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L. STANGE

1,753,072

TRIGGER APPARATUS FOR THE SINGLE AND CONTINUOUS FIRE OF AUTOMATIC FIREARMS

Filed June 14, 1929

2 Sheets-Sheet 1

Fig. 1.

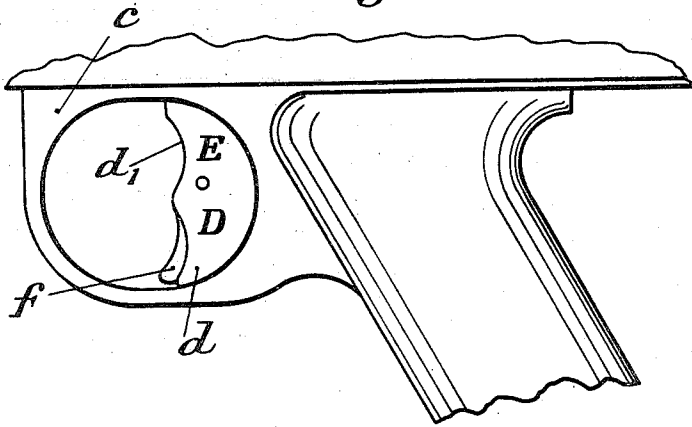
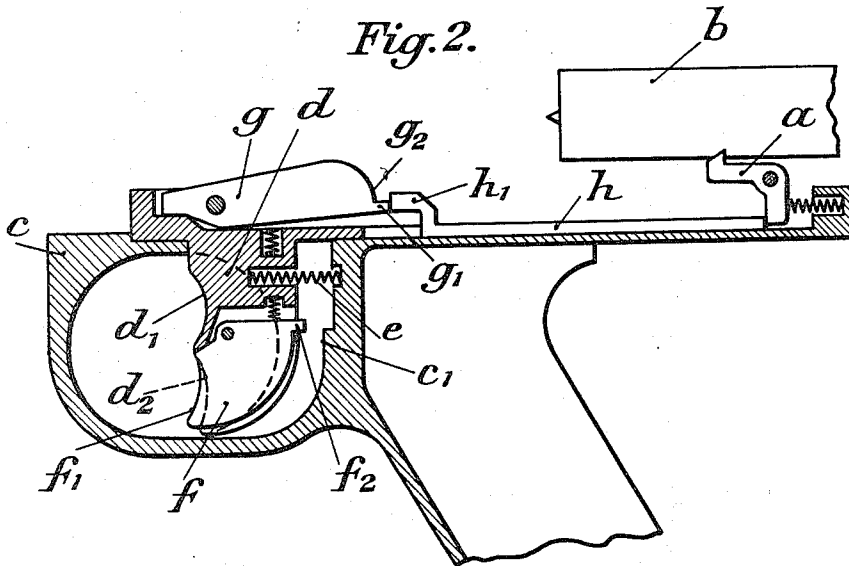


Fig. 2.



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Fig.3.

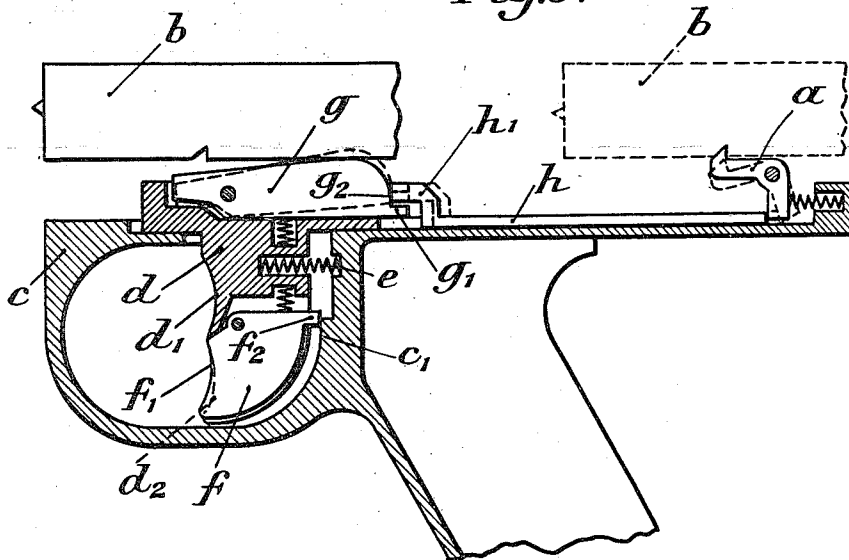
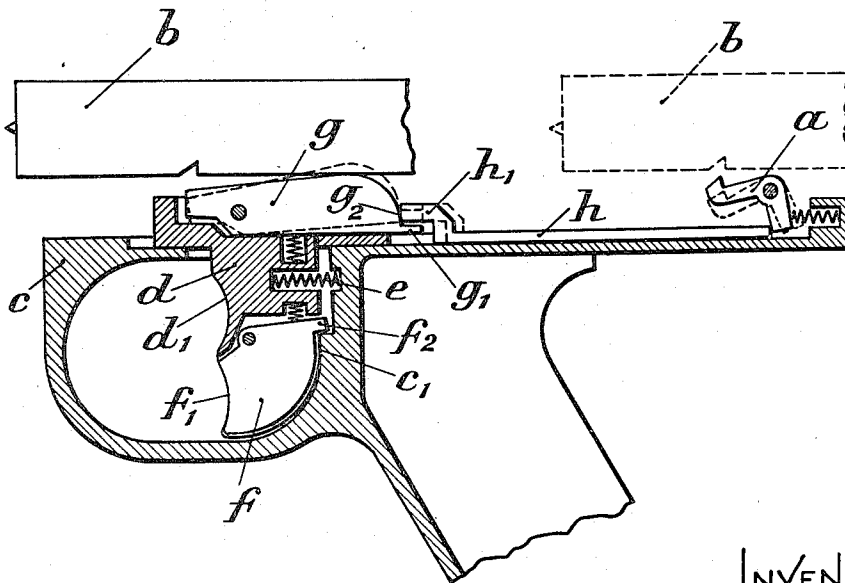


Fig.4.



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UNITED STATES PATENT OFFICE

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TRIGGER APPARATUS FOR THE SINGLE AND CONTINUOUS FIRE OF AUTOMATIC
FIREARMS

Application filed June 14, 1929, Serial No. 370,894, and in Germany November 9, 1928.

In known trigger apparatus in automatic firearms, adapted for single and continuous firing, the sear holding the firing apparatus in the end rear position against the pressure of the mainspring is released by the actuation of a single trigger member. On changing from one to the other kind of firing, a switch lever is actuated by hand to control the transmission members formed between the trigger and the sear. The necessary manual operations and change of grip distract, however, the attention of the firer from the target and interrupt the firing. Also when the firing is reopened after an interruption, care is necessary to ensure that the devices are set for the intended kind of firing.

The invention simplifies the adjustment for the kind of firing intended at any time and the change over from one to the other kind. The trigger device has separate trigger members for single and for continuous firing. These are connected by suitable known means with the device locking the firing apparatus, that is the sear, so that on pressing the one trigger member the sear is only temporarily removed and the firing apparatus is released for a single forward movement, after which the sear immediately again takes up as before, when the trigger member is released, its original locking position, while if the second trigger member, the one for continuous firing is actuated, the sear is withdrawn and remains withdrawn until, by releasing the pressure of the finger on the trigger, it is enabled to return to its original position. The two pivoted or displaceable trigger members can be disposed, with parts suitably formed to be gripped by the trigger finger, within the usual trigger guard, lying one behind the other at about a finger breadth apart. The connection between the trigger members and the sear can be effected simply, for example by the trigger member for single fire being provided with a sliding rod or the like which acts directly on the sear and after the sear has been removed from the locking position slides away from it, while the trigger member for continuous firing, when pressed, holds the sear constantly in the released position by a fixed projection. If the gripping parts of

the two trigger members are arranged over one another, the change from one kind of firing to the other is made very simply by an up and down movement of the trigger finger along these members without necessitating the loosening or relaxing of the grasp of the hand holding the weapon.

Instead of the usual trigger members, obviously also members formed differently, for example press knobs, can be used.

The accompanying drawing represents an example of a construction according to the invention, in which the two trigger members are arranged one over the other in combination with a preferred and advantageous arrangement for transmission between the trigger and sear.

Fig. 1 shows in side elevation an automatic firearm with the trigger and hand grip.

Fig. 2 is a longitudinal section of the weapon with the breech piece in the rear position and the trigger unpressed.

Figs. 3 and 4 are longitudinal sections of the trigger apparatus, as actuated, respectively, for single and continuous firing.

The weapon is, for example, of the kind in which the spring stressed sear *a* (Fig. 2) retains the breech piece *b* in the rear end position, from which it is driven forward before firing by the mainspring. The trigger member *d* is mounted in the trigger guard *c* rigidly connected with the casing of the weapon so as to be pressed rearward against the action of a spring *e*. At the front surface of the trigger member *d* two curved recesses *d*₁, *d*₂ are provided one over the other to which the trigger finger is applied. A correspondingly recessed front surface *f*₁ of a second trigger member *f* lies over the lower recess *d*₂; the member *f* being pivoted under spring restraint on the trigger member *d* and having at its rear end a projection *f*₂ which is opposite to and at a given distance from a shoulder *c*₁ of the trigger guard *c*. A block *g* is pivoted in the trigger member *d*, its upper inclined surface being inserted by the action of a spring into the path of the breech piece *b*. The nose *g*₁ of the block *g* lies against the hook-shaped end *h*₁ of a slide *h* adapted to engage with the sear *a*.

The action of the trigger device is as follows:—

For single fire (Fig. 3) the firer places one finger of the hand grasping the weapon into the upper recess d_1 of the trigger member d and draws the latter back as far as is allowed by the contact of the projection f_2 of the member f with the shoulder c_1 . The block g lifted into the position shown dotted in Fig. 3, takes with it the slide h which displaces the sear a into the dotted position. The released breech piece b is driven forward under the action of its mainspring for introducing and igniting a cartridge, and thereby forces the block g down, so that its nose g_1 is out of the range of the head h_1 of the slide h . The latter is now free, so that the sear again returns, under the action of the spring, into its locking position, presses the slide h forward and again locks the breech piece as it returns after the shot has been fired into its rear end position, although the trigger member d is still pressed. In order to fire another shot, the trigger member d is released, returns to its original position and the nose g_1 of the raised block g lies in front of the head h_1 of the slide h , whereupon, if the trigger member d is again pressed, the process described above is repeated.

For continuous fire (Fig. 4) the trigger finger is placed in the recess f_1 of the lower trigger member f which when pressed is swung upwards so that its rear projection f_2 is removed out of the way of the shoulder c_1 of the trigger guard c . The trigger member d is moved back with it over a distance further than in single firing. The sear a is, consequently, depressed by the block g and the slide h through a greater distance into the position shown dotted in Fig. 4. The forward moving breech piece b depresses, as in single firing, the nose g_1 of the block g out of the path of the head h_1 of the slide h which is pressed forward under the action of the sear a as it again swings upwards. The sear a is, by the contact of the head h_1 of the slide h with the shoulder g_2 of the block g , held in a preparatory position in which the breech piece b is not yet locked. The breech piece, recoiling after the first shot into its rear end position, again immediately moves unhindered forward and the weapon imparts a continuous fire until the pressed trigger is released and returns into its normal position.

I claim:

1. In a trigger apparatus of automatic firearms in combination a breech piece, a spring actuated sear for locking said breech piece, a trigger member for single fire movably arranged in a guard, a second trigger member for continuous fire also arranged movably in said guard, means for connecting said trigger members with said sear and means for locking said sear in its withdrawn position.

2. In a trigger apparatus of automatic firearms in combination a breech piece, a spring actuated sear for locking said breech piece, a trigger member for single fire movably arranged in a guard, a second trigger member for continuous fire also arranged movably in said guard, a shoulder provided at said guard, a projection extending rearwardly from said second trigger and adapted to engage said shoulder, a slide adapted to cooperate with said sear and a swingable block actuated by said triggers and said breech piece and adapted to be moved in and out the path of said slide.

3. In a trigger apparatus of automatic firearms in combination a breech piece, a spring actuated sear for locking said breech piece, a trigger member for single fire movably arranged in a guard, a second trigger member for continuous fire also arranged movably in said guard, a shoulder provided at said guard, a projection extending rearwardly from said second trigger and adapted to engage said shoulder, a slide adapted to cooperate with said sear and a swingable block actuated by said triggers and said breech piece and adapted to be moved in and out the path of said slide, so that by depressing said trigger member, for single fire, said sear is only temporarily withdrawn and said breech piece is released for a single forward movement, while by depressing said second trigger member, for continuous fire, said sear is withdrawn and remains withdrawn until, on relaxing finger pressure said second trigger member is returned into its original position.

4. In a trigger apparatus of automatic firearms in combination a breech piece, a spring actuated sear for locking said breech piece, a trigger member for single fire movably arranged in a guard, a second trigger member for continuous fire arranged movably in said guard below said first mentioned trigger member, means for connecting said trigger members with said sear and means for locking said sear in its withdrawn position.

5. In a trigger apparatus of automatic firearms in combination a breech piece, a spring actuated sear for locking said breech piece, a trigger member for single fire movably arranged in a guard, a second trigger member for continuous fire arranged in said first mentioned trigger member so as to be movable relatively thereto either rectilinearly or about a pivot, means for connecting said trigger members with said sear and means for locking said sear in its withdrawn position.

In testimony whereof I have affixed my signature.

LOUIS STANGE.