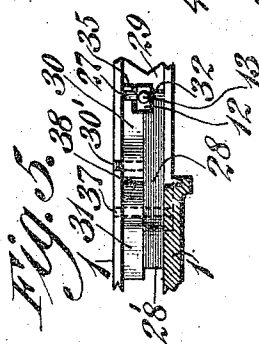
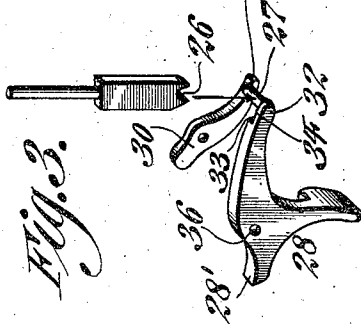
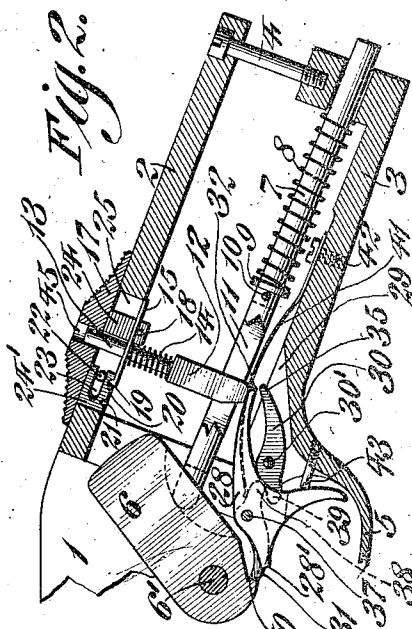
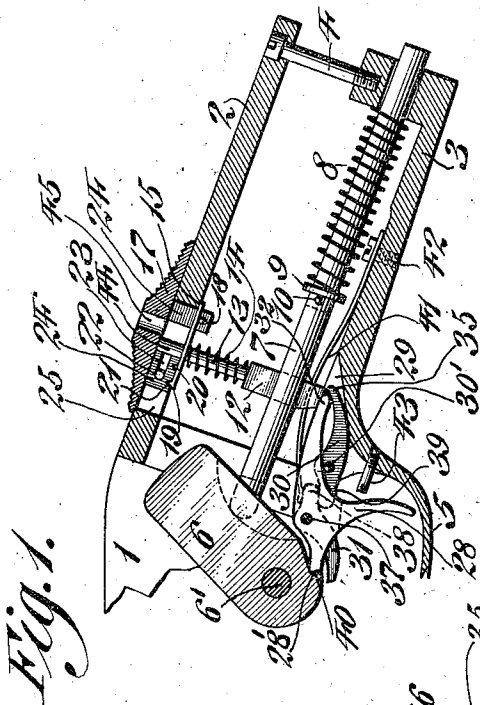
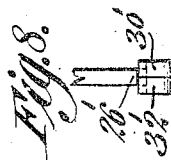
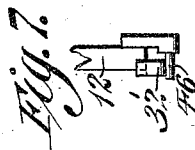
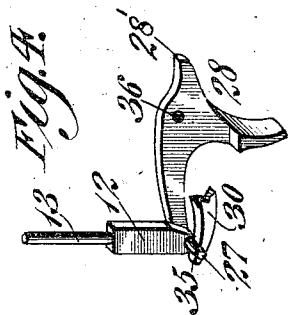


943,344.

Patented Dec. 14, 1909.



WITNESSES

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HENRY B. FEBIGER, OF NEW ORLEANS, LOUISIANA.

MOVEMENT FOR FIREARMS.

943,344.

Specification of Letters Patent. Patented Dec. 14, 1909.

Application filed July 16, 1909. Serial No. 507,883.

To all whom it may concern:

Be it known that I, HENRY B. FEBIGER, a citizen of the United States, residing in the city of New Orleans, parish of Orleans, and State of Louisiana, have invented a new and useful Movement for Firearms, of which the following is a specification.

This invention relates to a device of the same general character as that illustrated in my Patent No. 908,553, of January 5, 1909; and I herein describe and claim one feature which was illustrated and described therein but which was not claimed therein, namely, the locking of the safety slide during the firing operation.

One purpose of my invention is to simplify and strengthen the auxiliary sear for the hammer when the trigger is drawn back.

A further purpose of my invention is to cause the auxiliary sear to engage preferably with the same notch of the hammer as the trigger sear.

A further purpose of my invention is to provide a plurality of sears, one of which is automatic when the trigger is drawn backward, and means for disengaging the automatic sear under certain circumstances.

A further purpose of my invention is to provide for the placing of the automatic sear for engagement with the hammer when the trigger is drawn on the under side of the hammer, leaving the rear of the hammer without complication thereby.

A further purpose of my invention is to provide a trigger pull in an automatic gun which shall immediately release from the hammer without any drag or loss of motion.

A further purpose of my invention is to provide direct and positive movement of the sear engaging the hammer notch with movement of the trigger in an automatic loading gun movement.

A further purpose of my invention is to provide for the locking of the safety slide in an automatic loading gun during the firing operation to prevent jarring of the safety slide to safety position.

It further consists of other novel features of construction, all as will be hereinafter fully set forth.

For the purpose of illustrating my invention, I have shown in the accompanying drawings some forms thereof which are at present preferred by me, since the same have been found in practice to give satisfactory

and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized and that my invention is not limited to the precise arrangement and organization of these instrumentalities as herein shown and described.

Figure 1 is a longitudinal section through a portion of an automatic loading gun frame with the parts in safety position and the hammer cocked. Fig. 2 is a section similar to Fig. 1 with the parts in firing position. Fig. 3 is a perspective of certain operative parts in detached position. Fig. 4 is a perspective of the same parts assembled and from another view point. Fig. 5 is a plan partly in section of some of the parts involved in my invention. Fig. 6 is a perspective of a safety slide latch illustrated by me. Figs. 7 and 8 are broken end elevations of modified forms of the elements in Fig. 3.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings:—1 designates a frame having upper and lower tangs 2 and 3, stock assembling screw 4 and trigger guard 5. Within this portion of the frame I have illustrated a well known hammer 6 pivoted at 6' and main spring rod 7, operating spring 8, collar 9 and pin 10, comprising the hammer and operating mechanism pressing forwardly at all times and driving it against the firing pin not shown. In Fig. 2 this rod is broken away to show a preferably central slot 11, through which passes the trigger spring post 12, connecting with the upper part 13 of the trigger spring post, about which is coiled the trigger spring 14, bearing on plate 15 which is apertured at 16 and slotted at 16' to permit the rod to pass through it and to act as a guide. This plate performs the function of affording a bearing for the upper part of the trigger spring, a guide for the depending portion of the safety slide 17 which is retained therein by pin 18 and also affords a spring latch 19 for the safety slide 17-fitting into the notches 20 or 21 according to the position of the safety slide and being given its spring pressure by means of the spring 14. The forward end of the safety slide is additionally guided and retained by a pin 22 operating in a groove 23. The depending portions 24 and 24' of the safety slide operate within a slot 25 in the upper tang, the center of this slot

being of a diameter sufficient to accommodate the trigger spring post 13.

The lower portion of the trigger spring post is preferably flattened because of the desirability of having it pass through the rod 7 so that both of them may be central, and is desirably notched at 26 to bear in this form upon a laterally projecting extension 27 from the end of the trigger 28, carrying sear 28'. The extension is shown in the form of a pin secured thereto or integral therewith. The major portion of the space 29, where it cuts the lower tang, giving room laterally at one point for the auxiliary sear release lever 30, pivoted upon pin 30' or other suitable support, and the auxiliary sear 31 engaging therewith. The end 32 of the trigger is shown as even with or projecting above the projection 27 through a portion of its width at 34 and as slotted or notched at 33 throughout the remaining portion of its width to provide a seat for approximately half of the width of the lower portion of the trigger spring post in order that this trigger spring post may be central throughout, this being the preferred form, though evidently it could be accommodated at this point in other ways.

The auxiliary sear release lever 30 lying with its end 35 preferably wholly below the projection 27 does not interfere in any way with the seat of the lower end of the trigger spring post and need not be notched for this reason, notwithstanding that it preferably lies near the trigger. It should be noted at this point that the auxiliary sear release lever does not engage the lower side of the projection 27 at all times, as for example, in the position shown in Fig. 2.

The trigger is apertured at 36 to pivot about any suitable pin 37 which affords pivotal support also in the form illustrated, though evidently not essentially for the auxiliary sear 31, the trigger and sear preferably, as stated, occupying approximately the entire width of the space within the tang. The auxiliary sear 31 is provided with a lever end 38 upon the opposite side of the pin 37, as shown in dotted lines in Figs. 1 and 2, for engagement by the end 39 of the auxiliary sear release lever 30 so that downward movement of the end 35 of this release lever 30 will result in disengagement of the auxiliary sear from the hammer notch 40, this hammer notch preferably extending clear across the hammer for engagement at will with the auxiliary sear and trigger sear, though evidently two notches extending each part way across the hammer at convenient points would accomplish the same purpose. The single notch across the hammer simplifies the construction and operation. In either event the auxiliary sear 31 is placed slightly in advance of the trigger sear, either actually, where the single

hammer notch is used or relatively with respect to the position of the notches if a plurality of notches are used. The auxiliary sear is normally pressed against the edge of the hammer to drag thereon when the trigger is drawn backwardly by any suitable means such as a spring 41 which is shown as pressing against the end 39 of said sear and which is held to its duty in the form illustrated by means of screw 42.

The trigger 28 is limited in its movement by an adjustable stop 43 here shown as screwed to place through the trigger guard. It will be evident that the adjustment of this screw determines not only the limit of movement of the trigger itself but the greatest height to which the trigger spring post is raised by means of the rear end of the trigger 32 and therefore controls also the distance to which the end 44 of this trigger spring post will extend within or through the aperture 45 in the safety slide 17.

In operation it will be evident that the trigger cannot be pressed without the end of the trigger spring post passing into the aperture 45 in the safety slide and that this slide in the position shown in Fig. 1, therefore forms a complete stop to movement of the trigger and, correspondingly, to disengagement of the trigger sear from its hammer notch. It will be equally evident also that the safety slide cannot be moved at all while the trigger spring post is engaged within the aperture 45 and that this engagement can be timed to begin as soon as the trigger has moved at all, and, therefore, that it is merely a matter of dimensioning the trigger and spring post to determine that the safety slide shall be incapable of movement except when the trigger is in its forwardmost position. The safety slide is also guarded against accidental movement or any movement from its extreme positions except under pressure by means of the engagement of the latch 19 spring pressed within the notches 20 and 21 by means of the spring 14.

In the position shown in Fig. 1 the trigger sear 28' is shown in engagement with the notch 40, being pressed therein by the lower end of the trigger spring post which is spring pressed against the opposite end 32 of the trigger. This is the position of the parts which would be assumed if the hammer were cocked manually, the trigger sear being the earlier of the two sears to engage with its notch and, when set, preventing engagement of the auxiliary sear with its notch as herein indicated. This is the only latch which would be required with other than an automatic gun, the auxiliary sear and mechanism relating thereto being intended to take care of the automatic cocking of the hammer, while the trigger is held in retracted position, such as illustrated in Fig. 2 to provide for retention of the hammer in its posi-

tion until the trigger is released and with such release to substitute the retention by the trigger sear for the retention by the auxiliary sear. The hammer will of course be released and the gun discharged from the position shown in Fig. 1 merely by movement of the trigger after the safety slide has been moved forward to firing position, and, as will be clearly seen from this, Fig. 1, the gun cannot be fired until this has been done. The safety slide is thus seen to be a mechanical lock under those circumstances.

When the hammer is cocked by the recoiling of the discharge but with the trigger in retracted position as shown in Fig. 2, the end 35 of the auxiliary sear release lever is free from engagement with the projection upon the end 32 of the trigger. It may, however, be intended to engage or free from the trigger itself as seen in the modification in Fig. 7 where the extension 46 is shown as reversely directed and as upon the end of the release lever, extending beneath the end 32 of the trigger. The trigger spring post 12 here engages with the end of the trigger alone and transmits the required pressure to the auxiliary sear release lever, accomplishing the same purpose though in a slightly less desirable way. Another form by which this same transmission of motion can be accomplished is shown in Fig. 8 where the end 32' of the trigger and the auxiliary sear release lever 30' are not provided with projections to interengage at all but are both acted upon directly by the end 26' of the trigger spring post to effect the same result, this form also being slightly less desirable than the form illustrated in the main figures. Under the circumstances last considered the rear end 30' of the auxiliary sear lever, whatever its form, will be freed from engagement with the end of the trigger or with the trigger spring post as the case may be when the trigger is drawn backwardly and the auxiliary sear will be free to operate under pressure of its spring, of whatever character, with the result that it will be pressed against the end of the hammer to drag thereon and will immediately engage with the notch 40, or any suitable notch provided for it, with the result that the hammer will be caught in its rear position by this auxiliary sear while the trigger sear is out of engaging position because of the retracted position of the trigger. The hammer being thus cocked against the auxiliary sear must now have the trigger sear substituted for the auxiliary sear that it may be subject to control by the trigger and that the gun may be fired. For this purpose the trigger in its movement toward normal position under the influence of the spring 14 pressing upon the trigger spring post 12 does not completely seat its sear within the notch until the trigger spring post or the

end of the trigger or other operative engagement between the trigger spring post and the auxiliary sear release lever presses the rear end of this auxiliary sear release lever, with the result that the auxiliary sear is released from the notch and the hammer is allowed to move slightly forward under the influence of its operating spring 8 until the trigger sear engages with its notch, here shown as the same notch 40 as that engaged by the auxiliary sear.

If desired I may make use of a supplemental stop for the trigger spring post in the form of abutment of the rear end of the auxiliary sear release lever against tang 3 but this is not essential as it would be stopped by engagement of the trigger sear with the inner extremity of the notch.

It will be understood that other connections can be made use of by which the auxiliary sear can be operated from the trigger operating mechanism or from the trigger itself and that other relations of the trigger and auxiliary sear than the side by side mounting shown may be employed. It will also be evident that the concentric pivoting of the trigger and auxiliary sear are not essential though convenient. It will also be evident that other means of engagement between mechanism timed to move with the trigger and the safety slide may be made use of and that the slide itself may be of different form and differently mounted.

It will now be apparent that I have devised a novel and useful construction of a fire arm which embodies the features of advantage enumerated as desirable in the statement of the invention and the above description, and while I have in the present instance shown and described a preferred embodiment thereof which has been found in practice to give satisfactory and reliable results, it is to be understood that the same is susceptible of modification in various particulars without departing from the spirit or scope of the invention or sacrificing any of its advantages.

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

1. In a device of the character stated, a trigger having a sear, an auxiliary sear, a trigger spring rod, a trigger spring, and pivoted means between the trigger spring rod and the auxiliary sear adapted to disengage the auxiliary sear when the trigger is released.

2. In a device of the character stated, a trigger, having an integral sear, an auxiliary sear pivoted concentrically with the trigger pivot, an auxiliary sear release lever cooperating with said auxiliary sear, and means pressing the trigger normally forward and engageable with movement of the trigger to disengage the auxiliary sear by

pressure upon the auxiliary sear release lever.

3. In a device of the character stated, a trigger having a sear, an auxiliary sear pivoted concentrically with the trigger pivot, an auxiliary sear release lever, and means for normally pressing the trigger forward and operating the auxiliary sear release lever.

4. In a device of the character stated, a trigger having a sear on one side and a lever arm on the other side of its pivotal point, an auxiliary sear having a lever arm upon the other side of the pivotal point thereof from the sear, a pivoted auxiliary sear disengaging lever having one end engaging the lever arm of the auxiliary sear and the other end extending upon the opposite side of its pivot and in proximity to the lever arm of the trigger, and means for normally pressing downwardly upon the trigger lever arm, to disengage the auxiliary sear with forward movement of the trigger.

5. In a device of the character stated, a trigger having an integral sear, an auxiliary sear, and means engageable with the trigger to force it downwardly and to release the auxiliary sear by engagement with a portion of the trigger.

6. In a device of the character stated, a hammer having a notch, resilient means for operating the same, a trigger having a sear and an auxiliary sear both engageable with said notch and each having a lever arm on the opposite side of the pivot point thereof from the sears, and means for pressing the trigger forward and disengaging the auxiliary sear with forward movement of the trigger.

7. In a device of the character stated, a hammer having a notch, resilient means for operating the same, a trigger sear and an auxiliary sear engageable with the same notch as the trigger sear, means for pressing the trigger forward to operate the same, and means below the trigger operating means for releasing the auxiliary sear coincident with a forward movement of the trigger.

8. In a device of the character stated, a hammer having a notch, resilient means for operating the same, a trigger having an integral sear, an auxiliary sear, both of said sears engaging with the notch and resilient operating means for one sear operating to disengage the other sear.

9. In a device of the character stated, a hammer having a notch at the pivoted end, a trigger having an integral sear, an auxiliary sear, both of said sears engaging with the hammer notch, and means for operating one of said sears to disengage the other of said sears.

10. In a device of the character stated, a

hammer having a notch at the pivoted end thereof, means for operating the same, a trigger having a sear thereon, an auxiliary sear also engaging the pivoted end of the hammer, resilient means for normally forcing the trigger forward, and pivoted means operated thereby to disengage the auxiliary sear when the trigger moves forward.

11. In a device of the character stated, a hammer notched at its pivoted end, a plurality of sears engageable therewith and pivoted concentrically, a trigger carrying one of said sears, a disengaging lever for the other of said sears, a trigger, operating means for moving the trigger forwardly and causing movement of the lever to disengage the auxiliary sear.

12. In a device of the character stated, a frame having a tang, a hammer, means for operating the same, a trigger, a sear movable with said trigger and engaging a notch in the hammer, a safety slide interior of the tang, and means operated by the backward movement of the trigger passing through said tang to positively engage with said slide and prevent its movement except when the trigger is in its forward position.

13. In a device of the character stated, a frame having a tang, a hammer having a notch, operating means therefor, a trigger, a sear operated by the trigger engaging with said notch, a safety slide interior of the tang and resilient operating means for the trigger passing through said tang positively engaging with the slide to prevent movement of the trigger when the slide is in the safety position.

14. In a device of the character stated, a frame having a tang, a hammer having a notch, operating means therefor, a trigger, a sear operated by said trigger engaging with said notch, a safety slide interior of the tang, and means operating with said trigger passing through said tang engaging with the slide in its safe position to prevent movement of the trigger sear away from the hammer notch and engaging with the slide in its operating position when the trigger is moved rearwardly to prevent movement of the slide.

15. In a device of the character stated, a hammer having a notch, a spring for operating the same, a trigger, a sear moved thereby to engage the hammer notch, spring operating means for said trigger, a plate engaged by the spring of said operating means and carrying a catch, a safety slide having notches engaging with the catch, and guides for the safety slide.

HENRY B. FEBIGER.

Witnesses:

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