring N extending with its forward end into a recess formed lengthwise in the firing pin L. The rear end of the spring N is provided with a headed pin N' abutting with its head against a pin O screwed or otherwise secured in the frame A and projecting upwardly through a slot F³ formed in the bottom of the breech block F and leading into the bore F². By the arrangement described the firing pin L is actuated by its spring N which is wholly independent of the recoil springs K for returning the breech block to forward position. The rear end of the firing pin N is provided with a shoulder L' adapted to be engaged by a sear P pivoted at P' in the frame A at the hollow handle B and in the rear of the magazine C, as plainly indicated in Figs. 1 and 5.

The sear P is pressed on by a spring P² to normally hold the sear in uppermost position with a view to engage the lug L' at the time the breech block F is moved rearwardly by the recoil of the fired shot (see Fig. 2).

The sear P is provided on one side with a forwardly-extending arm P³ arranged alongside the magazine C and having its front terminal P⁴ curved transversely in front of the magazine C (see Figs. 1 and 5). The front end P⁴ is adapted to be engaged by the upper end of a dog or cam Q fulcrumed at Q' in a recess in the back of the trigger R fulcrumed at R' on the extension A² of the frame A. The trigger R is normally held in a forward position by a spring R² and the dog Q is normally held in a rearmost position by a spring Q² held on the trigger R (see Fig. 1). The back of the dog Q is provided with a cam surface Q³ engaging a transverse pin Q⁴ attached to the handle B so that when the trigger R is pressed and swung rearwardly then the dog Q is caused to swing forwardly and upwardly and in doing so it engages the front end P⁴ of the sear arm P³ thereby imparting a swinging motion to the sear P in a downward direction. When this takes place the free end of the sear P disengages the lug L' of the firing pin L to allow the firing pin L to move forward by the action of its spring N compressed during the forward movement of the breech-block F. From the foregoing it will be seen that the sear P is located in the rear of the magazine C but is actuated by the dog Q and trigger R at the front of the magazine owing to the arm P³ extending forwardly from the sear P to one side of the magazine. It will also be noticed that by the arrangement described the spring N for the firing pin is independent of the recoil springs K so that the latter are relieved of the duty for actuating the firing pin L whenever the trigger R is pressed and the sear arm P³ is unlocked.

The forward end P⁴ of the sear arm P³

is of less height than the arm P³ (see Fig. 1) and the forward end of the arm P³ is adapted to be engaged by a locking pin S held on the upper end of an arm S' located at the outside of the handle B and fulcrumed at S² on the said handle (see Fig. 2). The upper outer face of the arm S' is provided with a fingerpiece S³ to permit the user of the firearm to impart a swinging motion to the said arm S' with a view to move the pin S into or out of engagement with the top edge of the sear arm P³. When the arm S' is in rearmost position the pin S extends over the top edge of the sear arm P³ and thus locks the latter against upward movement in case the trigger R is pressed thus preventing the sear P from disengaging the lug L' of the firing pin L. When the arm S' is swung forward then the pin S moves out of engagement with the top of the sear arm P³ (see Fig. 1) to allow the sear arm P³ to be swung upward by the dog Q on the user pressing the trigger R. It is understood that the pin S extends through an elongated slot formed in the side of the handle B.

The forward end of the frame A is provided with a lateral opening E' leading from the forward end of the bearing E to the outside for the passage of the empty shells. The forward end of the breech block F is provided with the usual shell extractor T (see Fig. 4) for extracting an empty shell from the barrel G and drawing it against the ejecting screw V to cause the shell to pass through the opening E' to the outside during the time the breech block F moves rearwardly and uncovers the opening E'. The screw V screws in the frame A and engages a slot F⁴ (see Fig. 4) provided in one side of the breech block to prevent the breech block F from turning in its bearing. The rear end of the bore F² and the slot F³ are closed by a screw U screwing in the head F' of the breech block F. It will be noticed that should the recoil rods I become accidentally broken the breech block F is held against flying out of the frame A by the pin O to prevent injury to the user of the firearm.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A firearm provided with a frame having a forward projection a distance from the top of the frame, the latter having a breech block bearing above the said projection and having recoil rod bearings above the breech block bearing in the upper portion of the frame, a barrel removably fastened to the said projection and having its bore in alignment with the said breech block bearing and having its rear end abutting against the forward end of the frame and closing the forward ends of the said recoil rod bearings, a breech block mounted to slide in the said breech block bearing, and recoil rods moving

with the said breech block and mounted to slide in the said recoil rod bearings.

2. A firearm provided with a frame having a forward projection a distance from the top of the frame, the latter having a breech block bearing and recoil rod bearings located above the said breech block bearing in the upper portion of the frame, the recoil rod bearings extending from the front end of the upper portion of the frame to the rear end thereof and being spaced apart in a horizontal direction, a barrel removably attached to the said frame projection and having its rear end abutting against the forward end of the frame and closing the forward ends of the said recoil rod bearings, the bore of the barrel being in alinement with the said breech block bearing, a breech block mounted to slide in the said breech block bearing, and spring-pressed recoil rods moving with the said breech block and mounted to slide in the said recoil rod bearings.

3. A firearm provided with a frame having a forward projection a distance from the top of the frame, the latter having a breech block bearing and recoil rod bearings located above the said breech block bearing in the upper portion of the frame, the recoil rod bearings extending from the front end of the upper portion of the frame to the rear end thereof and being spaced apart in a horizontal direction, a barrel removably attached to the said frame projection and having its rear end abutting against the forward end of the frame and closing the forward ends of the said recoil rod bearings, the bore of the barrel being in alinement with the said breech block bearing, a breech block mounted to slide in the said breech block bearing and provided at its rear end with a head normally abutting against the rear of the frame, and spring-pressed recoil rods attached to the said head and slidably engaging the said recoil rod bearings.

4. A firearm provided with a frame having a forward projection a distance from the top of the frame, the latter having a breech block bearing and recoil rod bearings located above the said breech block bearing in the upper portion of the frame, the recoil rod bearings extending from the front end of the upper portion of the frame to the rear end thereof and being spaced apart in a horizontal direction, a barrel removably attached to the said frame projection and having its rear end abutting against the forward end of the frame and closing the forward ends of the said recoil rod bearings, the bore of the barrel being in alinement with the said breech block bearing, a breech block mounted to slide in the said breech block bearing and provided at its rear end with a head normally abutting against the rear of the frame, and spring-pressed recoil rods attached to the said head and slidably engaging

the said recoil rod bearings, the latter having at their rear portions interior shoulders and the forward ends of the said recoil rods having heads normally adjacent the rear end of the barrel and adapted to be seated on the said shoulders to limit the recoil movement of the breech block and recoil rods.

5. A firearm provided with a frame, a spring-pressed breech block slidable in the said frame and provided with a bore and a slot leading into the said bore, a firing pin slidable in the said bore, a spring pressing with its forward end the said firing pin, the rear end of the said firing pin spring being fixed in the frame to compress the said spring during the recoil of the breech block, and a stop held in the frame and extending through the said slot into the said bore, the rear end of the firing pin spring abutting against the said stop.

6. A firearm provided with a trigger mechanism, a sear controlled by the said trigger mechanism and having an integral arm provided with a cut-out portion, a swing arm having a fingerpiece under the control of the user of the firearm, and a lug extending transversely from the free end of the said swing arm and standing normally above the said cut-out portion, the said lug being adapted to engage the upper edge of the said sear arm adjacent the said cut-out portion to hold the sear against movement on pressing the trigger.

7. A firearm provided with a frame having a forward projection a distance from the top of the frame, the said projection being provided with a recess terminating at its forward end a distance from the forward end of the said projection, a barrel adapted to rest on the said projection and abutting with its rear end against the forward end of the frame above the said projection, the said barrel being provided with a base fitting into the said recess to hold the barrel against forward and backward movement, and a transverse screw screwing in the said projection and passing through an opening in the said barrel base.

8. A firearm provided with a frame having a forward projection a distance from the top of the frame, the said projection being provided with a recess terminating at its forward end a distance from the forward end of the said projection, a barrel adapted to rest on the said projection and abutting with its rear end against the forward end of the frame above the said projection, the said barrel being provided with a base fitting into the said recess to hold the barrel against forward and backward movement, and a transverse screw screwing in the said projection and passing through an opening in the said barrel base, the said screw having a cut-out portion extending in

the base and the latter having a slot leading to the said opening, the said slot being normally in register with the said cut-out portion and adapted to register with the
5 portion of the screw adjacent the cut-out portion to allow of lifting the barrel out of the frame.

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

ANDREW FYRBERG.

Witnesses:

GEORGE W. BEHRENS,
THEODORE HEINNE.