

UNITED STATES PATENT OFFICE.

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SINGLE-TRIGGER MECHANISM.

No. 864,826.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM H. BROWN, of Syracuse, in the county of Onondaga and State of New York, have invented a certain new and useful Single-Trigger Mechanism, of which the following is a specification.

My invention has for its object the production of a single trigger mechanism, particularly applicable for breech-loading firearms, which is especially simple in construction and highly durable and effective in use; and to this end, it consists in the combination, construction and arrangement of the parts of a single trigger mechanism, as hereinafter fully described and pointed out in the claims.

In describing this invention, reference is had to the accompanying drawing in which like characters designate corresponding parts in all the views.

Figures 1 and 2 are side elevations of a preferable embodiment of my single trigger mechanism, shown as operatively connected to parts of a double-barreled breech-loading firearm illustrated, partly in full lines, and partly in dotted lines, one of the firing members being shown in its inoperative position in Fig. 1 and in its operative position in Fig. 2. Fig. 3 is an enlarged top plan of a number of the parts seen in the preceding figures. Fig. 4 is a sectional view, partly in elevation, taken on line 4—4, Fig. 3. Fig. 5 is an elevation of one of the detached hammers and the contiguous portion of the corresponding sear. Fig. 6 is a view, similar to Fig. 4, of a modified construction of this invention.

A, B, C, D represent, respectively, the barrels, frame, hammers and sears of a firearm provided with my single trigger mechanism, all of which parts may be of any suitable form, size and construction. In the illustrated embodiment of my invention, the hammers C are provided with extensions or shoulders *c* which engage the front ends of the sears D and hold said sears in their position assumed when the hammers are raised or fired. The rear ends of the sears D are provided with engaging surfaces *d* usually formed on the lower faces of arms *d'* projecting laterally from the contiguous edges of said rear ends.

The preferable embodiment of my single trigger mechanism comprises a trigger E and firing members F, G. Said trigger E is of any desirable form, size and construction, is illustrated as supporting the members F, G, and may be connected by a part *e* to a suitable safety-device, unnecessary to describe herein.

The firing member F is here shown as pivoted at its front end to the trigger E by a substantially vertical pivot *f* extending through upper and lower faces of the trigger E and provided with a forwardly projecting hand-piece *f'* which is arranged beneath the trigger-plate *f²* with its rear face in contact with a front surface of the trigger, and is provided with a curved lower face *f³* forming, essentially, a continuation of the curved lower face of the front end of the trigger. As best seen

in Fig. 3, the firing member F extends rearwardly from the pivot *f* and is formed with a comparatively narrow rear end provided with an engaging surface *f⁴* which is arranged beneath the surfaces *d* of the sears D in direct alinement with one of the surfaces *d*, and may be singly encountered with said surfaces for actuating the sears to release the hammers C. If it is desired to move the surface *f⁴* out of direct alinement with the surface *d* of one of the sears into position to encounter the surface *d* of the other sear, the front end of the hand-piece *f'* is moved laterally, whereupon the rear end of the firing member F is moved laterally in the opposite direction and arranges said surface *f⁴* in the predetermined position.

I usually hold the firing member F in its operative position by a locking member H which is reciprocally movable endwise in a socket extending downwardly from the upper face of the trigger E in a direction substantially parallel to the pivot *f*, is forced upwardly by a spring *h*, and is provided with a rounded upper engaging end for entering separated sockets *f⁵* in the lower face of the firing member F and holding said member in either of its operative positions. The contiguous walls of the sockets *f⁵* converge downwardly for depressing the locking member H against the action of its spring *h* as the rear end of the firing member F is moved laterally in order to arrange the surface *f⁴* thereof in alinement with the surface *d* of the sear which it is desired to first force from its operative position to permit the corresponding hammer to effect the first discharge.

The firing member G is shown as pivoted to the trigger E by a substantially horizontal pivot *g* extending crosswise of the trigger at the rear of the pivot thereof, and, as provided with a weighted rear portion *g'* and with surfaces *g²* for engaging the surfaces *d* of the sears D and actuating said sears to release the hammers C, and as engaged by a spring *g³* for automatically forcing the member G forwardly to its operative position. Said surfaces *g²* are here illustrated as the opposite ends of a single shoulder of the firing member G, but it is obvious that the surfaces *g²* may be separated if desired. As seen in Figs. 1 and 3, the firing member G is normally held by suitable means in an inoperative position against the action of the spring *g³* with its surfaces *g²* at the rear of the surfaces *d* of the sears D. The means for holding the firing member G in its inoperative position preferably consists of a spring I having one end secured to the trigger E and its opposite or free end extended above and across the lateral arms *d'* of the sears D and normally engaged with the firing member G. When the hammers C are cocked, the rear ends of the sears D swing downwardly out of engagement with the spring I which forces the firing member G backwardly against the action of the spring *g³*. Said holding means, although usually consisting of a spring,

may be composed of an arm I^o , Fig. 6, having one end engaged with said firing member, and a spring I'' connected to the arm I^o .

The operation of my single trigger mechanism is as follows:—Upon the first upward movement of the trigger E, the firing member F is elevated with the trigger and actuates one of the sears D for permitting the corresponding hammer to effect the first discharge. The firing member G is also raised with the trigger, thus elevating the surfaces g^2 of the member G above the surfaces d of the sears. As the firing member F actuates one of the sears, the rear end of said sear elevates the means I out of engagement with the firing member G, whereupon the spring g^3 forces the member G forwardly, but owing to the elevation of the firing member G at this time, the surfaces g^2 thereof are above the surface d of the sear not actuated, and the front face of the member G beneath the surfaces g^2 engages the end face of the sear remaining in its normal position, said end face forming a stop for limiting the forward movement of the member G. The counter-recoil following the shock of the first discharge acts directly upon the firing member G and causes the same to momentarily swing backwardly on its pivot relatively to the remaining portion of the firearm, and before the end of the downward movement of the trigger and the firing members. The involuntary second pull of the trigger due to the recoil of the firearm takes place before the return of the firing member G to its operative position and, consequently, a premature second discharge is prevented, although said member G will always return to its operative position in time to actuate the second sear upon the second pull of the trigger, even though said pull is made with as much rapidity as possible after the first discharge.

The construction and operation of my single trigger mechanism will now be readily understood upon reference to the foregoing description and the accompanying drawing, and it will be obvious that more or less change may be made in the component parts of said mechanism without departing from the spirit of my invention.

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

1. In a single-trigger mechanism, a plurality of hammers, sears for the hammers, a trigger, means movable by the trigger for actuating one of the sears, a firing member also movable by the trigger for actuating the other sear, said firing member being acted upon directly by the counter recoil following the shock of the first discharge and thereby momentarily prevented from moving into operative position, and means for moving said member automatically into operative position after said recoil, substantially as and for the purpose described.

2. In a single-trigger mechanism, a plurality of hammers, sears for the hammers, a trigger, means movable by the trigger for actuating one of the sears, and a firing member also movable by the trigger for actuating the other sear, said firing member being acted upon directly by the counter recoil following the shock of the first discharge and thereby momentarily prevented from moving into operative position, said member being forced from operative position by the cocking of the hammers, substantially as and for the purpose specified.

3. In a single-trigger mechanism, a plurality of hammers, sears for the hammers, a trigger, a pair of firing members movable by the trigger for actuating the respective sears, the firing member effecting the second dis-

charge being normally in an inoperative position, and being momentarily prevented by the counter recoil following the shock of the first discharge from moving into operative position, means for moving the last-mentioned firing member automatically into operative position, and movable means for normally preventing said last-mentioned firing member from moving into operative position, said latter means being forced from operative position upon the first discharge, substantially as and for the purpose set forth.

4. In a single-trigger mechanism, a plurality of hammers, sears for the hammers, a trigger, a pair of firing members movable by the trigger, one firing member actuating the sears singly and being movable into position to actuate either sear, and the other firing member actuating the other sear, said other firing member being normally in an inoperative position, and being momentarily prevented by the counter recoil following the shock of the first discharge from moving into operative position, means for moving said other firing member automatically into operative position, and movable means for normally preventing said other firing member from moving into operative position, said latter means being forced from operative position upon the first discharge, substantially as and for the purpose described.

5. In a single-trigger mechanism, a plurality of hammers, sears for the hammers, a trigger, means for actuating one of the sears, a firing member for actuating the other sear, said firing member being momentarily movable backwardly automatically by the counter recoil following the shock of the first discharge and thereby prevented from effecting a premature second discharge, and means for moving said member automatically into operative position, substantially as and for the purpose specified.

6. In a single-trigger mechanism, a plurality of hammers, sears for the hammers, a trigger, a pair of firing members for actuating the respective sears consecutively, the firing member effecting the second discharge being normally in an inoperative position, and being momentarily movable backwardly by the counter recoil following the shock of the first discharge and thereby prevented from moving into operative position, means for moving the last-mentioned firing member automatically into operative position, and movable means for normally preventing said last-mentioned firing member from moving into operative position, said latter means being forced from operative position upon the first discharge, substantially as and for the purpose set forth.

7. In a single-trigger mechanism, a plurality of hammers, sears for the hammers, a trigger, a pair of firing members for actuating the respective sears consecutively, the firing member effecting the second discharge being normally in an inoperative position, and being movable by the trigger from position to operatively engage the sear, and being momentarily movable backwardly by the counter recoil following the shock of the first discharge and thereby prevented from moving into operative position, means for moving the last-mentioned firing member automatically into operative position, and movable means for normally holding said last-mentioned firing member in its inoperative position upon the first discharge, substantially as and for the purpose described.

8. In a single trigger mechanism, a plurality of hammers, sears for the hammers, a trigger, a pair of firing members for actuating the respective sears consecutively, the firing member effecting the second discharge being normally in an inoperative position, and being movable by the trigger above its position assumed to operatively engage the sear and into position to engage a stop-surface of one of the sears for limiting the forward movement of said firing member, and being acted upon directly by the counter recoil following the shock of the first discharge and thereby momentarily movable backwardly and prevented from moving into operative position when the trigger is depressed, means for moving said last-mentioned firing member automatically into operative position, and means for normally holding the last-mentioned firing member in its inoperative position, said latter means being forced from operative position upon the first discharge, substantially as and for the purpose specified.

9. In a single-trigger mechanism, a plurality of hammers, sears for the hammers, a trigger, a pair of firing members movable by the trigger, one firing member being pivoted to the trigger by a substantially vertical pivot and actuating the sears singly and being movable laterally on its pivot into position to actuate either sear, and the other firing member actuating the other sear, said other firing member being normally in an inoperative position, and being momentarily prevented by the counter recoil following the shock of the first discharge from moving into operative position, means for moving said other firing member automatically into operative position, and means for normally holding said other firing member from moving into operative position, said latter means being forced from operative position upon the first discharge, substantially as and for the purpose set forth.

10. In a single-trigger mechanism, a plurality of hammers, sears for the hammers, a trigger, a pair of firing members, one being pivoted to the trigger by a substantially vertical pivot and actuating the sears singly, and being movable laterally on its pivot into position to actuate either sear, and the other firing member being movable by the trigger and actuating the other sear, and a locking member carried by the trigger for holding the laterally movable firing member in either position, said locking member being movable endwise in a direction substantially parallel to said pivot into and out of engagement with the laterally movable firing member, substantially as and for the purpose described.

11. In a single-trigger mechanism, a plurality of hammers, sears for the hammers, a trigger, a pair of firing members for actuating the respective sears consecutively, the firing member effecting the second discharge being provided with a weighted portion and pivoted to the trigger by a substantially horizontal pivot, said last-mentioned firing member being normally in an inoperative position, and being momentarily movable on its pivot by the counter recoil following the shock of the first discharge and thereby prevented from moving into operative position, means for moving said member effecting the second discharge automatically on its pivot into operative position, and means for normally holding said member from moving into operative position, said latter means being forced from operative position upon the first discharge, substantially as and for the purpose set forth.

12. In a single-trigger mechanism, a plurality of hammers, sears for the hammers, a trigger, means movable by the trigger for actuating one of the sears, and a firing member for actuating the other sear, said firing member being connected to the trigger by a substantially horizontal pivot extending crosswise of the trigger, and being normally out of position to engage said other sear and movable on its pivot in one direction from its normal position into position to engage said other sear after the first discharge, and said firing member being movable on its pivot in the opposite direction from its normal position, preliminary to its first mentioned movement, by the counter recoil following the shock of the first discharge.

13. In a single-trigger mechanism, a plurality of ham-

mers, sears for the hammers, a trigger, a pair of firing members for actuating the respective sears consecutively, the firing member effecting the second discharge being provided with a weighted portion and pivoted to the trigger by a substantially horizontal pivot, said last-mentioned firing member being normally in an inoperative position, and being momentarily movable on its pivot by the counter recoil following the shock of the first discharge, and firing member being normally in an inoperative position, means for normally holding the last-mentioned firing member from moving into operative position, said means being forced from operative position upon the first discharge, and a spring for automatically moving said firing member effecting the second discharge on its pivot into operative position, substantially as and for the purpose specified.

14. In a single-trigger mechanism, a plurality of hammers, sears for the hammers, a trigger, a pair of firing members, one actuating the sears singly and being pivoted to the trigger by a substantially vertical pivot and being movable laterally into its position to actuate either sear, and another firing member actuating the other sear and being pivoted to the trigger by a substantially horizontal pivot at the rear of the pivot of the trigger and being movable forwardly and rearwardly on its pivot into and out of operative position, substantially as and for the purpose set forth.

15. In a single-trigger mechanism, a firing member movable by the trigger, means for preventing the firing member from assuming its operative position, a plurality of hammers, sears for the hammers cooperating with said preventing means for forcing the same from operative position when one of the hammers is released, substantially as and for the purpose described.

16. In a single-trigger mechanism, a pair of firing members movable by the trigger for effecting consecutive firing, means for preventing the firing member effecting the second discharge from assuming an operative position, a plurality of hammers, and sears for the hammers cooperating with said preventing means for forcing the same from operative position when either sear is operated upon the release of one of the hammers, substantially as and for the purpose specified.

17. In a single-trigger mechanism, a pair of firing members movable by the trigger, means for preventing one of the firing members from assuming operative position, sears for forcing the preventing means from operative position, and hammers cooperating with the sears for holding the same in their position assumed when forcing said preventing means from operative position, substantially as and for the purpose set forth.

In testimony whereof, I have hereunto signed my name in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 9th day of May, 1902.

WILLIAM H. BROWN.

Witnesses:

D. LAVINE,
S. DAVIS.