J. M. BROWNING.

FIREARM.

APPLICATION FILED MAR. 30, 1917.

1,276,716.

Patented Aug. 27, 1918.

Fig. 1.

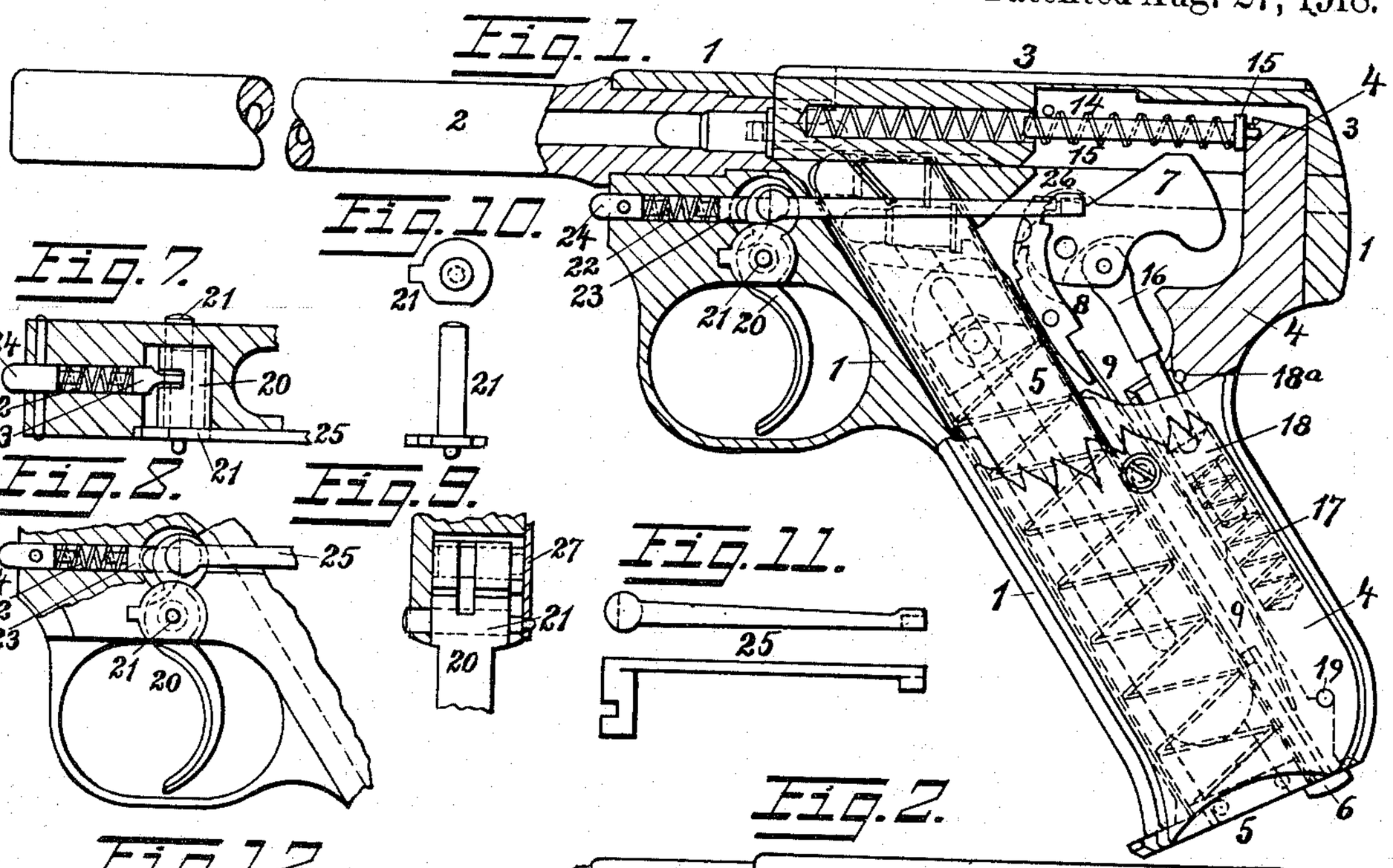


Fig. 10.

Fig. 7.

Fig. 9.

Fig. 8.

Fig. 11.

Fig. 12.

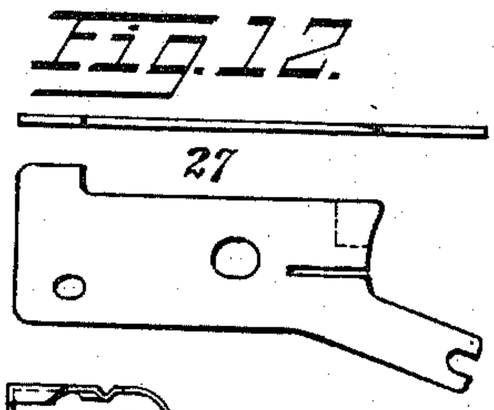


Fig. 2.

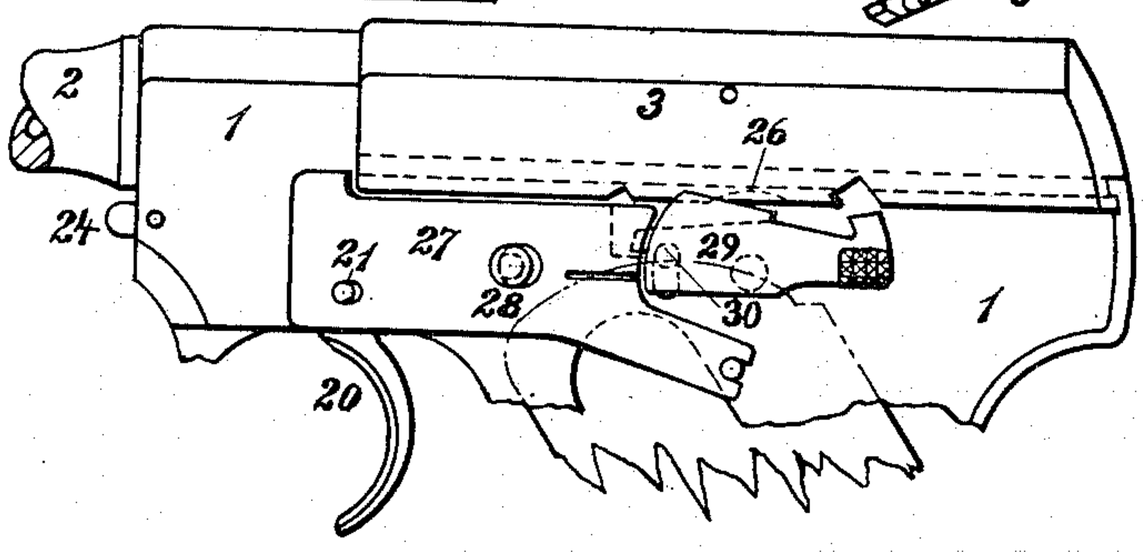


Fig. 13.

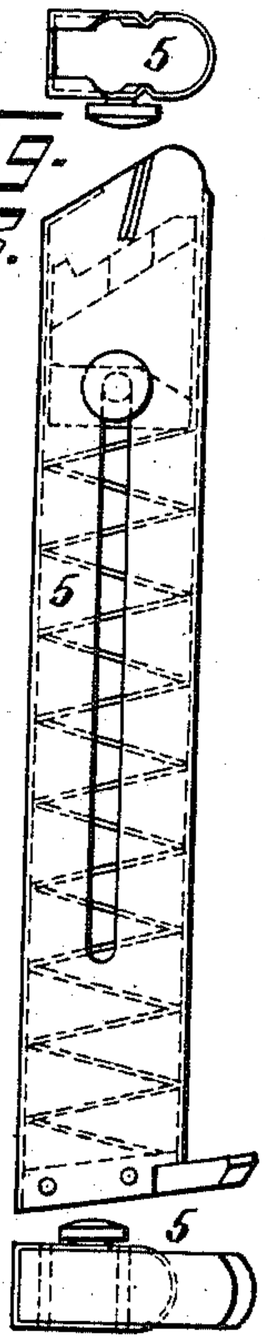


Fig. 5.

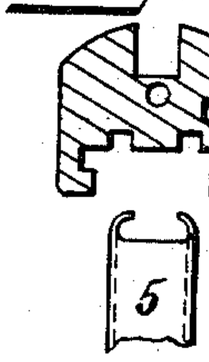


Fig. 3.

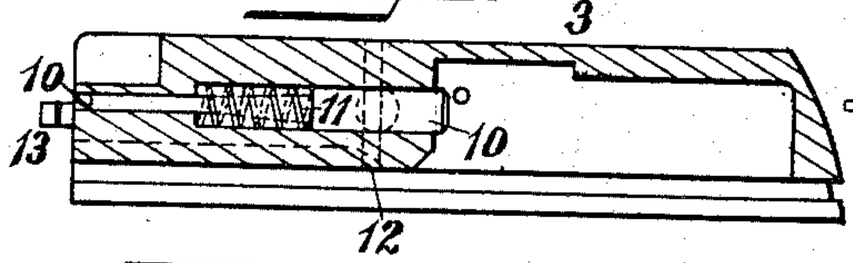


Fig. 6.

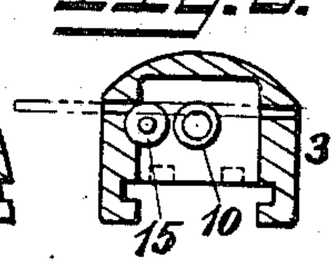
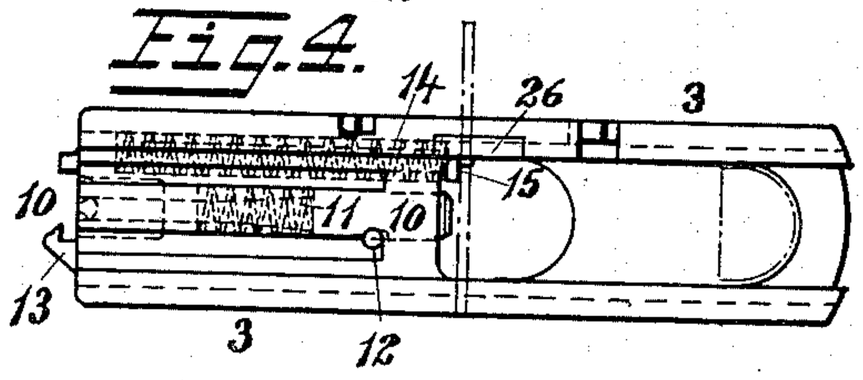


Fig. 4.



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UNITED STATES PATENT OFFICE.

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FIREARM.

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Application filed March 30, 1917. Serial No. 158,569.

To all whom it may concern:

Be it known that I, JOHN M. BROWNING, a citizen of the United States, residing at Ogden, in the county of Weber and State of Utah, have invented a new and useful Improvement in Firearms, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to improvements in magazine firearms, and more especially to automatic firearms and particularly to automatic pistols in which energy is stored during the opening movement of the breech-slide in a spring, the re-action of which is utilized to actuate the return or closing movement of the breech-slide.

The main object of the invention is to produce a firearm of this class which shall be simple and inexpensive in construction, reliable, and safe under all conditions of use.

Another object of the invention is to produce an automatic pistol specially adapted for accurate target practice, by having the handle or grip of the pistol formed to be securely grasped and conveniently held in aiming and firing, and in which the frame of the arm shall support the comparatively long barrel rigidly, and in which the breech-slide may be at will and readily detached and removed from the frame, and be replaced and attached upon the same without requiring the use of any tool therefor.

A further object of the invention is to provide the firearm with an automatic safety device for positively preventing the firing of the arm unless the breech is closed and all parts are in the proper firing position, and by the same device to always prevent more than one shot from following upon each pull of the trigger.

A further object is to provide the arm with a manual safety lock for at will and simultaneously locking the breech-slide and the cocked firing mechanism, and by this same device to provide the arm with a reliable indicator for showing at a glance or touch whether the firing mechanism is in the cocked or in the released position.

These objects are attained by mechanism of simple and practical construction which is efficient, perfectly safe in use, and not liable to get out of order.

The invention is shown herein as embodied in a gas-operated magazine pistol; but it will be understood that the invention is applicable to other firearms.

In the accompanying drawings, wherein is illustrated an embodiment of the invention, Figure 1 is a left-hand side view of a central vertical section through the frame and the rear portion of the barrel with the breech closed and ready for firing; but showing the breech-slide in a vertical section in a plane somewhat to the left side of its central axis, thereby exposing to view the re-action spring and its guide for storing the energy of the recoil on firing a shot, and showing the manner in which the two ends of the re-action spring are supported, the front end in the breech-bolt and the rear end by the butt piece of the grip or mainspring housing.

Fig. 2 is a left-hand side view of the upper portion of the frame of the pistol and of the breech-slide in the closed position.

Fig. 3 is a central longitudinal section of the breech-slide, showing the firing-pin with its retracting spring and locking pin in the breech-bolt.

Fig. 4 is a bottom view of the breech-slide.

Fig. 5 is a vertical transverse section of the breech-bolt near its forward end looking forward, showing also an upper portion of the cartridge magazine.

Fig. 6 is a vertical transverse section of the breech-slide in rear of the breech-bolt, indicating the respective positions of the firing pin and of the re-action spring and its guide rod, the spring and rod being shown in Figs. 4 and 6 as held in their forward compressed position by a transverse pin.

Fig. 7 is a horizontal section through the forward portion of the frame below the barrel, showing a top view of the trigger and showing the trigger spring, its piston and its fastening plug.

Fig. 8 is a partial vertical section of the frame showing the trigger in its place and above it the trigger spring, its piston and fastening plug.

Fig. 9 is a vertical transverse section of a portion of the frame, showing the hub and the pivot of the trigger, and the side plate, seen from the front.

Fig. 10 shows the trigger pivot detached, in an end view and in a top view.

Fig. 11 shows the trigger-bar in a left-hand side view and in an under side view.

Fig. 12 shows the side plate detached, in a top view and in a side view.

Fig. 13 shows the cartridge magazine in a top view, a right-hand side view, and a bottom view.

Similar numerals refer to similar parts throughout the several views.

The pistol represented in the drawings has the following main parts, the frame 1, the barrel 2, the breech-slide 3, and the butt piece or mainspring housing 4.

The frame 1 has a strong upwardly projecting abutment at its forward end for receiving the rear portion of the barrel 2, as shown in Figs. 1 and 2, this seat and the rear portion of the barrel are of considerable length and the barrel has an annular shoulder to fit against the front end of the frame, so that the barrel is most rigidly supported in the frame, being fastened therein either by screw threads or by any other well known means.

From the barrel seat rearward, the top of the frame is lower and open, and is provided with external longitudinal ribs and grooves, and the bottom of the breech-slide 3 has corresponding internal grooves and ribs by which the breech-slide when placed from the rear upon the frame, is vertically confined upon the same, and guided thereon in its rearward and forward movements in opening and closing the breech of the barrel.

In rear of the barrel, the frame 1 extends downward and rearward forming the grip of the pistol, the hollow interior of the grip is the seat for the cartridge magazine 5, which is inserted from below into the seat and confined therein bv the pivoted magazine catch 6, which may be at will forced rearward to release the magazine for removal or for entering a magazine into the grip.

In rear of the magazine seat, the grip and the upper part of the frame are provided with a central recess in which the butt piece or mainspring housing 4, the hammer 7, the sear 8, and the sear spring 9 are seated, the mainspring housing 4 thus forms the central rear portion of the butt of the grip, and its upper end extends through and projects above the top of the frame.

The forward portion of the breech-slide 3 is solid and forms the breech-bolt provided with a central firing pin 10 and firing pin retracting spring 11 which are confined in the breech-bolt by a vertical locking pin 12, as clearly shown in Figs. 3 and 4. The breech-bolt also carries in its right side the usual shell extractor 13 and has in its under side two grooves for receiving the upper edges of the sides of the cartridge magazine 5, see Fig. 5. In rear of the breech-bolt the breech-slide 3 is recessed from the bottom upward, for the reception of the top of the hammer and the upper end of the butt piece 4, the rear end of said recess being closed by an imperforate wall which fits upon the top of the frame 1, thus positively preventing any rearward escape of powder-gases.

As clearly shown in Figs. 4 and 6, on the left side of the central firing pin seat, the re-action spring 14 and its guide rod 15 are seated in the breech-bolt so as to extend rearward into the recess in the breech-slide, the forward end of said spring 14 thus resting in the breech-bolt holds the same yieldingly forward and the rear end of the spring and of its guide rod being supported by the upper end of the butt piece 4, in the face of which is provided a recess for receiving and holding the reduced rear end of the guide rod 15, see Fig. 1. Just in rear of the breech-bolt a small hole is bored transversely through the breech-slide 3 in such a position that a pin may be inserted transversely through the breech-slide when the reaction spring and its guide rods are in their forward compressed position; this transverse pin thereby confines the re-action spring 14 and its guide rod 15 in the breech-bolt as indicated by dotted lines in Figs. 4 and 6. Whenever the breech-slide is in its rearmost position on the frame, the re-action spring 14 and its guide rod 15 are forced to this forward compressed position and the upper forward corner of the butt piece 4 is cut away so as to allow the transverse pin to be inserted between the guide rod and the butt piece, thus locking spring and guide rod in the breech-bolt. If now the breech-slide is moved forward, the guide rod and spring confined by the pin, move therewith and release the butt piece 4 which may then be removed from the frame, as hereinafter described, thus leaving the breech-slide 3 free for removal rearwardly from the top of the frame.

The hammer 7 is pivotally mounted upon the transverse hammer pin in the frame, in rear of the magazine seat; a strut 16 pivoted to the rear of the hammer hub extends downward into the butt piece 4, in which the mainspring 17 and the mainspring piston 18 are located, being confined therein by a small transverse pin 18^a near the top of the mainspring seat in the housing. The end of the hammer strut 16 rests in a recess in the top of the piston 18, the strut thus transmits the tension of the mainspring 17 to the hammer 7, tending to swing the top of the hammer upward into the recess in the breech-slide and against the rear end of the firing pin 10.

In front and below the hammer, the sear 8 is pivotally mounted upon a transverse pin, its upper arm extends upward to the front of the central hub of the hammer 7, and its end forms the sear point adapted to engage the full-cock notch of the hammer 7. The

lower arm of the sear extends downward from its pivot and is acted upon by the upper end of the sear spring 9, the tension of which thus causes the sear point of the upper arm of the sear to engage the hammer. The upper arm of the sear 8 carries on its left side an upward extension, the left side of the hammer being cut away to allow this extension of the sear to be located on the left side of the hammer hub and between the same and the left side wall of the frame.

The sear spring 9 extends downward between the rear wall of the magazine seat and the front face of the butt piece 4, which compresses the sear spring 9, while the lower end of the spring rests against the magazine catch 6, thus the tension of the spring 9 also serves to hold the catch 6 in its operative magazine engaging position.

In rear of the magazine catch a transverse pin 19 is fixed in the grip, and the lower end of the butt piece 4 has a semi-circular recess for engaging said pin, see Fig. 1, thus the lower end of the butt piece is downwardly and rearwardly supported in position by said transverse pin 19, the tension of the mainspring 17 yieldingly holding the butt piece down upon the pin 19. An upward pressure against the lower end of the butt piece 4, while the breech-slide is in its forward position and while the re-action spring and its guide rod are confined in their forward compressed position by the transverse pin, as hereinbefore described, will cause the butt piece to move upward until it is free from its hold upon the pin 19, when the butt piece may be removed rear- and downwardly from the frame, thereby releasing the breech-slide for removal from the frame.

The frame in front of the grip carries the trigger-guard into which the finger-piece of the trigger 20 depends, the hub of the trigger being pivoted in a circular recess cut from the left side into the frame, above said guard. The pivot pin 21 of the trigger, shown detached in Fig. 10, is inserted through the hub of the trigger into the frame from the left side; this trigger pivot pin 21 carries on its left end a washer affixed thereto and closely fitting the recess in the frame, thus limiting the lateral movement of the pivot pin and supporting its left end.

Above its hub and pivot, the trigger 20 carries a circular extension, so that a pull on the finger-piece of the trigger will cause the upper circular extension to move forward, the frame having a second circular recess connected with the lower one to receive the upward extension of the trigger and to allow its free movement.

In the forward portion of the frame, beneath the barrel, in a longitudinal central hole, the helical trigger spring 22 is located, its rear end pressing upon a piston 23, its front end being supported by a plug 24 fixed in the frame by a small transverse pin.

The piston 23, as clearly shown in Figs. 7 and 8, is cut away on each side at its rear end, so as to form a narrow, vertical fin which extends into a corresponding vertical groove or recess in the front of the upward trigger extension; the piston 23 and the recess in the trigger serve to lock the trigger in the frame from which it cannot be removed until after the plug 24, the trigger spring 22 and the piston 23 have been forwardly removed from the frame.

From the upper circular recess of the trigger seat in the frame, a horizontal groove is cut rearwardly in the left side of the frame, see Figs. 7 and 8, for the reception of the trigger-bar 25 by which the movements of the trigger are transmitted to the firing mechanism in rear of the magazine seat. This trigger-bar 25, clearly shown detached in Fig. 11, has at its front end an integral laterally extending arbor which fits into a corresponding circular seat provided for it in the upper extension of the trigger, thereby pivotally attaching the bar 25 to the trigger. The front of the arbor has a vertical groove which, when the arbor is seated in the upper trigger extension, corresponds with the vertical groove or recess in said extension and permits the narrow rear fin of the piston 23 to enter through the trigger extension into the groove in the arbor and allows the rear end of the fin to press upon the vertical bottom of said groove. By this construction, the rear end of the piston 23 pressing upon the bottom of the groove in the arbor transmits the tension of the trigger spring to the arbor of the trigger-bar 25 and through it to the trigger 20, thus holding the trigger yieldingly in its inoperative position, with its finger-piece in its forward position. See Figs. 1, 7, and 8. The rear end of the piston 23 also serves to lock the arbor and through it the trigger-bar 25 to the trigger and to yieldingly hold the trigger-bar with its rear end raised, as shown in Fig. 1.

At its rear end, the trigger-bar is provided with an upward and inward projection which rises into the path of the breech-slide and extends through an opening in the side of the frame to the rear of the upward extension of the sear 8. The lower left-hand edge of the breech-slide bears upon this projection so as to force down the rear end of the trigger-bar 25 whenever the breech-slide moves rearward from its closed position. To allow the trigger-bar to rise when the breech-slide is in the closed or firing position, a recess 26 is cut into the lower left-hand edge of the slide so located as to be above the projection of the trigger-bar and to allow the same to rise into the recess 26

when the slide arrives at its closed firing position; but so that the inclined forward end of said recess at once depresses the trigger-bar as soon as the breech-slide moves rearward, as under its recoil on firing.

This construction forms the automatic safety of the pistol by positively preventing firing unless the breech-slide is in its forward closed position, when a rearward pull on the trigger will cause the trigger-bar to move forward so that the face of the inward projection on its rear end will engage the rear face of the upward extension of the sear 8, and transmit the motion of the trigger to the sear and cause the same to release the hammer for firing a shot.

Just below its upper end the sear extension has a recess open at the rear into which the inward projection of the trigger-bar 25 will enter whenever the trigger-bar is moved forward while its rear end is depressed by the edge of the breech-slide when the same has moved rearward from its forward firing position, so that the movement of the trigger and trigger-bar in that case will not be transmitted to the sear, and the sear will retain its hold upon the hammer, thus preventing firing.

This construction and operation, besides acting as an automatic safety, as just described, also serves to control the firing of the pistol, by preventing more than one shot to follow upon each pull of the trigger.

When the trigger is pulled and a shot is fired, the breech-slide at once recoils, ejects the empty shell, depresses the rear end of the trigger-bar, cocks the hammer, and is returned forward by the re-action spring, thus again loading the pistol by transferring a cartridge from the magazine to the chamber of the barrel and making it ready for firing another shot. These automatic operations occur very rapidly and are completed before the pull upon the trigger has ceased and before the finger can release the trigger. At the first recoil of the slide, the rear end of the trigger-bar is depressed and the lateral projection on the bar loses its hold on the rear face of the sear extension and enters into the recess below the face. This leaves free the sear so that, under the action of the sear spring, it again engages the hammer as soon as the recoiling slide has forced the hammer rearward and downward, so as to cock the same, and holds it cocked ready for the next shot. On the return of the breech-slide forward, the recess 26 in the edge of the slide is again brought over the projection of the trigger-bar and the end of the bar would at once be raised by the trigger spring if this were not prevented by the top of the sear extension above the recess which top continues to hold the bar in its depressed position, until the pull on the trigger is released and the finger-piece of the trigger is allowed to return forward, thereby moving the trigger-bar reaward and allowing the pojection of the bar to escape from the recess in the sear, then the bar will be raised bringing its projection into line with the rear face of the sear extension, ready to engage the sear if the trigger is again pulled. By this arrangement, only one shot can follow upon each pull of the trigger.

To close the open seats of the trigger and trigger-bar, a side plate 27 is provided upon the left side of the frame. In Fig. 12, the side plate is shown detached and in Fig. 2 the side plate is represented in its place upon the left side of the frame. This side plate consists of a thin plate of tempered steel, in its central portion slightly buckled outwardly, and has a central hole for the reception of the stud 28, which is fixed in the frame and projects from the left surface of the frame; the stud 28 has an annular recess between the frame and its outer end, laterally equal to the thickness of the side plate. The side plate 27 has near its forward lower end a hole to freely fit over the outwardly projecting reduced end of the trigger pivot pin 21, and at its rear end the side plate has a rearward and downward extension in which a recess is cut for the reception of the end of the sear pivot pin.

When the side plate 27 is put upon the side of the frame so that the stud 28 and the ends of the trigger pivot pin and of the sear pin project through the plate, a downward and inward pressure upon the face of the plate will cause the same to engage the annular recess in the stud 28 and thereby hold the side plate firmly upon the side of the frame. The upper edge of the side plate, when in position, corresponds with the groove provided in the frame for the reception of the lower left edge of the breech-slide, so that whenever the breech-slide is mounted upon the frame, its lower edge holds the side plate in the stud-engaging position, and thereby prevents its removal from the frame until after the breech-slide has been removed from the same.

The transverse pin upon which the hammer 7 is pivotally mounted in the frame, extends beyond the left side of the frame and there carries an integral manually operated locking catch 29, as clearly shown in Fig. 2. The rear end of the catch 29 is provided with an upwardly extending projection fitting into a correspondingly shaped recess in the lower left edge of the breech-slide, below said projection the catch has on its outside a thumb piece by which it is adapted to be at will pressed upward or downward by the thumb of the hand grasping the grip of pistol. The catch extends also forward of the hammer pivot pin and carries on its inner face an inwardly projecting pin 30 which extends through a slot in the side of

the frame into a position in front of the sear point. When the rear end of the catch is raised as described, to lock the breech-slide, the inwardly projecting pin 30 on the catch is brought in front of the sear point thereby positively locking the sear if the same holds the hammer in the cocked position; but when the hammer is in its down position, the sear point being thereby moved into its forward position stands directly below the inwardly projecting pin 30 which thus is prevented from being moved to the front of the sear; so that when the pistol is closed, the safety catch 29, by being movable or immovable, will at once indicate if the hammer is cocked or not, as only with the hammer cocked can the catch be moved upward to lock the breech-slide in its forward position and at the same time lock the sear against releasing the hammer. When the breech slide is in the rearmost, open position, the manual safety catch 29 may be at will pressed upward to lock the slide in that position, a second smaller recess in the edge of the slide, somewhat in front of the locking recess described, allows the rear edge of the projection on the catch 29 to hold the slide open, until it is released by a downward pressure upon the catch. From the partly circular front face of the catch extends a thin forwardly projecting lip which will be caught under the rear edge of the side plate 27 when the same is adjusted upon the left side of the frame, as heretofore described; by this means, the side plate also serves to lock the safety catch and hammer pivot pin laterally in the frame and to yieldingly hold the catch in either the raised or the depressed position.

The cartridge magazine has the usual form of a tubular holder in which the cartridges may be held one upon the other. Fig. 13 clearly shows the cartridge magazine in three views. The rear portion of the top of each side of the magazine is turned inwardly so that the turned in edges will overhang the head of the topmost cartridge in the magazine and thereby prevent the cartridges from escaping from the magazine, unless they are successively pushed forward so as to escape from the overhanging edges of the magazine. In Fig. 5, this construction of the top of the magazine is clearly indicated as are also two grooves in the bottom of the breech-bolt into which the overhanging edges of the magazine may enter when the same is pushed into its position in the grip of the pistol with the breech-bolt in the forward position. A follower and a follower spring in the magazine serve to press upward the cartridges therein and the bottom of the magazine is closed by a bottom plate affixed thereto. The right-hand side of the magazine is slotted and a button, the inner end of the stem of which extends through the slot into the follower, serves to at will depress the follower so as to facilitate the loading of cartridges into the magazine. When, as shown in Fig. 1, the cartridge magazine is in the grip with some cartridges therein, and after firing the breech-bolt recoils, the topmost cartridge will be raised by the follower so that a portion of its head will project into the path of the breech-bolt and on the ensuing forward movement of the breech-bolt under the tension of the re-action spring, the face of the breech-bolt will engage the upwardly projecting head of the topmost cartridge in the magazine and press the same forward from the magazine into the chamber of the barrel. As long as the head of the cartridge to be transferred to the barrel, remains under the overhanging edges of the sides of the magazine, the head of the cartridge cannot rise while the forward movement of the breech-bolt and cartridge forces the bullet upward into the barrel; this steeply inclined position of the cartridge, while being fed to the barrel, is apt to block the free forward movement of the breech-slide and interfere with the working of the pistol; to overcome this drawback an inwardly projecting rib inclined forward and upward has been formed in each side of the magazine forward of the overhanging lips, when the head of the cartridge escapes from the overhanging sides of the magazine, the sides of the cartridge head will strike these ribs and, under the forward movement of the breech-bolt, the head of the cartridge will be forced to rise being guided upon the inclined ribs, and to assume a horizontal position in front of the breech-bolt, which then may readily push the cartridge home into the chamber of the barrel.

It will be understood that several of the features of my improvements herein described are not necessarily combined in the same structure with one another, nor are they necessarily employed in a firearm of the particular character of that shown. Obviously, also, various changes in form and arrangement of parts may be made within the scope of the invention.

I claim as my invention:

1. In a firearm, the combination of a frame having an upward extending front abutment and a downward extending grip, and having an open top in rear of the abutment, a barrel rigidly supported by the frame in the abutment, a breech-slide mounted from the rear upon the frame and vertically locked to reciprocate thereon, and comprising a breech-bolt for opening and closing the barrel, and having a recess in rear of the breech-bolt and an imperforate rear wall closing said recess, and a butt piece removably mounted in the frame and

projecting above the top thereof into said recess in the breech-slide, whereby said butt piece limits the rearward movement of the breech-slide and confines the same upon the frame.

2. In a firearm, the combination of a frame having an upward extending front abutment and a downward extending grip, and having an open top in rear of the abutment, a barrel rigidly supported by the frame in the abutment, a breech-slide mounted from the rear upon the frame and held thereon by ribs on the breech-slide engaging grooves in the frame, and comprising a breech-bolt for opening and closing the barrel, and having a recess in rear of the breech-bolt and an imperforate rear wall closing said recess, and a butt piece removably mounted in the frame and projecting above the top thereof into said recess in the breech-slide, whereby said butt piece limits the rearward movement of the breech-slide and confines the same upon the frame.

3. In a firearm, the combination of a frame having an upward extending front abutment and a downward extending grip, and having an open top in rear of the abutment, a barrel rigidly supported by the frame in the abutment, a breech-slide mounted from the rear upon the frame and vertically locked to reciprocate thereon, and comprising a breech-bolt for opening and closing the barrel, and having a recess in rear of the breech-bolt and an imperforate rear wall closing said recess, a butt piece removably mounted in the frame and projecting above the top thereof into said recess in the breech-slide, whereby said butt piece limits the rearward movement of the breech-slide and confines the same upon the frame, and a re-action spring seated in the breech-bolt and extending rearward through said recess to the butt piece, whereby said re-action spring yieldingly holds said breech-slide forward.

4. In a firearm, the combination of a frame having an upward extending front abutment and a downward extending grip, and having an open top in rear of the abutment, a barrel rigidly supported by the frame in the abutment, a breech-slide mounted from the rear upon the frame and vertically locked to reciprocate thereon, and comprising a breech-bolt for opening and closing the barrel, and having a recess in rear of the breech-bolt and an imperforate rear wall closing said recess, a butt piece removably mounted in the frame and projecting above the top thereof into said recess in the breech-slide, whereby said butt piece limits the rearward movement of the breech-slide and confines the same upon the frame, and a re-action spring seated in the breech-bolt and extending rearward through said recess to the butt piece, and carrying a guide rod in its rear portion, the rear end of said guide rod seated in said butt piece, whereby said re-action spring yieldingly holds said breech-slide forward.

5. In a firearm, the combination of a frame having an upward extending front abutment and a downward extending grip, and having an open top in rear of the abutment, and having a hammer pivotally mounted in the frame in rear of the grip, a barrel rigidly supported by the frame in the abutment, a breech-slide mounted from the rear upon the frame and vertically locked to reciprocate thereon, and comprising a breech-bolt for opening and closing the barrel, and having a recess in rear of the breech-bolt for receiving the hammer and an imperforate rear wall closing said recess, and a butt piece removably mounted in the frame and projecting above the top thereof into said recess in the breech-slide, whereby said butt piece limits the rearward movement of the breech-slide and confines the same upon the frame.

6. In a firearm, the combination of a frame having an upward extending front abutment and a downward extending grip, and having an open top in rear of the abutment, and having a hammer pivotally mounted in the frame in rear of the grip, a barrel rigidly supported by the frame in the abutment, a breech-slide mounted from the rear upon the frame and vertically locked to reciprocate thereon, and comprising a breech-bolt for opening and closing the barrel, and having a recess in rear of the breech-bolt for receiving the hammer and having an imperforate rear wall closing said recess, a butt piece removably mounted in the frame and projecting above the top thereof into said recess in the breech-slide, and a mainspring seated in said butt piece and connected with the hammer to yieldingly hold the top of the hammer in said recess, said mainspring yieldingly holding said butt piece interlocked with the frame whereby said butt piece limits the rearward movement of the breech-slide and confines the same upon the frame.

7. In a firearm, the combination of a frame having an upward extending front abutment and a downward extending grip, and having an open top in rear of the abutment, and having a hammer pivotally mounted in the frame in rear of the grip, a barrel rigidly supported by the frame in the abutment, a breech-slide mounted from the rear upon the frame and vertically locked to reciprocate thereon, and comprising a breech-bolt for opening and closing the barrel, and having a recess in rear of the breech-bolt for receiving the hammer and having an imperforate rear wall closing said recess, a butt piece mounted in the frame and projecting above the top thereof into said recess in the

breech-slide, a mainspring seated in said butt piece and connected with the hammer to yieldingly hold the top of the hammer in said recess, and a transverse pin fixed in the grip, the lower portion of said butt piece adapted to engage said transverse pin, whereby said mainspring yieldingly holds said butt piece interlocked with said transverse pin, and whereby said butt piece may be disengaged from said pin for removal and for releasing the breech-slide for removal from the frame.

8. In a firearm, a frame having a downward extending grip, a hammer and a sear mounted in the frame in rear of the grip, a trigger pivotally mounted in front of the grip and a trigger-bar pivotally mounted in the trigger and connecting the trigger with the sear, a trigger spring seated in the frame and holding the trigger in inoperative position and holding the trigger-bar in operative position, means for confining the trigger spring in the frame and interlocking means between the trigger spring and the trigger and trigger-bar, whereby the trigger and trigger-bar are removably locked in the frame.

9. In a firearm, the combination of a frame and a barrel rigidly supported by the frame, a breech-slide mounted to reciprocate upon the frame, a hammer and a sear pivotally mounted in the frame in rear of said grip, and a trigger pivotally mounted in the frame in front of the grip, an upward extension on said trigger carrying a rearward extending trigger-bar connecting the trigger with the sear, and a trigger spring seated in the frame and carrying a piston, said piston having a flat rear portion and said trigger and trigger-bar each having a groove to receive the rear portion of said piston, means for confining said trigger spring and piston in the frame, whereby said trigger spring will hold said trigger in inoperative position and hold said trigger-bar in operative position and lock said trigger and trigger-bar in the frame.

10. In a firearm, a frame having a downward extending grip, a hammer and a sear pivotally mounted in the frame in rear of said grip, a trigger pivotally mounted in front of said grip and a trigger-bar pivotally mounted in the trigger and connecting the trigger with the sear, said trigger and said trigger-bar each being seated in an open recess in the side of the frame, a trigger spring seated in the frame and holding the trigger in inoperative position and holding the trigger-bar in operative position and holding the trigger-bar in operative position, means for confining said trigger spring in the frame, and a side plate mounted upon the frame and kept in place thereon by a recessed stud on the frame and by a hole in said side plate, whereby said side plate and said stud are interlocked.

11. In a firearm, a frame having a downward extending grip, a hammer and a sear mounted in the frame in rear of said grip and a trigger-bar pivotally mounted in the trigger and connecting the trigger with the sear, said trigger and said trigger-bar each being seated in an open recess in the side of the frame, a trigger spring seated in the frame and holding the trigger in inoperative position and holding the trigger-bar in operative position, a side plate mounted upon the frame and kept in place thereon by a stud on the frame and a hole in said side plate, and a slide lock pivotally mounted on the side of the frame for manual operation, said slide lock extending under said side plate, whereby said side plate yieldingly keeps said slide lock in position.

12. In a firearm, the combination of a frame, a barrel rigidly supported by the frame, the frame having an open top in rear of the barrel, a breech-slide mounted from the rear upon the frame and vertically locked to reciprocate thereon, and comprising a breech-bolt for opening and closing the barrel, and having a recess in rear of the breech-bolt and an imperforate wall closing said recess, a butt piece removably mounted in the frame and projecting above the top thereof into said recess in the breech-slide, whereby said butt piece limits the rearward movement of the breech-slide and confines the same upon the frame, and a re-action spring seated in the breech-bolt and carrying a guide rod extending rearward through said recess to the butt piece, said breech-slide provided with a transverse aperture for the insertion of means for locking said re-action spring and said guide rod in their compressed position in said breech-bolt, substantially as and for the purpose described.

This specification signed and witnessed this twentieth day of March, A. D. 1917.

JOHN M. BROWNING.

In the presence of:

C. J. EHBETS,

A. L. ULRICH.