

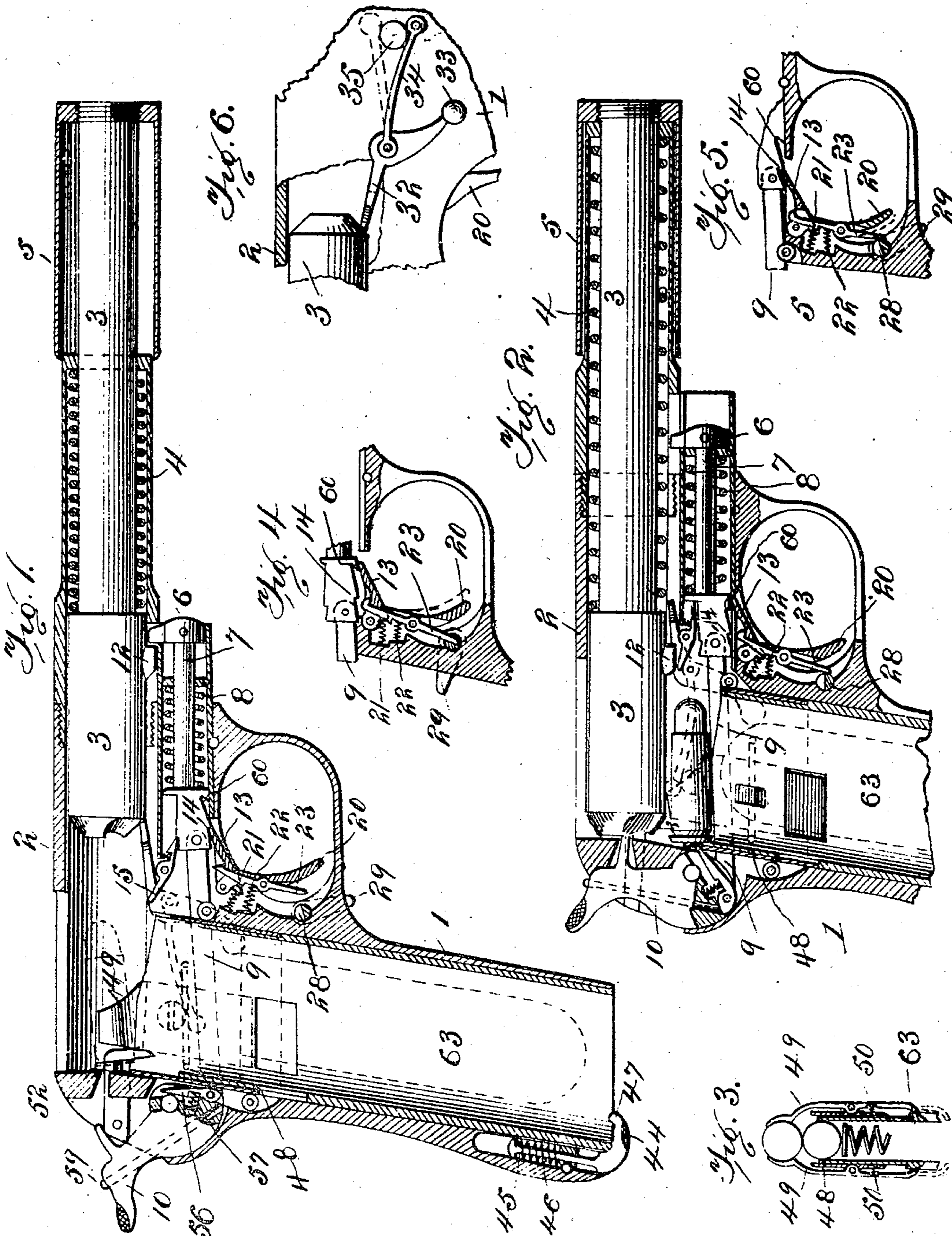
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A. BURGESS.
AUTOMATIC GUN.

(Application filed May 23, 1901.)

(No Model.)



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AUTOMATIC GUN.

SPECIFICATION forming part of Letters Patent No. 693,106, dated February 11, 1902.

Application filed May 23, 1901. Serial No. 61,541. (No model.)

To all whom it may concern:

Be it known that I, ANDREW BURGESS, residing at Owego, in the county of Tioga and State of New York, have invented certain new and useful Improvements in Automatic Guns, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to improvements in automatic firearms.

The object of the invention is to improve weapons, especially pistols, of this class, although the improvements are applicable to other guns.

Figure 1 is a longitudinal central section of a pistol, showing the essential features of this invention, the barrel being in its forward position. Fig. 2 is a similar view, partly broken away, showing barrel in closed position. Fig. 3 is a cross-section of upper portion of magazine, showing cartridge-clamping device. Fig. 4 is a detail section of the trigger and connections as arranged for rapid firing. Fig. 5 is a similar view of like parts in a different position for slow firing. Fig. 6 is a broken detail elevation showing thumb-piece acting as a barrel-detent.

The numeral 1 indicates a stock, preferably in form of a pistol-stock, and 2 denotes the frame or receiver. 3 is a barrel adapted to move forward in the receiver when fired, and 4 is a spring which restores the barrel to closed position. The shield or cover 5 serves also as a guide to hold the barrel in proper position. All these parts are old in their construction and general relation.

Directly under the barrel there is a piston-head 6, which is attached to a rod 7, which slides in a recess in the frame. A spring 8, bearing on a fixed abutment in the frame and on a shoulder on the piston-rod, tends to throw the rod 7 backward or toward the recoil-shield. A pitman or connecting-rod 9 is pivoted to the piston and to the hammer 10, which hammer is pivoted in the recoil-shield. Pitman 9 bends around the magazine. The forward movement of the barrel brings a projection 12 on the barrel into contact with the piston-head 6, and, drawing said piston and its pitman forward, cocks the piece, as shown in Fig. 1. The piston is there held by the

sear 13 engaging the notch 14 in the piston. The piston is also preferably engaged by a dog 15, which is pivoted in the frame and rocked by a small spring 16, so as to engage the piston when the barrel is forward. The rearward movement of the barrel causes it to engage the rear end of the dog 15 and by rocking said dog release it from the head of the piston 7; but when the barrel is forward dog 15 will hold the piston forward whether sear 13 is in engagement with the piston or not. (Half-cock notch is shown at 60.) The backward movement of the piston 7 and pitman 9 (under impulse of the spring 8) rocks the hammer 10 and fires the gun, if the conditions are prepared for firing. The sear 13 is hung on the same pivot as the trigger 20 and is pressed to engagement by the spring 21, having bearing in the frame. The trigger by choice is also forked and is hung between the forks of the sear, and the coupling-lever 23, pivoted in the trigger, rests centrally between the forks of the sear and trigger. The coupling-hook 23 extends up through the fork of the sear 13 and normally engages with a projection of said sear, the hook being pressed forward by the trigger return-spring 22. When the trigger is pulled, the trigger and sear being in the position of Fig. 4, the trigger carries the hook 23 along with it, and the hook 23 draws on the sear, thus releasing the sear from the notch 14 in the piston in the ordinary manner and (if the dog 15 be also released) permits the spring 8 to throw back the piston and operate the hammer to fire the cartridge; but if the dog 15 be in engagement with the piston the pull of the trigger is ineffective until projection 12 on the barrel comes back and releases the dog 13, which dog then acts as a sear to release the piston and permit the firing. By holding the trigger and sear back (and it is in this position hardly possible to release the trigger quickly enough to prevent a succession of shots) the sear will be prevented from rising far enough to enter the notch 14 in the piston, and so the firing will be successive as long as there are cartridges in the magazine. The barrel moves forward with the first fire, cocks the arm by the engagement of the projection 12 with the piston, holds it cocked by

dog 15 until the barrel is about closed, and releases the piston by engagement of the projection 12 with dog 15.

While I have described a reciprocating piston as operating the hammer, it is obvious that the same sear-and-trigger connection might be made to other forms of firing device.

The stop 28 is shown as an eccentric in rear of the lower end of coupling-lever 23. This stop is operated by a small finger-piece 29, extending outside the frame. When the stop is turned forward, as in Fig. 5, its engagement with the coupling-hook 23 (when the trigger-pull moves it back) is such that the coupling-hook is detached from its engagement with the sear 13 as soon as said sear has been detached from engagement with the piston. The trigger may then move on; but the sear will be raised by the spring 21 and will be in position to engage and stop the piston when it has been again moved forward by the entrance of the nose of the sear into the notch 14. It will then be necessary to let the trigger move forward by force of its spring 22 before the coupling-hook 23 can again engage the sear. This engagement is effected in the usual manner of engagement of a pawl or coupling-hook which rides over the projection of the sear in one direction.

For convenience in loading and also to moderate the rapidity of firing at will the barrel may be held in its forward or open position by the check 32, which is pivoted in the frame and has a thumb-piece 33, extending outside the stock, in position to be just under the thumb of the hand grasping the stock. By slightly pressing down on this piece 33 the check 32 will be thrown up in rear of the barrel, and the barrel will thus be prevented from moving back. A spring 34 is preferably attached to the check 32, and this spring can be swung either above or below the button 35 on the side of the stock. When swung below the button or knob, the spring acts to operate the check to stop the barrel with each fire until the check is released by the action of the thumb on the thumb-piece 33. The rear end of the spring 34 may be shifted above the button 35, as shown in dotted lines in Fig. 6, when the said check can only be made operative to hold the barrel by pressing forward on its thumb-piece 33.

The magazine is in many respects similar to that shown in my Patent No. 666,084, of January 15, 1901. The body of the magazine is a thin metal box 63, which fits in a corresponding receptacle in the stock of the pistol or gun, as is usual.

A hook 44, having a stem 45 in the stock, is pressed upward by a coiled spring 46, surrounding the stem of the hook. This spring bears the hook upward and also permits it to swing around with the stem as a center. The point of the hook enters a slight depression 47 in the bottom of the magazine when in place, which prevents the hook from swinging

sidewise. The hook is lifted and holds and lifts the magazine by the action of spring 46.

The magazine has a telescopic extension 48 at its upper end. To this extension the jaws 49 are pivoted. The jaws 49 are pressed outward below their pivots by springs 50. These springs serve to close in the upper ends of the jaws, so as to embrace the top cartridge. The upper front corners of the jaws 49 are inclined, as indicated in Fig. 1. The backward movement of the barrel in closing against the recoil-shield 52 brings the barrel against these jaws to force them down, as in the patent referred to.

The present case differs from the above-mentioned patent in the matter of the jaws and magazine extension in that the present jaws are made to grasp the cartridges both above and below the center, as indicated in Fig. 3 herein, and the jaws are closed on the top cartridge by the springs 50. In other respects the jaws are as described in said patent, and the extractor and shell-ejector are preferably as described in said patent.

To insure the positive upward movement of the magazine or its extension 48, the hammer 10 has a pawl 56 pivoted thereto and pressed outward by a spring 57. The pawl engages a notch in the upper part of the magazine extension and lifts this extension in the same manner that the pawl of many well-known revolvers operates to rotate the cylinder. If the extension should fail to slide on the upper part of the magazine, it is evident that the device as described will raise the whole magazine and contained cartridges. The magazine has the usual spring and follower, as described in the patent referred to. A pin 59, extending through the hammer against the pawl 56, enables the pawl to be pressed out of engagement with the magazine, so that the hammer may be cocked by hand without having the pawl lock against the magazine, as would be the case with the hammer down.

The operation of my device is as follows: Assuming the magazine to be filled with cartridges and one in the barrel, closed as in Fig. 2, and the hook-stop in position to detach the coupling-hook and release the sear, as in Fig. 5, now when the hammer has been cocked and the trigger is pulled the coupling-hook draws down the sear and releases the piston, which, as has been explained, causes the hammer to fall and fires the cartridge. The firing of the cartridge moves the barrel forward to the position of Fig. 1. The empty shell is ejected as the magazine or its extension lifts under the impulse of the pawl 56, being assisted by the spring 46. The sear 13 being freed from the coupling-hook by action of hook-stop 28 rises and engages the notch 14 and holds the piston in cocked position, as shown in Fig. 5. The dog 15 also engages the piston, but is released when the barrel moves back. The backward movement of

the barrel under impulse of the spring 4 causes the barrel to close over the cartridge in the jaws 49 and then spreads and forces down said jaws until they close on the next 5 cartridge. The firing then stops unless the trigger be released to spring forward, when the coupling-pawl again engages the sear and pulls it down to repeat the firing. If the stop 28 be turned to inoperative position, as in Fig. 10 4, it does not disconnect the coupling-hook, and the firing will be quickly repeated, as has been explained, unless the thumb be operated to move the barrel-check to its obstructive position. When the device is intended 15 to be carried at "safety," the sear 13 is dropped into the notch 60 in the piston 7.

What I claim is—

1. In an automatic gun, the combination of a longitudinally-reciprocating barrel, a connection to the hammer, a plurality of sears 20 engaging said hammer connection, an abutment carried by the barrel by which one of these sears is detached, and a trigger and connections whereby the other sear may be dis- 25 engaged, all combined.

2. In a gun as described, the combination with a reciprocating barrel, of the reciprocating piston and means for moving the same, a sear engaging said piston, a trigger and a 30 coupling-piece whereby the trigger is engaged with the sear, or released therefrom, substantially as described.

3. In an automatic gun, the combination with the reciprocating barrel, a firing device, 35 and a sear having engagement therewith to hold the gun cocked, of a trigger having a coupling-piece connected thereto for connection with the sear, and a movable stop in the frame by which said coupling-piece may be 40 released from the sear, substantially as described.

4. In a gun as described, the sliding barrel, piston, and sear engaging said piston, the trigger pivoted on the pivot of said sear, springs 45 bearing to rock both sear and trigger forward, a coupling-hook pivoted to the trigger and a spring bearing said hook into engagement with the sear, and a movable abutment in the frame, which by its position may dis-

engage said coupling-hook from the sear or 50 otherwise, substantially as described.

5. In an automatic gun, the combination of a reciprocating barrel and a movable check-piece on the stock, under control of the thumb 55 of the hand which grasps the stock to fire the gun, whereby the check-piece may be moved to stop the barrel movement.

6. In an automatic gun, the combination of a reciprocating barrel, a pivoted check-piece on the stock under control of the thumb of 60 the hand that fires the gun, and a spring to hold the check-piece in adjusted position.

7. In an automatic gun, the combination of a reciprocating barrel, a check-piece pivoted to the stock in position to be moved by the 65 thumb of the hand grasping the stock, a spring connected to said check-piece, and a button on the stock against either side of which the spring may bear.

8. In an automatic gun, the combination 70 with the reciprocating barrel, of the magazine, jaws pivoted to the magazine and extending upward and constructed to embrace the top cartridge above and below its center, means for lifting the jaws, and inclines on 75 said jaws, which by the engagement of the barrel depress the jaws, and springs between the jaws and magazine by which the jaws are closed.

9. In a gun as described, the stock having a 80 magazine-receptacle, a magazine in said stock and vertically movable in direct line therein, and the hammer or other movable part of the firing mechanism having a pawl which en- 85 gages the magazine and lifts the same positively, all combined.

10. In a gun as described, the stock having a magazine-receptacle, the magazine therein, a spring operating to lift the magazine in the 90 stock, and a reciprocating barrel and positively-acting mechanism connected therewith coacting with the spring.

In testimony whereof I affix my signature in presence of two witnesses.

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Witnesses:

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